

Wilkes University



2015-2016

GRADUATE BULLETIN

84 W. South Street
Wilkes-Barre, Pennsylvania 18766
(570) 408-4235
1-800-WILKES U, ext. 4235
(1-800-945-5378)
www.wilkes.edu

STATEMENT OF DISCLAIMER

The statements in this bulletin are for the purposes of information. The University reserves the right to change any provisions or requirements, including tuition and fees, any time within the student's term of residence. No contract is created or implied. Students must fulfill all prevailing degree or program requirements.

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Wilkes University

Graduate Bulletin | 2015-2016

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Wilkes-Barre, Pennsylvania 18766

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- [Degrees and Programs](#)
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ACADEMIC CALENDAR 2013 - 2014

Academic Calendar 2015 - 2016

Wilkes University
Wilkes-Barre, PA 18766
1-800-WILKES-U
www.wilkes.edu

Summer 2015

Pre-Session		
Classes Commence	Monday, May 18, 2015	8:00 a.m.
Classes End	Friday, June 5, 2015 (Including Final Examinations)	12:00 noon
First Day Session		
Classes Commence	Monday, June 8, 2015	8:00 a.m.
Classes End	Friday, July 10, 2015 (Including Final Examinations)	12:00 noon
Nine-Week Evening Session		
Classes Commence	Monday, June 8, 2015	6:00 p.m.
Classes End	Tuesday, August 11, 2015 (Including Final Examinations)	10:00 p.m.
Second Day Session		
Classes Commence	Monday, July 13, 2015	8:00 a.m.
Classes End	Friday, August 14, 2015 (Including Final Examinations)	12:00 noon

Fall Semester 2015

Classes Commence	Monday, August 31, 2015	8:00 a.m.
Labor Day Recess Begins	Saturday, September 5, 2015	8:00 a.m.
Classes Resume	Tuesday, September 8, 2015	8:00 a.m.
Summer Commencement	Sunday, September 13, 2015	1:00 p.m.
Fall Recess Begins	Thursday, October 15, 2015	8:00 a.m.
Classes Resume	Monday, October 19, 2015	8:00 a.m.
Follow Thursday Class Schedule	Tuesday, November 24, 2015	.
Thanksgiving Recess Begins	Wednesday, November 25, 2015	8:00 a.m.
Classes Resume	Monday, November 30, 2015	8:00 a.m.
Classes End	Monday, December 14, 2015	5:00 p.m.
	(Follow Friday Class Schedule)	
Final Examinations Begin	Monday, December 14, 2015	6:00 p.m.
Final Examinations End	Wednesday, December 23, 2015	4:30 p.m.
Interession 2016	Monday, December 28, 2015 to Friday January 15, 2016	
M.A.Creative Writing Residency	Friday, January 8, 2016 Saturday, January 16, 2016	

Spring Semester 2015

Classes Commence	Monday, January 18, 2016	8:00 a.m.
Spring Recess Begins	Saturday, March 5, 2016	8:00 a.m.
Classes Resume	Monday, March 14, 2016	8:00 a.m.
Holiday Recess Begins	Thursday, March 24, 2016	8:00 a.m.
Classes Resume	Tuesday, March 29, 2016	8:00 a.m.
Special Note	Tuesday, May 3, 2016 (Follow Thursday Class Schedule)	
Classes End	Wednesday, May 4, 2016 (Follow Friday Class Schedule)	5:00 p.m.
Final Examinations Begin	Thursday, May 5, 2016	6:30 p.m.
Final Examinations End	Saturday, May 14, 2016	12:30 p.m.
Commencement	Saturday, May 121, 2016	TBA

Administrative Support Offices

Center for Continued Learning

(570) 408-4236
Second Floor, Weckesser Annex
169 South Franklin Street
FAX: (570) 408-7846

Graduate Education

(570) 408-4671
Lower Level, Breiseth Hall
139 South Franklin Street
FAX: (570) 408-4905

Graduate Admissions

(570) 408-3338 - Kristin Donati
(570) 408-4235 - Diane Duda
(570) 408-3259 - Debra Meszaros
(570) 408-4404- Alexandria Duffney
(570) 408-5585- Holly Banks-Fry

Lower Level, Breiseth Hall
139 South Franklin Street
FAX: (570) 408-7846

International Student Services

(570) 408-7854
Second Floor, Max Roth Center
FAX: (570) 408-3626

International Student Graduate Admissions

(570) 408-4235
Lower Level, Breiseth Hall
FAX: (570) 408-7846

School of Pharmacy

(570) 408-4280
First Floor, Stark Learning Center
160 South River Street
FAX: (570) 408-7828

Student Services Center

(Financial Aid, Registration, Student Accounts, Transcripts)
(570) 408-2000
University Center on Main
141 South Main Street

Graduate Admissions

Ms. Joanne A. Thomas, Director

(570) 408-4234

1-800-WILKES U, ext. 4234

(1-800-945-5378)

www.wilkes.edu

Graduate Program Contacts

Business Administration (M.B.A.)

- Dr. Anthony L. Liuzzo - (570) 408-4709
- Ms. Patricia Naumann - (570) 408-3203
- Ms. Kathleen Houlihan - (570) 408-3235

Creative Writing (M.A.)

- Dr. Bonnie Culver - (570) 408-4527

Creative Writing (M.F.A.)

- Dr. Bonnie Culver - (570) 408-4527

Bioengineering (M.S.)

- Dr. William Terzaghi - (570) 408-4762
- Dr. Gregory Harms - (570) 408-4828
- Ms. Alexandria Duffney - (570) 408-4404

Electrical Engineering (M.S.E.E.)

- Dr. Thyagarajan Srinivasan - (570) 408-4811
- Ms. Alexandria Duffney - (570) 408-4404

Engineering Management (E.G.M.)

- Mr. Robert Taylor - (570) 408-4810
- Ms. Alexandria Duffney - (570) 408-4404

Mechanical Engineering (M.S.M.E.)

- Dr. Jamal Ghorieshi - (570) 408-4889
- Ms. Alexandria Duffney - (570) 408-4404

Graduate Education

- Dr. Kurt Eisele - (570) 408-4058

Art and Science of Teaching (M.S.)

- Ms. Grace Surdovel - (570) 408-3102

Classroom Technology (M.S.)

- Dr. James Chiavacci - (570) 408-4678

Early Childhood Literacy (M.S.)

- Ms. Grace Surdovel - (570) 408-3102

Educational Development & Strategies (M.S.)

- Ms. Grace Surdovel - (570) 408-3102

Educational Leadership (Ed. D.)

- Dr. Kurt Eisele - (570) 408-4058

Educational Leadership (M.S.)

- Dr. Mary Kropiewnicki - (570) 408-6171

Middle Level Degree Program

- Ms. Grace Surdovel - (570) 408-3102

Instructional Media (M.S.)

- Dr. James Chiavacci - (570) 408-4678

Instructional Technology (M.S.)

- Dr. James Chiavacci - (570) 408-4678

Reading Specialist Certification (M.S.)

- Dr. Mary Kropiewnicki - (570) 408-6171

School Business Leadership (M.S.)

- Dr. Mary Kropiewnicki - (570) 408-6171

School Reform (Letter of Endorsement)

- Dr. Kurt Eisele - (570) 408-4058

Secondary Education / Biology (M.S.)

- Dr. Michael A. Steele - (570) 408-4763

Secondary Education /Chemistry (M.S.)

- Dr. Terese M. Wignot - (570) 408-4267

Secondary Education / English & History (M.S.)

- Dr. Lawrence T. Kuhar - (570) 408-4532

Secondary Education / Mathematics (M.S.)

- Dr. V. Ming Lew - (570) 408-4844

Special Education (M.S.)/Autism

- Dr. Kristin C. Bewick - (570) 408-4562

21st Century Teaching & Learning (M.S.)

- Ms. Grace Surdovel - (570) 408-3102

**Teacher Leadership and Instructional Coaching
(Letter of Endorsement)**

- Ms. Grace Surdovel - (570) 408-3102

Teaching English as a Second Language (M.S.)

- Dr. Kimberly Niezgoda - (570) 408-4170

Mathematics (M.S.)

- Dr. Barbara A. Bracken - (570) 408-4836

Nursing (M.S., DNP.)

- Dr. Deborah A. Zbegner - (570) 408-4086

Pharmacy (Pharm. D.)

- Dr. Harvey A. Jacobs - (570) 408-4277

INTRODUCTION

Wilkes University

Our Mission

To continue the Wilkes tradition of liberally educating our students for lifelong learning and success in a constantly evolving and multicultural world through a commitment to individualized attention, exceptional teaching, scholarship and academic excellence, while continuing the university's commitment to community engagement.

Our Vision

To be a nationally recognized independent university where intense personal engagement in exceptional academic and professional programs cultivates a lifelong commitment to learning, ethics, civic responsibility, and openness to cultural diversity.

Our Values

- Mentorship: Nurturing individuals to understand and act on their abilities while challenging them to achieve great things;
- Scholarship: Advancing knowledge through discovery and research to better educate our constituents;
- Diversity: Embracing differences and uniqueness through sincerity, awareness, inclusion and sensitivity;
- Innovation: Promoting creative scholarly activities, programs, ideas, and sustainable practices; and
- Community: Appreciating and collaborating with mutual respect to foster a sense of belonging.

Institutional Student Learning Outcomes

Students will:

- Demonstrate a comprehensive understanding of appropriate theories, methods and standards specific to the field of study;
- Demonstrate appropriate application of the methods, skills and techniques specific to the field of study;
- Demonstrate the ability to engage in the process of systematic inquiry appropriate to the field of study;
- Demonstrate effective written communication skills in the field of study;
- Demonstrate effective oral communication skills in the field of study; and
- Demonstrate understanding of integrity and ethical practice.

Academic Information

- [Degree Requirements](#)
- [Regulations on Thesis Research](#)
- [Master's Thesis Policy](#)
- [Appeal of Grade Policy](#)
- [Auditing](#)
- [Regulations for Withdrawal](#)
- [General Notes On Academic Standing and Dismissal](#)
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- [Challenge Examinations](#)
- [Transcripts](#)
- [The Family Educational Rights and Privacy Act of 1974](#)

Transfer Credits

(Please see individual department information for program-specific considerations.)

A maximum of six credits of graduate credits toward a master's degree or 12 credits of post-master's graduate work for terminal degrees, done at another U.S. regionally accredited university or college may be applied toward the requirements for the degree. There is no exception to this policy. Acceptance into a graduate program is necessary before credits can be considered for transfer. Students seeking to transfer courses from another institution may be requested to produce a course syllabus and coursework so that a final determination can be made. Academic officers who are agents of Wilkes University may review the syllabus to determine if the course contains graduate level learning objectives, a sufficient number of contact hours (40-45 for a three-credit course), and an appropriate content outline containing assessments and assignments that clearly delineate student performance.

Wilkes University does not transfer credits for 1) courses titled as workshops; 2) other courses that are determined not to meet academically rigorous standards; 3) courses that do not align with the goals and objectives of existing Wilkes University courses; or 4) courses taken as Pass-Fail, unless the "Pass" can be substantiated by the former institution as being equivalent to a grade of B (3.0) or better.

A transfer credit form must be submitted and an official transcript provided in order for credits to be transferred. Approval for any transferred credits toward a degree program must be granted by the head of the respective program. Transferred academic work must have been completed within six years prior to the date of admission to the graduate program at Wilkes University, with a grade of B (3.0) or better. Grades earned in transferred courses are not included in the computation of the cumulative grade point average at the University.

Current Wilkes graduate students who seek to take a graduate course at another accredited university or college in order to transfer the credits into their respective program at the University must complete a "Pre-Approval Form" prior to registering for the course. All completed forms for transfer of credits should be submitted to the respective department. An official transcript must be requested from the other institution as soon as it is available and should be sent to the Student Services Office.

A student cannot be approved for graduation until all transfer credits are approved by the respective program head, an official transcript has been received at Wilkes University from the institution granting the credit, and the approved transfer credits are posted to the Wilkes University transcript. All paperwork must be received prior to each semester's Wilkes graduation clearance deadline.

Appeal of Grade Policy

Communication necessary in the appeal process may be in person for on-campus students or via digital or video-conferencing technology for off-campus students.

Grades themselves are not generally grievable. More often students challenge grades based on a deviation from course policy or grading practices outlined in the course syllabus. Students who have a clear and justifiable grievance with reference to a grade should first seek resolution with the instructor and subsequently with the Department Chairperson/Director. It is expected that they will consult with the faculty member in an effort to resolve the dispute. The Chairperson/Director may also exercise the option to involve others in the discussions with the faculty member.

If satisfaction cannot be obtained, the student has the right to appeal to the Dean of the respective college or school. The appeal must be made by the end of the fourth week of the ensuing fall or spring semester. The Dean will consult with the Department Chairperson/Director and will establish an Appeal Committee of three faculty members - at least two of whom shall be from the department of the faculty member concerned, if possible. A Committee Chairperson will be appointed by the Dean. The Committee Chairperson will notify the faculty member of the appeal and the composition of the Committee.

The Appeal Committee will review the student's complaint, interview the faculty member, and study the evidence presented by both parties. If necessary, the Committee may interview the student, other students or faculty in its efforts to determine the facts.

The Committee will make a report to the Dean in which it reviews the issues and recommends a solution. In most cases this will be a recommendation to uphold the grade awarded by the instructor or to alter the grade that the student received. In some cases the recommendation may be to present the student with other alternatives such as the completion of additional work before a final grade is determined.

The Dean, after consultation with the Provost, will inform the faculty member and the student of the recommendations of the Appeal Committee and will take the steps that are necessary to implement the recommendations.

Auditing

A person desiring to audit a course does not need to meet normal admission requirements, but must obtain approval to audit from the course professor and indicate "audit" on the registration form. Auditors must file the appropriate Application and pay the non-refundable application fee. The student receives no credit for courses taken as an auditor.

A student enrolled in a course may apply to become an auditor by contacting the Graduate Admissions office, and must obtain approvals from the course professor. This change of status must be completed before the end of the second week of the class.

Challenge Examinations

Students who desire to remove undergraduate deficiencies may do so by formal course work or by challenge examination. Challenge examinations may not be used to earn credits toward the graduate degree. Arrangements are made by the student directly with the respective Graduate Program head.

Course Numbering

Courses are designated by three-digit numbers. The first digit denotes the level of the course as follows:

- 400-499 Courses for graduate students and advanced undergraduates
- 500-599 Courses for graduate students only (except with special permission)
- 600-699 Courses for doctoral students only (except with special permission)

Degree Requirements

Students may be awarded the master's degree upon satisfactory completion of all graduate degree requirements and the following specific requirements:

1. A completed file (application, application fee, official transcripts, copy of teaching certificate, letters of recommendation, and any required testing).
2. Regular admission into a graduate program;
3. Satisfactory completion of all requirements for the degree to be completed within six calendar years preceding the date of the granting of the degree. If an extension of the six-year limit is needed, a request should be submitted in writing to the program director/department chair. The respective college or school Dean will review the request and consult with appropriate parties (graduate program director, chairperson, or advisor) and will notify the student and the appropriate administrative offices of the final decision.
4. A minimum average of 3.0 for all graduate work (see Grade Regulations);
5. If a thesis is required, the candidate should:
 - a. Be accepted by a thesis advisor and an Advisory Committee before completion of nine hours of graduate study;
 - b. Submit an acceptable thesis in the required format and quantity of copies no later than three weeks prior to the commencement at which the degree is to be conferred;
 - c. Arrange for publication of the thesis. (see Thesis Policy);

Specific requirements for graduate degrees will be found within each of the degree programs described in the following sections.

Students CANNOT substitute other courses for any of the required core courses in any program without the express written consent of the department chair/director

General Notes On Academic Standing and Dismissal

NOTE BEFORE READING THIS SECTION:

There may be more stringent programmatic requirements regarding this policy. Students should be sure to review the appropriate section of this bulletin pertaining to their respective program.

In order for a student to maintain good academic standing in graduate programs, the student must maintain a GPA of 3.0 or higher at and after the point of completing 10 credits in his/her respective program. The 10 credit probationary allowance provides a student the opportunity to demonstrate his/her academic ability. After completing 10 credits, a graduate student whose GPA drops below a 3.0 will be dismissed from his/her respective program. Students who are dismissed may retake a course or courses as a non-degree student, which provides for the opportunity to replace one or more of their deficient grades. If the student is successful in moving his/her GPA above the 3.0 level, he/she may re-apply for acceptance into his/her program.

Only courses with grades below a 3.0 may be taken for grade replacement. If a student elects to take a course for grade replacement, the higher grade earned will be counted in the calculation of the GPA. For example, if a student earns a 2.0 and replaces the grade and earns a 2.5, the higher grade (2.5) would be used in the GPA calculation. Courses may be repeated for grade replacement only one time. Note: Students must also meet all degree requirements in addition to maintaining an acceptable GPA.

Individual programs/departments may have more stringent academic progression requirements than those prescribed by the general policies. Students are urged to review program-specific academic progression requirements that may be described in the section of this bulletin pertaining to their respective program.

A student who is dismissed from the graduate program may request a review of the case by the Graduate Studies Committee. The request should be submitted in written form to the Dean of the appropriate college or school, who will coordinate with the Graduate Studies Committee.

Grading

Numerical grades are given for graduate work. Letter grade equivalents appear in the conversion table below:

4.0 = A	Academic achievement of superior quality
3.5 = B+	Academic achievement of good quality
3.0 = B	Academic achievement of acceptable quality in meeting graduation requirements
2.5 = C+	Academic achievement of adequate quality but below the average required for graduation
2.0 = C	Academic achievement below the average required for graduation
0.0 = F	Failure. No graduate course credit

A grade of "X" indicates assigned work yet to be completed in a given course. Except in thesis work, grades of "X" will be given only in exceptional circumstances. Grades of "X" must be removed through satisfactory completion of all course work no later than four weeks after the end of the final examination period of the semester in which the "X" grade was recorded. Failure to complete required work within this time period will result in the conversion of the grade to 0. An extension of the time allowed for the completion of work should be endorsed by the instructor in the form of a written statement and submitted to the Registrar.

Master's Thesis Policy

1. Upon approval of the thesis topic, the student and the advisor will identify the objectives, develop a timetable, and plan the distribution of credits in that timetable. This written plan will be placed in the student's files in the department office and the Student Services Center.
2. The student shall be continuously registered for a minimum of one thesis credit up to and including the semester that he/she defends the thesis and submits the final copies of the thesis.
3. The thesis objectives should be completed within the allocated number of credits and within the timetable developed; however, circumstances and the uncertainties associated with research and project work may require subsequent adjustments to the credits allocated and the timetable. Such adjustments shall also become part of the student's files in the department office and the Student Services Center.
4. Students registered for thesis credits will be awarded a grade reflecting the level and the quality of work conducted for that semester. Incomplete and audit designations are explicitly excluded as thesis grades.
5. The satisfactory completion of the thesis is indicated by passing the oral examination and obtaining the necessary approvals from the Thesis Advisory Committee, the Department Chairperson, and the Dean of the respective college or school.
6. Student appeals to any provisions in this policy shall be to the Thesis Advisor, the Department, and finally to the Graduate Studies Committee.

Subsequently the original will be filed in the department and the copy will be filed in the Library. If the student desires a personal copy bound, an additional copy should be furnished for appropriate signatures. For thesis binding fees, see section on Fees and Expenses

Regulations for Withdrawal

A student may withdraw from a course during the first week of the semester by informing the instructor, completing a withdrawal form that is co-signed by the student and the student's advisor, and submitting the signed form to the Student Services Center (or in Mesa, to a representative of the Student Services Center) within the first week of the semester. A student may withdraw from a course from the second week through the tenth week only with the approval of both the instructor and the student's advisor. (The completed form must be returned to the Student Services Center by the end of the tenth week.) Thereafter, a student may withdraw from a course only for serious circumstances, as determined by the Department Chairperson or the Director/Coordinator of the appropriate graduate program in consultation with the instructor. A mark of "W" indicates an authorized withdrawal from the course. Students are advised that withdrawing from a course(s) may have financial implications; see sections on "Refunds" and "Withdrawal-Return of Financial Aid Funds" in this bulletin for more information.

It is the student's responsibility to initiate withdrawal from a course by obtaining the withdrawal form from the Student Services Center, having it signed by the appropriate personnel, and returning it to the Student Services Center (or in Mesa, to a representative of the Student Services office) within the tenth-week period. A grade of "0" is assigned by the instructor and recorded for all courses in which no official withdrawal, as specified above, has been completed by the student.

"W" is not a grade; it does not constitute a reflection of academic performance within a course. The appropriate grade for academic performance below the minimum standard for course credit is "0."

A "W" granted after the first week of the semester reflects a decision on the part of the student, after consultation with the instructor and advisor, not to be enrolled in a course. A "W" granted after the tenth week of the course constitutes recognition and agreement by the student, instructor, and advisor, that, due to some extraordinary circumstances beyond the student's control, enrollment in that course is not possible or feasible. Fear of receiving a low grade does not constitute an extraordinary circumstance.

Regulations on Thesis Research

Each graduate student shall select a major advisor under whose direction he/she wishes to pursue thesis research, if a thesis is required. Following acceptance of the candidate, the advisor shall appoint two other members of the graduate faculty to serve with the advisor as the student's Thesis Advisory Committee. Students in the doctoral program in Education should refer to the Handbook for Doctoral Students for more complete details on the dissertation.

Part-time students employed in laboratories on a full-time basis may be permitted to conduct their thesis research in these laboratories, if a mutually satisfactory agreement can be reached by the student, the laboratory staff, and the University. In such cases, a qualified member of the staff of the employer shall be named by the Department Chairperson to serve as a member of the student's Thesis Advisory Committee. This staff person shall be appointed an adjunct professor of the University and shall supervise day-to-day progress of the student's research.

Student Conduct

Graduate students are obligated to observe the regulations governing all Wilkes University students relative to:

1. Academic honesty and integrity;
2. Respect for the rights of others relative to their safety, welfare and educational commitments;
3. The safety and security of the entire community.

Any disciplinary cases arising from a lack of observance of these regulations will be adjudicated by the Dean of the appropriate college or school and the Office of Student Affairs. Appeals from the decisions of this Committee may be made in written form to the Provost.

Policies regarding student conduct and additional grievance procedures are published in the Wilkes University Graduate Student Handbook, which is available on the web site at www.wilkes.edu. Students enrolled at the Mesa Center for Higher Education must reference the Handbook for the Mesa site for information specific to Arizona.

Anti-Hazing Policy

Wilkes University does not condone hazing of any kind. Hazing, is defined as follows:

any action or situation which recklessly or intentionally endangers the mental or physical health or safety of a student or which willfully destroys or removes public or private property for the purpose of initiation or admission into or affiliation with, or as a condition for continued membership in, any organization operating under the sanction of or recognized as an organization by an institution of higher education. The term shall include, but not be limited to, any brutality of a physical nature, such as whipping, beating, branding, forced calisthenics, exposure to the elements, forced consumption of any food, liquor, drug or other substance, or any other forced physical activity which could adversely affect the physical health and safety of the individual, and shall include any activity which would subject the individual to extreme mental stress, such as sleep deprivation, forced exclusion from social contact, forced conduct which could result in extreme embarrassment, or any other forced activity which could adversely affect the mental health or dignity of the individual, or any willful destruction or removal of public or private property. For purposes of this definition, any activity as described in this definition upon which the initiation or admission into or affiliation with or continued membership in an organization is directly or indirectly conditioned shall be presumed to be "forced" activity, the willingness of an individual to participate in such activity notwithstanding.

This policy applies to all University organizations, groups and individuals and is equally applicable on and off campus.

Any alleged act of hazing brought to the attention of University officials will be fully investigated and those individuals and/or groups accused will be brought before the University's Student Affairs Cabinet for adjudication.

Anyone found in violation of the Hazing Policy will be subject to disciplinary action.

The severity of the sanctions will depend on the circumstances surrounding the violation. Disciplinary action by the University will be in addition to any penalties imposed by civil authorities for violations of state law.

Graduate Disciplinary Process Flowchart

- Incident/Alleged policy violation takes place.
- Report submitted to Student Affairs for investigation.
- No policy violation or suspect found. End of process.
- Investigation finds policy violation and alleged suspect.
- Conference held with alleged violator
- Charges and sanctions agreed upon by Assoc. Dean of Student Affairs (or designee for off-campus locations) and alleged violator. End of process.
- Assoc. Dean of Student Affairs (or designee for off-campus locations) and alleged violator do not agree upon charges and sanctions.
- Process is determined
- Administrative hearing held by the Assoc. Dean of Student Affairs (or designee for off-campus locations), if the policy violation does not appear to warrant dismissal or suspension from the University.
- Graduate Studies Committee, if the policy violation could result in dismissal or suspension from the University.
- Decision is made regarding the violation/sanction.

- Student is determined not to be in violation of a University policy. End of process.
- Student is found guilty of violation and accepts the sanction imposed. End of process.
- Student is found guilty of violation and does not accept sanctions.
- Student requests an appeal of the decision through the Office of the Provost
- The appeal is denied. The process ends.
- The appeal request is approved.
- The Office of the Provost reviews the case.
- The original decision is upheld. End of Process.
- It is discovered that there was :
 - Procedural error;
 - New evidence;
 - Inappropriate sanction.
- The case returns to the original Graduate Studies Committee group or another group, as determined by the Dean of the respective school or college, based on findings.

Grievance Policy/Internal Complaint Procedure

The purpose of this policy is to serve as a guide for students who wish to file a complaint about any aspect of Wilkes University's operations/policies/procedures or about the actions of any student, visitor, or employee of Wilkes University. This policy is to be implemented only when dealing with circumstances not covered by existing academic or student conduct procedures.

Procedures and Guidelines

1. Complaints, other than those being filed against persons, should be directed, in writing, to the appropriate Administrator (Director/Dean)/Department Chair/Faculty Member). It is the responsibility of that person to address the situation and, if possible, see that it is corrected. This must be done within a reasonable amount of time which will of course, depend upon what must be done to rectify the situation. The Administrator (Director/Dean)/Department Chair/Faculty Member should inform the student in writing of the measures that were taken or are being taken to address the issue. If a student does not receive a response from the Administrator, Department Chair, Faculty Member within two weeks from the date of originally filing the complaint, the student may then bring the complaint to the appropriate Vice President or the Provost.
2. Complaints being filed against a person, should be directed, in writing, to that person's immediate supervisor. If it is a sexual harassment complaint the procedures, outlined in the Sexual Harassment Policy should be followed. If the complaint is not one of sexual harassment, then it is the responsibility of the supervisor to address the issue with the respondent. The supervisor must inform the student, in writing, of the measures that were taken or are being taken to address the issue. If the student does not receive a response from the supervisor within two weeks from the date of originally filing the complaint, the student may then bring the complaint to the appropriate Vice President or Provost.
3. In all instances of a student filing a complaint, the student must be assured in writing that no adverse action will be taken against the student for filing a complaint.
4. All documentation regarding a complaint, as well as its disposition, must be securely stored in the office of the person who received the complaint and acted upon it. These records must be maintained for a period of six (6) years from the date final action was taken on said complaint.
5. If a student feels that a response to a complaint is unacceptable and/or unreasonable, the student may bring the complaint to the immediate supervisor of the person who initially acted in response to the matter. If a student does not receive a response from that supervisor within two weeks from the date of originally filing the complaint with that person, the student may then bring the complaint to the appropriate Vice President or Provost.
- 6.

Additional Notice to Arizona residents enrolled at Wilkes University

If the complaint cannot be resolved after exhausting the institution's grievance procedure, the student may file a complaint with the Arizona State Board for Private Postsecondary Education. The student must contact the State Board for further details. The State Board address is 1400 W. Washington Street, Room 260, Phoenix, AZ 85007, phone # 602-542-5709, website address: www.azppse.gov

The Family Educational Rights and Privacy Act of 1974

Wilkes University, in full compliance with the Family Educational Rights and Privacy Act of 1974 (FERPA), shall make educational records available to students upon request. Likewise, in accordance with the law, individually identifiable educational records will not be released to other than authorized individuals without written consent of the student.

Wilkes University has established a policy on access to and release of student information for compliance with provisions of this Act. This policy is published on the Office of the Registrar/Recorder page of the web site at www.wilkes.edu.

Transcripts

Transcripts are provided by the Student Services Center (1-800-WILKESU ext. 2000). They are issued only upon request by the student in either written or electronic form. The electronic request form is available via the MyWilkes portal under the student services tab (my transcript- request an official transcript).

A student requesting a transcript in person at the University Center on Main (UCOM) or at the Student Services desk in the Mesa Center for Higher Education must present valid photo identification.

Transcripts given directly or mailed to students do not carry the University seal and are not official. The seal is attached only when the transcript is mailed directly from the University to another academic institution or authorized agency.

A transcript of work completed at any college or university other than Wilkes University must be obtained directly from that institution.

Accreditation

Wilkes University is an accredited member of the Middle States Association of Colleges and Schools and its graduate and professional programs are approved by the Department of Education of the Commonwealth of Pennsylvania. In addition to total program accreditation, certain special areas are recognized by professional organizations. The Master's

Degree in Business Administration (MBA) program is accredited by the Accreditation Council for Business Schools and Programs (ACBSP), and the graduate program leading to the Master of Science Degree with a major in Nursing is accredited by the Commission on Collegiate Nursing Education (CCNE). The American Council on Pharmaceutical Education (ACPE) has granted full accreditation to the Doctor of Pharmacy (Pharm. D.) program.

Wilkes University is also licensed by the Arizona State Board for Private Postsecondary Education to operate in the state of Arizona

Assistantships and Counselorships

The University awards a limited number of graduate assistantships. Positions are posted by department on the Wilkes web site. Applications for these assistantships must be filed with the Department Chairperson/Manager based on the application deadline listed in the posting. The department then reviews the graduate assistantship applications and a recommendation for awarding assistantships is made to the Dean of the respective college or school. Award letters are then sent to the individual or individuals who have been named as graduate assistants.

Criteria for Selecting Graduate Assistants

1. Candidates must have regular admission to a program or be a current student with good academic standing (3.0 GPA or higher).
2. Students admitted under Conditional Classification may apply for an assistantship after completion of nine semester hours of graduate credit with a cumulative average of 3.0 or higher.
3. Candidates must complete the Graduate Assistant on-line application process.
4. Candidates must demonstrate the ability and willingness to perform the duties outlined in the job posting and those assigned by the Director/Department Chair of the respective program.

Center for Continued Learning

Margaret Petty, Director

The Center for Life-Long Learning is your partner as you consider and explore non-credit training, and graduate and post-baccalaureate options. Assistance is available to help guide you through the details and prerequisites of established programs at Wilkes University. In addition, we are committed to helping our local and regional community as it strives to search for the newest approaches, technologies and skills needed to build and sustain a thriving economy and a rich social and cultural environment.

Information regarding the services of the center can be obtained by calling the College of Graduate and Professional Studies at 800-WILKESU Ext. 4235.

Center for Global Education and Diversity

The Center for Global Education and Diversity fosters Wilkes' mission of educating students "in a constantly evolving and multicultural world" through the cooperation among and the

individual operations of the three offices: Global Education, Diversity Initiatives and International Student Services.

Each area of the Center advises and advocates for groups of students: underrepresented minorities, students who are going abroad to study and international students who have come to the US to study at Wilkes. The Center brings diversity and a global perspective to the Wilkes community by sponsoring campus-wide programs to develop a broader understanding of the world. Providing support in matters of diversity, internationalization, and globalization, the Center is an important resource and support for all areas of the University.

Services provided include:

- support for students from underrepresented groups such as women, ethnic and religious minorities, gay/lesbian/transsexual/transgender, and individuals with disabilities
- support for international students, faculty, and staff
- Study Abroad experiences for students and faculty
- support for faculty and students interested in the globalization of higher education
- the Intensive English Program (IEP) for non native English speakers who need to improve their English language skills
- multicultural programming
- reserving the Savitz Multicultural Lounge in the Henry Student Center

Staffing for the Center:

- Georgia Costalas, Executive Director; Director of International Student Services
- TBA, Director of Global Education
- Erica Acosta, Associate Director for Diversity Initiatives
- Jonathan Summers, Associate Director for International Student Services
- Kimberly Niezgoda, Assistant Director for ESL Services

The Center is located in the Max Roth Center at the corner of S. Franklin and W. South Streets. The Center's staff may be reached at (570) 408-7854. Off campus students may access the services of the Center by calling or e-mailing the director, Georgia Costalas at georgia.costalas@wilkes.edu.

Financial Aid

- [Institutional and Financial Assistance Information](#)
- [Renewal of Financial Aid](#)
- [Loans](#)
- [Important Terms](#)
- [Federal Direct Stafford Loans](#)
- [Federal Direct Graduate Plus Loans](#)
- [Withdrawal - Return of Financial Aid Funds](#)

Loans

Financial assistance for which the recipient assumes the obligation to repay the amount of the funds received. Most educational loans provide for payment of principal and interest to begin sometime after the student graduates or stops attending an approved institution on at least a half-time basis.

Federal Direct Graduate Plus Loans

A Graduate Plus Loan is a low-interest education loan provided to graduate and professional students through the Federal Family Education Loan Program. This program supplements the Federal Stafford Loan Program and should only be used after a student's Stafford eligibility is exhausted.

Federal Direct Stafford Loans

The Federal Direct Stafford Loan is a federal program that enables students to borrow money from the Department of Education. It is available to graduate students who are enrolled on at least a half-time basis. Graduate students may apply for \$20,500 per academic year.

Repayment of principal and interest begins six months after the student ceases to be enrolled on at least a half-time basis.

The borrower is expected to make quarterly interest payments while the student is enrolled in graduate school or have the interest capitalized. The loan carries a fixed interest rate.

Introduction

Repayment of the principal begins six months after the student is no longer enrolled on at least a half-time basis.

Important Terms

Academic Grade Level: Graduate programs are divided into two grade levels; the first 15 graduate credits are grade level 6 and the remainder of the program is grade level 7.

Academic Progress: For continued participation in the loan programs, students must meet specific academic progress requirements, which include the successful completion of a specific number of credits based on their enrollment status and the maintenance of a 3.0 cumulative grade point average.

Enrollment Status: Full-time is 9 graduate credits per semester; half-time is 6 graduate credits per semester.

Graduate Student: A student who has been officially accepted as a candidate in a graduate degree program. A completed file has been reviewed and an acceptance letter has been issued.

Institutional and Financial Assistance Information

Wilkes University subscribes to the belief that the primary responsibility for financing the cost of higher education rests with the student and his or her family, but Wilkes remains committed to providing resources to make the cost of earning a degree affordable. Toward that end, the University maintains an extensive program of loans.

Financial assistance for qualified students is awarded in the form of financial aid packages, which consist of loans. All students are encouraged to apply for financial assistance.

Students with questions about financial aid or students seeking applications for financial aid should contact the Student Services Center or Admissions Office representative at the nearest Wilkes office. More detailed information regarding the financial aid programs and requirements is included in the Consumer's Guide to Financial Aid, Costs, and Charges at Wilkes University, which is also available at the Financial Aid Office and on the Wilkes University Web Site (go to <http://www.wilkes.edu/pages/2596.asp>).

Financial Aid Application Procedures

NOTE: Students must be regularly accepted for admission at the University before their application for financial aid will be considered.

1. Complete the Free Application for Federal Student Aid (FAFSA).
2. Students who wish to participate in the Federal Direct Stafford Loan or the Federal Direct Grad PLUS Program or both must also complete the appropriate promissory note application.
3. Send an email to onestop@wilkes.edu indicating the following:
 - that you are registered for 6 or more credits and the start dates for your classes.
 - that you have successfully completed the FAFSA
 - the amount of financial aid you are applying for.

Financial Assistance Programs - Summary*

Federal Direct Stafford Loan	• Contact a Wilkes University Student Service Center representative at the office nearest you. • FAFSA - Free Application for Federal Student Aid • First time borrowers must complete Federal Student Loan Master Promissory Note (MPN) and Student Loan Entrance Counseling: https://studentloans.gov/myDirectLoan/index.action
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Renewal of Financial Aid

Financial aid is awarded on an annual basis. The renewal of financial aid is not automatic and failure to submit renewal applications may result in the loss of financial aid. Students must, therefore, reapply for financial assistance each year, and renewal of awards is based on the timely completion of all required documents and on the student's continued eligibility for assistance.

The deadline for requests for renewal of financial aid is May 1. In addition to demonstrating continued financial need, students must also meet specific academic progress requirements to qualify for renewal. These requirements are explained in detail in the Consumer's Guide to Financial Aid.

Withdrawal - Return of Financial Aid Funds

In accordance with federal regulations, those students who receive federal financial aid and who withdraw from the University during the first 60% of a semester will have their federal financial aid (Stafford Loan and Grad PLUS Loans) adjusted based on the percentage of the semester completed prior to the withdrawal. That is, students will be entitled to retain the same percentage of the federal financial aid received as the percentage of the semester completed. This percentage is calculated by dividing the number of days in the semester (excluding breaks of five days or longer) into the number of days completed prior to the withdrawal (excluding breaks of five days or longer). The date of withdrawal will be the date the student begins the withdrawal process at the Registrar's Office unless attendance in class is documented after that date; in that case, the last date of documented attendance will be the official date of withdrawal. (See section on Withdrawals in this Bulletin.)

Students who do not follow the official withdrawal procedure but who stop attending classes for all of their courses will be considered to have withdrawn at the 50% point of the semester unless attendance is documented after that time. There will be no adjustment to federal financial aid after the completion of at least 60% of the semester.

Once the amount of the federal fund to be returned has been calculated, the funds will be returned in the following order:

1. Federal Direct Unsubsidized Stafford Loans
2. Federal Direct Grad PLUS Loans.

Please note that students who receive a refund of financial aid prior to withdrawing from the University may owe a repayment of federal financial aid funds received. Students will be contacted by a Student Services Center representative in such situations and will be given 30 days to repay the funds to the University. Students who fail to return the unearned portion of federal financial aid funds given to them will become ineligible for continued receipt of financial aid until such time as the repayment is made.

Financial Information

- [Tuition and Fees](#)
- [Graduate and Professional Program Tuition and Program-Specific Fees](#)
- [Payment of Charges](#)
- [Fall and Spring Full-Time Tuition](#)
- [Summer, Fall, and Spring Part-Time Tuition](#)
- [Monthly Payments](#)
- [Refunds](#)
- [Refund Schedule*](#)

Fall and Spring Full-Time Tuition

The unfunded cost of full-time tuition and fees will be paid or satisfactory arrangements made with the Controller's Office two weeks before the day on which classes begin. Unfunded costs are defined as the total of all appropriate charges for tuition, fees, room and board, etc., less the total of all approved financial aid awarded or credited to the student account for each semester or other instructional period. Satisfactory arrangements are defined as:

1. Enrollment in the Monthly Payment Option plan (discussed below);
2. Enrollment in one of the third-party, sponsored tuition coverage plans (ROTC Scholarship, Bureau of Vocational Rehabilitation, Office of the Blind, etc.).

If the payment in full or satisfactory arrangements are not made two weeks before the first day of class each semester, the registration for that semester will be cancelled and the student will not be allowed to attend classes. In order to be reenrolled and reregistered, the student will be required to pay a late registration fee of \$50 in cash before registering. Students whose accounts are two payments late will be cancelled from the Monthly Payment Option plan and the full unpaid amount will immediately become due and payable. All students who fall into this category and those students who have been classified as bad debts or have been turned over to a collection agency will not be eligible for consideration of any other alternative financial arrangements.

Students who have applied for a Stafford Loan (Guaranteed Student Loan) where approval has not been granted by the bank will be required to pay the lesser of \$300 or 25% of the loan requested two weeks before the first day on which classes begin. If the Stafford Loan (Guaranteed Student Loan) is subsequently approved, refunds of overpayments will be made after the loan check is posted to the student's account.

Graduate and Professional Program Tuition and Program-Specific Fees

Master's Programs Tuition and Fees

M.A. in Creative Writing And M.F.A. in Creative Writing	\$669 per credit hour
Application Fee	\$35
Acceptance Deposit	\$250 (one-time fee)
General University Fee	\$35 per credit hour
Thesis Reader Fee	\$300 (one-time fee)
M.B.A.	\$822 per credit hour
M.S.Ed.*	\$438 per credit hour
M.S. In Bioengineering	\$900 per credit hour
M.S. in Engineering Management	\$822 per credit hour
M.S.E.E.	\$900 per credit hour
M.S.M.E.	\$900 per credit hour
M.S. (Mathematics, Mathematics Education)	\$900 per credit hour
M.S. (Nursing)	\$625 per credit hour
Accelerated Baccalaureate (Nursing)	\$15,631 per semester

GENERAL FEES:

Application Fee	\$45 (one-time fee)
Audit Fee	One-half of tuition cost
Challenge Examination Fee	\$90 per credit hour
English as a Second Language Fee	\$6,264 per semester
Bioengineering Program Fee	\$100 per credit hour
Engineering Lab Fee	\$110 per class
General Fee	\$35 per credit hour
Graduation Fee	\$165 (charged to all graduating students in their last semester)
Thesis Binding Fee	\$20 per copy
Transcript Fee	The first transcript is free of charge; the fee for the second and subsequent transcripts is \$15 per copy.

Individual departments have the right to charge laboratory and breakage fees as appropriate.

Third-Party Billing and Deferred Payment forms may be picked up at the Controller's Office at 141 South Main Street or on the Wilkes web site. These forms must be submitted each semester.

Note: The Controller's Office is prohibited from signing graduation clearance forms until any outstanding balance is paid in full. Graduates who have requested the deferred payment option must pay the final semester balances personally before clearance forms are signed (or have a written guarantee from their employer that the amount will be paid to Wilkes regardless of course completion or final grade). Those prospective graduates not complying with the above policy will not be cleared until actual payment is received from their employer.

Doctoral and Professional School (Pharmacy) Tuition and Fees

EDUCATION (Ed.D)

Ed.D.*	\$602 (2015-16 Academic Year)
Application Fee	\$45

NURSING (DNP)

Tuition	\$840 per credit hour
Technology Fee	\$50 per credit hour

PHARMACY (Pharm.D.)

First Professional (Pharmacy School) Tuition and Fees:

Full-time Tuition (12-18 credits)	\$16,362 per semester
General University Fee	\$782 per semester

Monthly Payments

Wilkes has developed an interest-free, Installment Payment Plan to help ease the burden of financing an education. Arrangements may be made to finance the total unfunded cost of tuition and fees. Upon receipt of invoice you may enroll online by selecting Installment Payment Plan under the Student Services tab.

The following are some of the financial institutions that provide educational loans for parents and students:

- Key Education Resource Group: for information, call 1-800-KEY-LEND
- CitiAssist Loan at Citibank: for information, call 1-800-967-2400
- Signature Loan at Sallie Mae: for information, call 1-800-695-3317

Payment of Charges

Prior to the beginning of each semester, invoices listing all current semester charges and approved financial aid are mailed to all registered students. All payments can be mailed directly to Wilkes University - Student / P.O. Box 824696 / Philadelphia, PA 19182-4696. Discover, Mastercard, and American Express payments can be made on the Wilkes University web site (www.wilkes.edu). Credit card payments are not accepted by phone. Any question concerning charges or payments should be directed to (570) 408-2000 or 1-800-WILKESU extension 2000 or at onestop@wilkes.edu. On campus in-person payments can be made by check or cash in person at the cashier's window located on the first floor of University Center on Main (UCOM).

In addition to the above mailing address, students in Mesa, may make payments by check at 245 W. 2nd Street, Mesa, AZ 85201. Discover, MasterCard and American Express payments can be made on the Wilkes University web site (www.wilkes.edu). Any questions concerning charges or payments should be directed to 1-800-WILKESU extension 6372 or onestopAZ@wilkes.edu.

Students who fail to pay all indebtedness to the University shall not be permitted to receive any degree, certificate, or transcript of grades. Nor shall they participate in Commencement activities.

Refund Schedule*

Withdrawal or Drop Date Based on Percentage of Course Completion	Tuition Adjustment (Less Fees*)
0-13% course completion (includes first class session for all courses)	100%
14-20% course completion	75%
21-27% course completion	50%
28% course completion- end of term	0%

**All fees charged by the university are non-refundable*

Refunds**Tuition Refund Policy**

1. Non- participation students who are dropped from a course for not satisfying the requirement for initial course participation are refunded 100 percent of the course tuition.
2. The following schedule applies to learners in all credit bearing programs for all terms that follow traditional, accelerated and online formats.

Introduction

3. Students who request an exception to the tuition refund policy due to extenuating circumstances should submit a request in writing to the Tuition Refund Appeals Committee for review

Summer, Fall, and Spring Part-Time Tuition

Charges for summer and/or part-time tuition and fees must be paid in full two weeks before the first day of classes.

Tuition and Fees

Students have several options for making tuition payments to Wilkes.

Pay by mail by sending your invoice stub along with a check or money order to:

Wilkes University- Student
P.O. Box 824696
Philadelphia, Pa 19182-4696

On campus: pay in person option: Pay by cash or check in person at the Student Service Center located in the University Center on Main (UCOM) at 169 South Main Street, Wilkes-Barre, Monday through Friday between the hours of 10:00am and 3:00pm. Students enrolled at the Mesa Center for Higher Education location may pay in person at the Student Services Desk via the same methods described above.

Pay online by credit card* through the MyWilkes portal following the steps below using Mastercard, American Express, or Discover only. Visa is no longer accepted for payment of tuition.

A 2.75% convenience fee will be added to all credit card payments. This fee will appear as a Vendor Service Fee Charge on your statement. Please be aware that school districts/employers may not reimburse this convenience fee. Please check with your SD/employer.

*Credit card payments will no longer be accepted over the phone, in-person, or by mail.

To make online payments, follow these simple steps.

- Log on to www.mywilkes.wilkes.edu
- Enter your Wilkes username and password
- Click on the 'Student Services' tab
- Click on 'Pay on Account' and follow the steps to make a payment.
- Be sure to print your receipt before you log out of the system.

Students who do not know their Wilkes username and password should contact the Help Desk at 570-408-4357 or 11-800-WILKES-U ext. 4357. For more information about tuition payment options and the new TouchNet e-bill pay service, view our [Frequently Asked Questions \(FAQ\)](#).

Several plans have been developed to assist students who do not have the cash in hand financial means to pay their respective bill all at once, and it is suggested that these plans be considered when special assistance is needed. Students may consult with the Financial Aid Director, (or at off campus sites, with the financial aid representative) for information regarding scholarships and loan programs.

Subject to the regulations concerning refunds, the total tuition is considered fully earned by the University upon completion of registration by the student.

The following chart summarizes graduate and professional student expenses for the 2014-2015 academic year, which officially begins with the Summer Session, 2014* Students are referred to the course descriptions in this Bulletin for laboratory and other fees associated with particular courses. Inquiries about particular charges should be addressed to the Controller's Office. Note that graduate and professional school tuition and some fees are program specific

General Information

Housing and Dining

There are no housing facilities exclusively for graduate students on the Wilkes campus. Nor does the University provide accommodations for married couples or families. Graduate students are housed in University residence halls only on a space-available basis. Graduate students who are interested in living on campus should contact the Office of Residence Life to determine space availability.

The University Dining Hall, located on the third floor of the Henry Student Center, is open to all members of the Wilkes community.

For casual dining, the Rifkin Cafe is located on the first floor of the Henry Student Center, and Colonel Gambini's Cafe is also located on the first floor of UCOM. For information on meal plans, graduate students should contact the University Service Center on the first floor, 148 S. Main Street (UCOM Parkade).

Bookstore

Wilkes University and King's College, through Barnes & Noble College Booksellers, Inc., operate a joint bookstore facility on South Main Street, adjacent to Public Square. The "academic superstore" is designed to meet the needs of students as well as the community at large. The store features full textbook services -- both new and used; a full selection of general trade books; a local authors section, a full-service Starbucks Café and lounge chairs and tables. It also houses a "spirit" shop featuring logo merchandise for Wilkes University. For off-campus and on-line students, including Mesa, AZ, a full selection of textbooks, supplies, and logo merchandise is available for purchase on the [Barnes & Noble web site](#).

Career Services

The Office of Career Services is the liaison between the University and potential employers in business, industry, government, and educational institutions. Various services are offered to assist students at all stages of their career development. Students are encouraged to participate in this service by registering at Conyngham Hall at 130 South River Street or contact them by e-mail at carol.bosack@wilkes.edu.

Full-Time Student Status

A graduate student's status as full- or part-time is determined by the number of graduate credits the student carries in a semester. Nine graduate credits per semester is the minimum number of credits a graduate student may carry to be considered a full-time graduate student. A graduate student registered for at least six credits, but fewer than nine credits, is considered a half-time student. A graduate student registered for fewer than nine graduate credits in a semester is considered a part-time student.

Health Service

The Office of University Health Service maintains regular hours while the University is in session for the fall and spring semesters. A Nurse Practitioner and a Registered Nurse are available while Health Service is open, and a physician is available at specified hours during the week. Appropriate referrals are made as necessary to community physicians and hospitals. The Office of University Health Service does not provide clinic hours during the summer months. In times of escalating health care costs it is essential for students to have health insurance coverage.

Students enrolled at the Mesa Center for Higher Education should contact the Student Service Desk for details on how to access local health services. Services are rendered through relationship with local health care providers and students will be referred as needed, however it is important for students to have insurance coverage.

Library Services

The Eugene S. Farley Library, named in honor of the first president of Wilkes University, is located on the corner of South Franklin and West South Streets. It is one of the largest resource libraries in the region, with more than 200,000 volumes of books and bound journals, 7,000 electronic books, over 430 journals and newspaper subscriptions; 45,000 full text online journals, microforms, instructional audio-video materials, and a growing collection of classic films on DVD. The library has fine collections in English and American literature, history, the sciences, and mathematics, and sizable collections in other academic disciplines reflected in the University curriculum.

Also housed in the library are the University Archives, four special collections, rooms, and a SMART classroom. Campus-based students have access to 68 desktop computers and 18 wireless laptops and forty iPads that can be used anywhere within the library's wireless environment. Farley Library is home to the newly constructed Alden Learning Commons, a technology rich learning environment that has four enclosed group study rooms, twenty open group study areas that can accommodate groups of one to six students, the University Writing Center, the University Teaching Commons, and the Information Technology Computer Clinic and Help Desk. The library also offers limited private office study space for graduate students.

The Library's hours during the academic year are from 8:00 am to 12:00 midnight, Monday through Thursday, 8:00 am to 5:00 pm on Friday, 11:00 am – 6:00 pm on Saturday, and 11:00 am to 12:00 midnight on Sunday (all Eastern time). The Alden Learning Commons is opened on a 24/7 basis and is accessible to faculty and students via an University ID swipe card system. Patrons can get research help via SMS text message from any mobile phone via the library's Text A Librarian reference service. Summer sessions and Holiday hours, as well as any changes to the regular library schedule, are posted at the library entrance and on the library Web site. Library services are available online 24/7 at www.wilkes.edu/library.

Students located at off-campus sites have access to Farley Library services online 24/7 at www.wilkes.edu/library. Services include digital library holdings and communication with Librarians and support personnel. Students may also use ILLiad, the Inter-Library Loan system, to obtain periodical articles not available at Farley Library. Books and other materials can be inter-library loaned through the Mesa Public Library for those students enrolled at the Mesa Center for Higher Education.

Telephone: (570) 408-4250 or 800-WILKESU ext. 4250.

Farley Library Regulations

Use your valid Wilkes University I.D. card to obtain library privileges.

1. You are responsible for all materials charged out on your identification card. A valid Wilkes I.D. enables Wilkes University students to borrow books year-round at Misericordia University, Keystone College, King's College, Luzerne County Community College, Marywood University, and the University of Scranton.
2. Books circulate for one month. Renewals may be made in person, by telephone, or online from the patron access area of the Farley Library catalog-ENCORE. A book may be renewed once. DVDs circulate for three days (no renewal). Charges are levied for all overdue and damaged materials. Failure to pay fines or to return borrowed materials will result in denial of transcripts until fines are paid and materials returned.
3. Periodicals, journals, reference materials, and microform materials do not circulate. Reference materials, periodicals, and journal articles in print and microfilm format may be photocopied in accordance with the provisions of the U.S. copyright law.
4. To provide an optimum environment for study, all cellular phones and pagers must be kept on silent alert (vibration or visible flash) while in the library.
5. The University reserves the right to refer for disciplinary action patrons who have violated Library policy.

Farley Library Services

1. Reference Assistance: Professional staff is available for assisting students in their research endeavors.
2. Library Orientation: Group library orientation can be arranged for students upon request.
3. Bibliographic Instruction: Specific instruction in the use of library collections and reference tools is available for students upon request of the instructor.
4. Interlibrary Loan: This service is provided for students, faculty, and staff to supplement research needs. Inquire at the Reference Department for details.
5. Media Services: Media staff will have audiovisual equipment needed for classroom usage delivered to sites on campus. At least a 24-hour notice is required. Videos and DVDs may be reserved one week in advance of the expected need. The Library Media Room (Room 002) is also available, on a first-come, first-served basis, for classes or events.
6. Reserve Materials: Collateral course reading materials placed on reserve by faculty are maintained at the Circulation Desk.
7. Photocopying facilities for printed materials and micro materials are available in the library. A color copier is located on the first floor. Users are reminded to observe the restrictions placed on photocopying by the U.S. copyright law. The law and interpretive documents are available at the Circulation Desk.
8. Online searching of auxiliary databases is available by appointment through the Reference Department to support faculty research.
9. Students located at off-campus sites have access to Farley Library services online 24/7 at www.wilkes.edu/library. Services include digital library holdings and communication with Librarians and support personnel. Students may also use ILLiad, the Inter-Library Loan system, to obtain periodical articles not available at Farley Library. For students at our Mesa, AZ location, books and other materials can be inter-library loaned through the Mesa Public Library.

Music Collection

Darte Hall, on the corner of South River and West South Streets, houses a separate collection of music scores and recordings. For information about accessing materials housed in the music collection, call (570) 408-4420 or 1-800-WILKESU Ext 4420.

Pharmacy Information Center (Pharmacy Library)

The Pharmacy Information Center provides resources and services for student and faculty of the Nesbitt School of Pharmacy. It houses an up-to-date collection of drug information materials in print and electronic forms and provides a means for pharmacy students to become more proficient in the selection, evaluation, and use of drug information. The collection in the PIC is non-circulating; however, many additional books that support the pharmacy curriculum are housed in the Farley Library and non-reference titles may be borrowed from there. All School of Pharmacy journals are housed in the PIC. In addition to these print sources, students have access to a number of computerized resources, both on and off campus.

The PIC is generally open Monday – Thursday from 8:00 am to 5:30 pm and Friday from 8:00 am – 4:00 pm. The PIC follows the University holiday schedule. The librarian is available only until 4:00 pm.

Telephone: (570) 408-4286.

PIC Regulations

1. Books, periodicals, and reserve materials may not be taken from the center.
2. Smoking and food and beverages other than water are prohibited in the PIC.
3. Students will respect others' need for quiet and refrain from behavior that can be regarded as disruptive or a detriment to a positive learning environment.
4. Cell phones must be turned off or set to vibrate while in the PIC. Calls must be answered outside.

PIC Services

1. Reference Assistance: The librarian will assist students in locating materials and using library resources.
2. Bibliographic Instruction: The librarian will give individual or group instruction in the use of specific reference tools.
3. Interlibrary Loan: Needed books or journal articles that are not owned by Wilkes University may be obtained through Interlibrary Loan at no charge. Most article requests are filled within a few days.
4. Photocopying: A card-operated photocopier is available in the PIC. Please see the librarian to purchase or add money to a debit card.

Parking On Campus

Wilkes maintains parking areas on- and off-campus, and use of these facilities on week-days until 4:30 p.m. is by permit only. Except for resident parking lots, these areas are open for graduate student parking on weekends, and after 4:30 p.m. on weekdays, without a permit. Parking permits are issued on a varied schedule based on the applicant's relationship with the University and the availability of parking spaces. For information about the application process, contact the Campus Support Services Department at ext. 2349 (Verify extension).

A limited number of handicapped spaces are available in the on- and off-campus parking areas. Arrangements for a handicapped permit can be made through the Campus Support Services Department, on the first floor, 148 S. Main Street (UCOM Parkade).

University Identification Cards

Wilkes University provides a photo identification card (University ID card) to all of its eligible employees and students; additionally, University approved contracted personnel will be issued a University ID card. The University ID card will be used to identify all persons affiliated and employed by the University in order to facilitate safety and security; allow the cardholder access to specific areas, services and resources; and provide other privileges as designated by the University and/or its departments. All persons affiliated with and employed by the University are required to carry their University ID card at all times.

The University ID card is intended to serve as proof of an individual's status with the University. Depending on one's status with the University, access and privileges are restricted based on specific requirements. All eligible employees, students and University-approved contracted personnel who have been issued a University ID card are required to provide the card when properly requested by an agent of the University.

If the person refuses to furnish the University ID card he/she will be removed from the building/premises and/or subject to disciplinary action. Each University ID card is the prop-erty of the University; anyone who alters or intentionally mutilates the University ID card, who uses the University ID card of another, or who allows his/her University ID card to be used by another is subject to disciplinary action.

If a card is lost or stolen it can be replaced at the University Service Center (UCOM Parkade) or from the Student Services representative at the Mesa Center for Higher Education during regular hours of operation. A fee of \$30 will be charged to the student's account.

Wilkes University's ID Card distribution point is located at the University Service Center, 1st Floor, 148 S. Main Street (UCOM Parkade) or in Mesa, Arizona at the Mesa Center for Higher Education Wilkes University Student Services Desk.

Graduate Admission

Graduate Admissions

Graduate admission requirements vary based upon program of study. For all programs, an applicant must have received a baccalaureate degree from a regionally accredited institution and must have satisfactorily completed a minimum of coursework in designated areas, specific prerequisite courses dependent upon the field of advanced study. For specific information, students should review the specific program of interest found in detailed sections of this bulletin.

It is expected that candidates for admission shall have maintained average or above-average performance during their undergraduate years and thus demonstrate a capacity for successfully completing graduate work. Certain programs require a specific undergraduate grade point average for admission.

A student whose background is judged to be deficient in any specific area of the proposed field of study or whose undergraduate grades are below standard may be asked to remedy the deficiency by taking one or more courses at the undergraduate level, without graduate credit.

Application

Those interested in graduate programs offered at Wilkes University may apply on-line at www.wilkes.edu/applyonline. On campus, graduate admissions is located in the lower level of Breiseth Hall, Suite 002. You may contact the office by calling 800-WILKESU Extension 4235 or in Mesa, ext. 6372.

All students, whether degree-seeking or not, must complete an application for graduate admission form and pay the one-time application fee. For degree-seeking students, official transcripts (signed, sealed and sent directly from higher education institutions) of all previous college and/or university work must be submitted. Depending on the program of study and the opportunity to seek financial aid, a high school transcript may also be required. Students applying for Graduate Education programs must submit a copy of their teaching certificate for most, but not all, programs. (See specific program requirements.) Some degree-seeking programs require letters of recommendation, and some require test scores for admission. (See specific program requirements.) For information on testing, contact the Educational Testing Service, Box 955, Princeton, NJ 08540, or other appropriate organization. Additional admission requirements vary based upon program. Refer to specific degree--program sections for more information on the admissions criteria for each graduate program.

Students, other than international students, who are unable to complete the application process prior to the beginning of their first semester may be allowed special admission to the program pending processing of their application. This policy does not imply acceptance of the student into the degree program. Students failing to complete the application process by the beginning of the second semester after their initial application may be denied the right to register for courses.

Introduction

Students enrolling at the Mesa Center for Higher Education must also submit a completed Enrollment Agreement at least three (3) business days prior to the start of class.

Arizona Three-Day Cancellation: An applicant who provides written notice of cancellation within three days (excluding Saturday, Sunday and federal and state holidays) of signing an enrollment agreement is entitled to a refund of all monies paid. No later than 30 days of receiving the notice of cancellation, the school shall provide the 100% refund.

Categories of Admission

A graduate student may be admitted either as a degree or a special non-degree student, depending upon the student's objectives. After admission to one of these categories, request for a change of status must be officially acted upon by Graduate Admissions and the program director.

Wilkes undergraduate students may be permitted to enroll in certain graduate courses with the approval of their advisors and the Chairperson of the department offering the course. Credit for such courses will be at the undergraduate level.

Degree-Seeking Students

Regular admission is granted to students who have completed all requirements of the application process and who have demonstrated an acceptable level of academic work in their undergraduate degree program, including meeting program-specific, minimum GPA requirements and demonstrating preparedness for work at the graduate level in their field of specialization.

Provisional admission is granted to students who have not satisfied general or academic admissions requirements including missing documentation or insufficient prerequisite coursework for regular admission. Some graduate programs may allow a provisionally admitted student to begin graduate work before or simultaneously with completion of admissions deficiencies. Individual programs will determine the maximum number of graduate credits a provisional student may complete. Upon completion of the designated, maximum number of graduate credits, a provisionally admitted student will either be granted regular admission or denied admission into a graduate program. Under extraordinary circumstances a student may petition the Program Director or Chair of the Department, as applicable, for an extension to the number of allowable credits.

Conditional admission is granted to students who have demonstrated inadequate scores or academic performance, including failure to meet the minimum GPA requirement. To change to regular status, the conditionally admitted student must maintain a satisfactory GPA, as determined by the specific department of study, during the first X credit hours (typically six credits.) Conditional admission is not granted to our doctoral degree programs.

Rejection will be used in cases when a student fails to meet the general or academic admissions requirements of the individual program of study.

Cancellation. Applicants who have not fully completed the admission process, and who have not yet started taking academic classes, will have one year to complete their application file. Should the process not be completed within that timeframe, the application will be cancelled one year after the date of application.

Additionally, students who have completed the admission process and received a decision, but have not yet started taking academic courses, will have their applications cancelled one year after the date of acceptance. Students who are still interested in an academic program thereafter will be required to reapply to the program.

It should be noted that individual graduate programs retain the right to impose more rigorous conditions on students who have been admitted. Such conditions, if imposed, will be detailed in the letter of admission sent to the student.

International Students

Wilkes University's growing global perspective and commitment to education in an evolving and multicultural world is illustrated by the increasing number of students from abroad who enter Wilkes' programs. On campus the International Graduate Admissions office is located in the lower level of Breiseth Hall or by phone at 1-800-WILKESU Extension 4235.

All Graduate international students are welcome to apply with the following materials:

- A completed online application (www.wilkes.edu/applyonline)
- An official university transcript evaluated by course by via World Education Services (WES) for all undergraduate and graduate work completed outside of the U.S.
- Official results of the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) if the language of instruction for the applicant's undergraduate degree was not English
- Statement of financial verification (bank or government statement) indicating that the application or the applicant's sponsor has on account a sum of money sufficient to pay tuition, room, board, and expenses for one academic year
- A copy of the picture page of applicant's passport

Applicants are also required to submit necessary materials to satisfy individual program admission requirements, which can be found in their respective sections in the bulletin.

Electronic copies of application materials are not permitted. Applicants are required to submit all application materials to:

Student Services (Graduate)
Wilkes University
84 W South Street
Wilkes-Barre, PA 18766

International graduate students with prior undergraduate and graduate degrees from non-US schools are required to send official transcripts to World Education Services (www.wes.org) when applying for any graduate program at Wilkes University. Wilkes University reserves the right to require two certified English translations of all academic records at the students' expense.

All international student applicants whose native language is not English and who come from non-English speaking countries must take the TOEFL (Test of English as a Foreign Language) or the IELTS (International English Language Testing System) exam and submit the results of this test with the application for admission or provide proof that their language of instruction was English.

Sufficient Scores for Graduate Work are as follows:

TOEFL Paper Based	550
TOEFL Computer Based	213
TOEFL Internet Based	79
IELTS	6

International Students are required to submit a statement of financial verification (bank or government statement) indicating that that the prospective student or student's sponsor have on account a sum of money sufficient to pay tuition, room, board, and expenses for one academic year. It is generally required that each international student also submits an affidavit of support and bank statement indicating that the applicant has access to funds at least equal to one full year of tuition plus living and personal expenses in the United States.

International students for whom an F-1 visa is required, must submit all required application documents, in addition to all documents described in the Application section above, at least three months prior to the beginning of the semester in which they intend to begin graduate studies. Students should complete their application file by June 15 for admission in the fall semester and by November 15 for admission in the spring semester. Students who apply for programs that allow you to start in summer should complete their application by March 1.

The U.S. Citizenship & Immigration Services (USCIS) Department requires a certificate of eligibility (Form I-20A) to be initiated by the University prior to applying for a student visa to study in this country. Any extension of stay or employment while in the United States must have the prior approval of the regional office of the Immigration and Naturalization Service.

The Form I-20A will only be issued after the application process is complete and the student has been admitted to the institution.

International students in the graduate program must maintain full-time student status (at least 9 credit hours per semester).

International students may be required to take certain courses for undergraduate credit that are not applicable to the master's degree. In some cases these courses will be specified in the admissions letter, but the Department Chairperson and the student's advisor may add requirements if a student is found to be deficient in the English language or in background knowledge in the field.

International Student Services Requirements

All international students must attend the mandatory two-day orientation with International Student Services of the Center for Global Education and Diversity before they begin their graduate studies. The ISS staff serve as advisors on non-academic matters to all international students. Services include assistance with visa and other immigration issues; assistance and advice on personal issues; orientation to life in the United States and the American educational system. ISS staff assist students in dealing with U.S. and foreign government agencies, other campus offices and departments, and the community. These services are available to all international students, non-immigrants and immigrants alike.

International Student Academic Status

An international student holding an F-1 visa (or equivalent) must maintain full-time status during the regular semesters (fall and spring) by registering for the minimum number of credits (currently nine) as defined by the Student and Exchange Visitor Information System (SEVIS) or for the number of credits remaining in order to complete his or her graduation requirements, whichever is less.

If such student is unable to satisfy the above condition, he or she must petition the Graduate Studies Committee for an exemption. The Committee will accept only reasons recognized and specified by the United States Immigration and Naturalization Service.

An international student fulfilling the Thesis option/requirement (currently six credits) will have two continuous semesters to complete his or her work and defend the thesis. A request for an extension must be recommended by the student's Thesis Committee and approved by the Graduate Studies Committee. The decision to either grant or deny the extension must state the reasons AND the time extension granted.

Introduction

An international student fulfilling the non-Thesis (Report/Project) option/requirement will have one semester to complete his or her report/project. A request for an extension must be recommended by the Program Director and approved by the Graduate Studies Committee. The decision to either grant or deny the extension must state the reasons AND the time extension granted.

To meet the definition of CPT, the employment must meet at least one of the following criteria:

1. The employment will yield crucial data which is absolutely necessary to complete the student's required thesis, i.e., it would not even be possible to complete the thesis without this employment.
2. The employment is absolutely necessary for the student to complete a project for which he or she will receive academic credit that directly counts towards the student's formal degree requirements. It will be impossible for the student to complete the project without this particular employment, and the project will earn credits that will fulfill a specific degree requirement in the student's program.

An international student who elects to do an internship, including Curricular Practical Training (CPT), must be placed in such internship and have such internship monitored by the Office of Cooperative Education. There must be a clearly defined curricular need for such internship placement.

Notice of Nondiscrimination

Wilkes University offers equal opportunities in all admission and employment policies, practices and programs. Wilkes is committed to providing a welcoming environment for all members of our community and to ensuring that all educational and employment decisions are based on individuals' abilities and qualifications. Consistent with this principle, and in compliance with Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990 and all other applicable laws, Wilkes University does not discriminate on the basis of race, color, religion, gender, gender identification and expression, sexual orientation, national or ethnic origin, age, disability, marital status, domestic partnership status or status as a veteran in any policies, practices or programs including, but not limited to: employment policies and practices; education and admission policies; scholarship/loan programs, athletics, and extracurricular activities.

Any questions or concerns should be addressed to the University's Title IX Coordinator:

Joseph Housenick
Human Resources Director
Wilkes University
84 West South Street
Wilkes-Barre, PA 18766
T (570)408-4631
joseph.housenick@wilkes.edu

OR

Deputy Coordinator:
Philip Ruthkosky, Ph.D
Associate Dean for Student Affairs
Wilkes University
84 West South Street
Wilkes-Barre, PA 18766
T (570)408-4108
philip.ruthkosky@wilkes.edu

In addition, students who are enrolled at the Mesa, Arizona site can contact:

Dr. Bonnie Culver
Interim Dean, Mesa Location
Mesa Center for Higher Education
245 West 2nd Street
Mesa, AZ 85201
Toll-free: 800-WILKESU ext. 6372 (MESA)

Professional Development for Teachers

Certified teachers wishing to take graduate courses for professional development are allowed to register as special non-degree students. They must complete the non-degree-seeking application, check status desired (special non-degree), pay the application fee, and submit a copy of their teaching certificate. While there is no limit on the number of graduate courses that teachers may take for professional development, it is understood that these courses may not fulfill requirements for a master's degree at Wilkes. Teachers should consult the Education section of this Bulletin for degree requirements as well as confer with the Director of Operations for Graduate Education in order to determine which courses are required for a specific M.S. in Education degree or Letter of Endorsement at Wilkes.

Special Non-Degree Students

Individuals who are interested in completing credits for transfer to another university or for personal enrichment need to submit a non-degree-seeking application and a copy of their undergraduate transcript. The non-degree-seeking application will be cancelled after the maximum number of six non-degree credits has been completed. Permission to complete coursework as a non-degree student is at the discretion of the individual department.

Graduation

It is the responsibility of the graduate student to sign up for a graduation audit no later than ninety days prior to the date of the Commencement Exercise at which the student expects to be graduated. This is done by registering for GRD-000-B (0 credits/\$165.00 graduation fee) during the beginning of the final term before graduation. Students should consult with their advisor if they have any questions regarding the process.

A completed file and acceptance into a graduate program are required for graduation. Transfer credits (approval forms and official transcripts) must be received before each semester's graduation clearance deadline. Students changing their status from non-degree seeking to degree-seeking must do so at least a year prior to graduation.

Graduating students may participate in one of the two commencement exercises held over the calendar year. These exercises occur in May and September of each year. Diplomas given during September ceremonies will always be dated as the fourth Saturday in August. There is no commencement ceremony in January, although graduations are still processed for the fall term.

Student Services Center

Many of the functions or activities described in the following pages are performed by the Student Services Center (SSC) team located at 141 South Main Street and for students attending the Mesa location, services are provided by the Wilkes Service Desk team located in the Mesa Center for Higher Education. SSC was created to provide an integrated and centralized nexus point for the majority of student needs. While the SSC is staffed during regular university business hours, most of the services provided are also available online at www.wilkes.edu. The primary goals for SSC include exceptional service to students, the effective use of technology and the pursuit of ever-improving services to all constituencies. Those in need of assistance may reach the SSC staff at (570) 408-2000 or onestop@wilkes.edu. Mesa location students can reach SSC at onestopAZ@wilkes.edu or at 800-WILKESU ext. 6372 (MESA). Some of the functions provided at SSC include:

- All financial aid functions
- All student account functions
- Most registration functions
- All cashier functions
- Meal plans (main campus only)
- Work-study matters

BUSINESS ADMINISTRATION

Associate Dean: Justin Matus, Ph.D.

Academic Advisor: Karen Alessi

Coordinator ABE: Allison Pinckley

BUSINESS ADMINISTRATION (MBA)

The Master of Business Administration program is part of the Jay S. Sidhu School of Business and Leadership, which combines a strong core business education with the development of skills for authentic leadership and ethical business practices. The Sidhu School's Master of Business Administration degree program expands business knowledge, management skills, and leadership capabilities of early and mid-career professionals from many disciplines, functions, and jobs in order to enhance their success at work, adding value both for the student and for the organizations with which the student is associated. The MBA Program serves individuals in professional, functional, administrative, and managerial roles who seek to improve their level of performance and their prospects for advancement, by providing a strong foundation in general management through the development and integration of knowledge and skills in functional areas essential to effective management and leadership of a business. Students are encouraged to focus the program of study in a way that is relevant and adds value to the roles they carry out at work and roles into which they may be promoted, and to initiate a systematic process of development as effective leaders as they continue to progress through their careers. In addition, the MBA Program seeks to contribute to the success of the businesses and organizations in which MBA candidates work, by enhancing key skills essential for organizational performance and adding to the quality of the pool of managers and leaders in these organizations.

The Accreditation Council for Business Schools and Programs (ACBSP) has accredited the undergraduate and the graduate Business Administration programs as well as the undergraduate programs in Accounting, Business Administration Entrepreneurship, Finance Management and marketing. ACBSP accreditation affirms the excellence of these programs to graduate and professional schools as well as potential employers, and thereby serves as a major competitive advantage for students completing business programs at Wilkes. The Jay S. Sidhu School of Business and Leadership is also a member of the Association to Advance Collegiate Schools of Business (AACSB).

MBA students are encouraged to participate in the broader life of the Wilkes University community. An active MBA Student Association provides programming of interest to its members, and gives them a voice with the administration of the Sidhu School and the University at large. The Sidhu School also sponsors an active chapter of Delta Mu Delta, an honorary business society that recognizes the highest levels of academic achievement by undergraduate and graduate students. Annual awards recognize outstanding scholarship and leadership among MBA candidates.

Vision

Sidhu School graduates will have the knowledge, skills, and experiences to be effective team members, managers, and authentic leaders in organizations that face dynamic challenges in a rapidly changing global environment.

Mission

The faculty of the Sidhu School commit to the development of our regional, national, and international students and alumni through: the practice of impactful teaching and mentoring; the understanding of emotional intelligence and entrepreneurial spirit; the growth of leadership potential; and their continued development to meet these challenging demands. Central to our programs and initiatives is the commitment to continuous program improvement and the development of programs and opportunities that add value to Wilkes University and its mission.

Purpose

The curriculum leading to the Master of Business Administration degree at Wilkes emphasizes a general, broad-based approach to graduate business education. Students acquire the quantitative and judgmental skills necessary for a manager to succeed. The core objectives of the MBA include:

- To develop professional managers, with emphasis on the organization, operation, and control of an enterprise;
- To enable individuals to create and evaluate alternative courses of action as a procedure for making decisions;
- To give business persons an understanding of international business policies and practices;
- To prepare these business persons for the challenge of understanding and appreciating the cultural and subcultural similarities and differences in various business environments;
- To prepare students for further training through post-graduate and/or doctoral studies in business and related disciplines.

The program provides management education at the master's level for students with varied undergraduate backgrounds: business and economics, engineering and science, and others.

Master of Business Administration courses are offered on weekday evenings and in a year-round weekend format. Weekend courses are offered on Saturday and Sunday every third or fourth weekend, five times per trimester. Courses are offered on the main campus in Wilkes-Barre, the Bartonsville location in the Poconos, and in Mesa, Arizona.

Admission Requirements

Applications are invited from individuals who have earned undergraduate or graduate degrees in any discipline or field of study. To be considered for admission, the applicant must meet the following minimum requirements:

1. Submit to the Graduate Admissions Office a completed graduate application for admission with payment of appropriate application fee;
2. Demonstrate satisfactory performance as an undergraduate by providing to the Graduate Admissions Office a complete set of official undergraduate transcripts as evidence of an earned baccalaureate degree from an accredited institution of higher education.

To be accepted on a regular basis, applicants must have earned a cumulative GPA of at least 3.0 in their undergraduate degree program. An applicant who has earned a cumulative GPA of less than 3.0 in his or her undergraduate degree program will be required to interview with the MBA program director or his designate.

Provisional acceptance

A prospective student may be provisionally accepted if they have applied to the program and meet admissions requirements, but the university is waiting on additional application materials, like official college transcripts.

Conditional acceptance

A prospective student with a GPA of less than 3.0 may be accepted into the program on a conditional basis. The conditionally accepted student must maintain no less than a 3.0 in the first two courses (6 graduate credits) of the MBA program. Failure to maintain the minimum 3.0 may result in dismissal of the conditionally accepted student.

Distinct Objectives Of The MBA Program

- **Business Ethics:** To provide students with a set of principles that govern actions of moral conduct in order that they might operate ethically in today's business environment.
- **Communication:** To enhance the skills necessary to effectively transfer information applicable to any discipline through presentations, team projects, and interactions with peers.
- **Decision-Making:** To teach students the mental processes of problem identification and resolution techniques needed to perform critical thinking, enabling them to make important decisions.
- **Diversity:** To teach students how to interact with people of various cultures and backgrounds by immersing students in a diverse climate in order to better prepare them for today's global business environment.
- **Leadership:** To develop in students the potential to influence others in order to accomplish organizational goals by exposing them to theories of organizational leadership and development, and fostering that growth with projects throughout the course of their studies.
- **Professionalism:** To showcase professionalism by placing students in a variety of interactive settings that require adherence to rules of conduct and proper practices.
- **Social Responsibility:** To instill in students the concept of acting responsibly in order to benefit and serve society.
- **Team Performance:** To provide meaningful opportunities to cultivate teamwork throughout the course of studies through various projects, and measuring their success.

Degree Requirements

The total number of 500 level course credits required for the MBA is 39. The MBA degree is earned by completion of four distinct tiers – the Foundation, the Core, the Electives, and the Capstone. These are summarized below.

Tier I (6 credits): The Foundation – This tier is comprised of two Foundation courses, which are required as either prerequisites or co-requisites to most Core and Elective courses in the MBA Program:

- MBA 501 - Foundations of Business, which provides students with an introduction into all functional areas of business.
- MBA 505 - Foundations of Management, which introduces students to the eight distinct objectives (business ethics, communication, decision-making, diversity, leadership, professionalism, social responsibility, and team performance).

Tier II (21 credits): The Core - This tier is comprised of the following seven required courses, which together provide students with graduate-level appreciation and content knowledge for all of the functional areas of business administration:

- MBA 512 - Business Research Design and Methods
- MBA 520 - Marketing Management
- MBA 532 - Managerial Economics
- MBA 540 - Financial Management
- MBA 552 – Organizational Behavior and Leadership
- MBA 560 - Financial and Managerial Accounting
- MBA 580 – Business and Public Policy
- (MBA Core Courses may not be taken on an independent basis.)

Tier III (6 credits): The Electives - Each MBA student is required to successfully complete two courses from the following:

- MBA 516 – Topics in Operations Management
- MBA 526 – Topics in Marketing

- MBA 536 – Topics in International Business
- MBA 537 – Global Business Experience
- MBA 546 – Topics in Finance
- MBA 555 – Human Resources Law and Compensation
- MBA 566 – Topics in Accounting
- MBA 577 – Topics in Health Care Management
- MBA 585 – Topics in Entrepreneurship
- MBA 598 – Topics

Tier IV (6 credits): The Capstone - Each MBA student must successfully complete the following two-course capstone requirement:

- MBA 591 - Strategic Management and Policy, a general capstone course covering all functional areas and all distinct objectives (MBA 501 and MBA 505 prerequisites).
- MBA 592 - Advanced Projects in Business, a specific capstone course in which the student is required to perform independent work, providing students with an opportunity to concentrate their studies in a business-related discipline relating to their interests (MBA 501 and MBA 505 prerequisites).

Summer 2014

- May 10, 11
- May 31, June 1
- June 21, 22
- July 12, 13
- August 2, 3
- August 9, 10

Fall 2014

- August 23, 24
- September 13, 14
- October 4, 5
- October 25, 26
- November 15, 16
- December 6, 7

Spring 2015

- January 10, 11
- January 31, February 1
- February 21, 22
- March 14, 15
- April 11, 12
- April 25, 2

CREATIVE WRITING

Bonnie Culver, Ph. D., Program Co-Founder, Program Director
J. Michael Lennon, Ph. D., Program Co-Founder
Dawn Leas, Associate Director

Master of Arts in Creative Writing (low residency)
Master of Fine Arts in Creative Writing (low residency)

Accreditation

In October, 2004, the Pennsylvania Department of Education and the Middle States Association of Schools and Universities approved the Wilkes proposal for the M.A. program. The University graduated its first class in June 2006. In September 2010, the Pennsylvania Department of Education approved the addition of the Master of Fine Arts to the graduate creative writing degree offerings at Wilkes University.

Admission

Students will be accepted into the Master of Arts in Creative Writing based almost entirely upon the required writing samples - the application essay and creative writing sample. Students applying to this program should hold a bachelor's degree from an accredited college or university. However, since the M.A. is a degree in creative writing and not an English degree, students without a bachelor's may apply. Such applicants must provide a very strong writing sample and writing history. No GREs are required. Applicants must submit the following for consideration:

- Completed Application.
- \$45 non-refundable application fee.
- Official transcript of all college work, undergraduate and graduate.
- Two letters of recommendation, (optional, required only for students applying for graduate assistantships).
- Creative writing sample... A 15-25 page writing sample from any genre or genres of published/unpublished work that best demonstrates your creative ability.
- Essay response...A 5-10 page response to the following three questions:
 - a. Where are you in time and how did you get there?
 - b. What are you going to do in the program?
 - c. What will you do with your program accomplishments following graduation?
- Resume, including creative citations.

Students may enter the program in either the January or June residency. Project terms begin following each residency and continue until the next residency (approximately 6 months).

Students interested in the Master of Fine Arts must first complete the Master of Arts in Creative Writing. Students in the existing M.A. may apply for admission into the M.F.A. no earlier than the last term of the M.A.

Transfer Credits

The Master of Arts in Creative Writing addresses the life, craft, and business aspects of becoming and remaining a professional creative writer. Because much of the curriculum design is tailored to the individual student and his/her thesis project and because the program offers no electives, the M.A. in most tracks does not accept transfer credits from another institution. However the publishing M.A. and documentary film tracks will transfer up to nine credit hours from applicants who hold a Master of Fine Arts in creative writing, film, or theatre from another institution. Wilkes M.A. alums can take an additional 18 credit hours to earn either a second degree in any track.

Degree Requirements

(30 credit hour minimum)

The Master of Arts in Creative Writing is a 30-credit, low-residency program in seven tracks, each of which will appear on the M.A. diploma: fiction / poetry / screenwriting / playwriting / creative nonfiction/publishing / documentary film. (48 credit hour minimum)

The Master of Fine Arts in Creative Writing (48 credit hour minimum) (low residency M.F.A.)

Students complete the required 30 credit hour minimum and the Master of Arts in Creative Writing plus 18 additional credit hours to earn the Master of Fine Arts degree.

Certificate Option (15 credit hours)

A certificate in one genre is also available. Students complete the first 15 credits of the Masters program. This option is suited for:

- students who do not wish to pursue the master of arts, but wish to explore writing;
- students who do not possess a bachelor's degree, but demonstrate talent in writing;
- students who are conditionally admitted to the program.

Creative Writing

After completing nine credits hours, students in the certificate program may apply for enrollment in the Masters program. The credits in the certificate program automatically transfer into the Masters program.

All graduate creative writing programs include two components, Residencies and Project Semesters — which are outlined below. Specific credit requirements for the degree and certificate follow this discussion.

1. **Residencies** are eight-day-long on-campus courses that are usually-team taught and include required and faculty lectures, readings, performances, class discussions, and panel discussions as well as student readings. This is a time to plan project work and meet with instructors and the program director. The following courses are residencies: CW 501R, CW 510R, CW 516R, and the capstone, CW 525R. Minimum required: 4, including capstone. The M.F.A. requires one additional residency - CW 616R.
2. **Project Semesters** are writing and reading project work times, beginning with foundation courses in two genre areas and ending with the final project master thesis semester. The following courses are project courses: CW 502, CW 503, CW 504, CW 505, CW 506, CW 512, CW 514, and CW 520. Minimum foundations courses: 2; Minimum project terms: 3; Courses delivered online. The Master of Fine Arts requires the following additional online courses - CW 612, CW 614, and CW 620.

MA IN CREATIVE WRITING

Thesis Requirements

To satisfy the Masters of Arts in Creative Writing thesis requirement:

Students, graduating with a Master of Arts in Creative Writing, will produce and present a full-length text and support materials that demonstrate the mastery of requisite standards, processes, and procedures for bringing that project into its appropriate public venue.

The Writer's Life

Acknowledging and understanding the spiritual, psychological, physical, discipline, habits, and support mechanisms required for continued sustenance for the writing life.

At the completion of this program, students will be able to:

1. Articulate the strengths and weaknesses of and discriminate between the archetypal models of writerly lives as they build a writing life plan of their own design.
2. Articulate the strengths and address the weaknesses of the work of their peers, as well as their own work and their writing process

Craft and Technique

Demonstrating the mastery of one's major area of study through the practice of writing in various forms including the demonstrable and the proven ability to critique one's own work and that of others honestly and vigorously.

Most creative writing programs spend most or all of their assigned time in workshops and in one-on-one critiques that emphasize this area of study. The Wilkes program also spends a great deal of time on studying how a text "works," whether it be a classic model, students' work, or a peer's draft. This study asks students to dissect texts and break them down into their basic elements. To become a better writer, students must learn how to objectively analyze and critique a wide range of texts in their areas of study.

At the completion of this program, students will be able to:

1. Describe the breadth and depth of knowledge of the historical context and tradition of the range of forms, conventions, and styles within their selected major and minor areas.
2. Demonstrate competency in the technology of their major genre area.

Art Delivery Method

Studying the multiple and appropriate pathways in which one's creative work becomes public, including knowing the research methods, business practices, and genre-specific conventions that writers need to obtain notice of and appreciation for their work.

This program strand addresses the business, economic, and genre-specific opportunities for your work. Faculty panels from each genre will introduce this idea to students in the first residency. As students move through the program, the faculty and their mentors will work with students to understand both the business practices and the appropriate pathway for their work.

At the completion of this program, students will be able to:

1. Understand the legal and ethical standards and the practical issues of their profession, and demonstrate that knowledge through the residencies and portfolio work of the program.
2. Speak and write to people in professional venues of their area in a confident manner.

Capstone Requirements

The Master of Arts in Creative Writing Capstone is where students have a chance to demonstrate their full mastery of their major area that meet all of the student learning outcomes listed above. All Master of Arts creative projects, no matter which track, will be given an evaluation by an outside reader who is an industry expert, someone who is an editor, agent, publisher, producer, or director. A unique quality of the Wilkes M.A. is how that work comes together in the final capstone. All capstones, no matter which area the graduate selects, must have both a written and spoken component and must also meet specified graduation criteria. The order for the final thesis and some samples are included in other lessons in this section of CW 520. ALL THESES MUST BE PRESENTED IN STANDARD INDUSTRY-SPECIFIC FORMATS PER GENRE.

The following are the area specific requirements for the Master of Arts in Creative Writing capstone:

Poetry

During the final residency (CW 525R) poets will present a formal reading from their finished poetry chapbook or poetry collection. The formal reading will be limited to ten minutes followed by a Q & A from faculty, mentors, and other students. Some or all work must be recited.)

THESIS/Support materials will include:

- THESIS (24-50 pages, chapbook; 50+ pages., collection)
- A query letter (1-2 pages)
- Writing Self-Analysis Essay, including Writing Life Plan
- Artist's statement (1 page.)
- Final annotated bibliography of all readings leading to the thesis project, from CW 512-520.

Fiction

During the final residency (CW 525), fiction writers will present a formal reading from their manuscript, which will be either a novel or short story collection. The formal reading will be limited to ten minutes, followed by a Q & A from faculty, mentors, and other students.

THESIS/Support materials will include:

- THESIS- (Novella, novel, or short story collection- 120 page minimum)
- A query letter (1-2 pages)
- Writing Self-Analysis Essay, including Writing Life Plan
- Jacket blurb (bio) (1 page.)
- Final annotated bibliography of all readings leading to the thesis project, from CW 512-520.

Plays

Playwrights will work through the pre-residency with an assigned director to cast and to prepare the play for a formal staged reading that will be held during the CW 525 capstone or off-campus at a designated theatre. Experienced actors, appropriate to the work, will be utilized. Playwrights will be prepared to answer questions about their work and processes, following the staged reading.

THESIS/Support materials will include:

- THESIS-(Full-length play, collected one-acts, or performance piece 80+ pages)
- A query letter (1-2 pages.)
- Playwright's bio (1 page.)
- Writing Self-Analysis Essay, including Writing Life Plan

MA in Creative Writing

- Play synopsis (1-2 pages.)
- Final annotated bibliography of all readings leading to the thesis project, from CW 512-520.

Screenplays

Screenwriters will work with their writer mentors in the pre-residency to prepare their script for a table reading during their final residency (CW 525R). Readers will include actors, cohort members, and other available readers. Screenwriters must be prepared to present a "pitch" to a film producer, agent, or director before the reading and to answer process questions, following the table reading.

THESIS/Support materials will include:

- THESIS-(Full-length screenplay, collected feature shorts, 80+ pages.)
- The "pitch"
- A query letter (1-2 pages.)
- Writing Self-Analysis Essay, including Writing Life Plan
- Screenplay treatment (2-4 pages.)
- Final annotated bibliography of all readings leading to the thesis project, from CW 512-520.

Creative Nonfiction

During the final residency (CW 525R), fiction writers will present a formal reading from their completed full-length manuscript, which will be either a novel or short story collection. The formal reading will be limited to ten minutes, followed a Q & A from faculty, mentors, and other students.

THESIS/Support materials will include:

- THESIS-(Full-length manuscript or collection of short works)
- A query letter (1-2 pages.)
- Writing Self-Analysis Essay, including Writing Life Plan
- Back flap copy (bio) (1 page.)
- Final annotated bibliography of all readings leading to the thesis project, from CW 512-520.

Publishing

During the final residency (CW 525R), students in the publishing track will present their new e-zine, small press, journal as if they are actually launching this new company. These students will make a formal presentation to a panel of publishers, editors, and agents. Additionally, they will create materials that will be included in a M.A. book fair.

THESIS/Support materials will include:

- The first novel, journal, e-copy (minimum) to be launched by the student's new company
- The portfolio of work leading to the student's decisions:
- Business plan, vision/mission statement, etc.
- Marketing materials for launch
- Self-analysis essay, including the Writing Life Plan
- Final annotated bibliography of all readings, interviews leading to the thesis project, from CW 512-520.

Documentary Film

During the final residency (CW 525R), students in the documentary film track will present their new documentary film as if they are actually launching this film at a festival. Additionally, they will create materials that will be included in a M.A. film festival.

* Short documentary film (30 minutes maximum) DVD copy

- The portfolio of work leading to the student's decisions:
- Interviews, logs, transcriptions
- Marketing materials for launch
- Self-analysis essay, including the Writing Life Plan
- Final annotated bibliography of all readings, interviews leading to the thesis project, from CW 512-520

Degree Requirements | 30 credits (minimum)

First Residency

CW 501R	The Professional Writer / Residency Course	Total credits: 3
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First Project Semester: Students select any two of the following foundation courses. Each of these courses will be delivered online by faculty from each genre in the Project semesters.

Students who expect to enter the publishing track may select from any of the five foundations courses; students entering the documentary film track should register for CW 504—screenwriting and one other area of study.

CW 502	Writing Fiction	3
CW 503	Writing Poetry	3
CW 504	Writing Screenplays	3
CW 505	Writing Plays	3
CW 506	Writing Creative Nonfiction	3
		Total Credits: 6

Second Residency

CW 510R	Planning the Writing Life	Total credits: 3
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In this residency students will select which track they are pursuing and be assigned a writer or editor or filmmaker mentor

Second Project Semester: Students will be registered in the courses listed below by area of study in both CW 512, 514:

CW 512F	Genre and Context in Fiction	3
CW 512P	Genre and Context in Poetry	3
CW 512S	Genre and Context in Screenwriting	3
CW 512L	Genre and Context in Playwriting	3
CW 512N	Genre and Context in Nonfiction	3
CW 512U	Genre and Context in Publishing	3
CW 512D	Genre and Context in Making Documentary Films	3
CW 514F	Genre and Context in Fiction	3
CW 514P	Genre and Context in Poetry	3
CW 514S	Genre and Context in Screenwriting	3
CW 514L	Genre and Context in Playwriting	3
CW 514N	Genre and Context in Nonfiction	3
CW 514U	Genre and Context in Publishing	3
CW 514D	Genre and Context in Making Documentary Films	3
		Total Credits: 6

Third Residency

CW 516R	Final Project/Thesis Plan Residency Course	Total Credits: 3
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Third Project Semester: FINAL WRITING TERM—STUDENTS SELECT COURSE BY AREA OF STUDY (6 credit courses):

CW 520 F	Final Project / Fiction Thesis	6
CW 520 P	Final Project / Poetry Thesis	6
CW 520 S	Final Project / Screenwriting Thesis	6
CW 520 L	Final Project / Playwriting Thesis	6
CW 520 N	Final Project / Nonfiction Thesis	6
CW 520 U	Final Project / Publishing Thesis	6
CW 520 D	Final Project / Documentary Film Thesis	6
CW 520 D	Final Project / Documentary Film Thesis	6
		Total Credits: 6

Fourth Residency

Master of Arts in Creative Writing

CW 525R	Masters Capstone	Total Credits: 3
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All students present capstone projects by area of study

	Total Credits for Master of Arts	30
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Optional CW 530. Continuous registration (one - six credits) optional course used to complete capstone coursework.

MFA IN CREATIVE WRITING

MFA in Creative Writing Goals

To satisfy the Masters of Fine Arts in Creative Writing degree requirements:

Students, graduating with a Master of Fine Arts in Creative Writing, will revise their Master of Arts thesis to produce a publishable manuscript or begin a new project, building upon the strengths of the M.A. thesis. Additionally, they will produce and present a literary analysis paper, complete a term-long internship in teaching or publishing, and submit a final portfolio that chronicles their work in the entire program, all of which demonstrate their understanding and utilization of their literary tradition and the best practices of teaching pedagogy or the publishing industry.

The Analysis Paper

Acknowledging and understanding the diverse forms, styles, and ongoing tradition of the student's chosen literary genre.

At the completion of this program, students will be able to:

1. Describe the breadth and depth of knowledge of the historical context and tradition of the range of forms, conventions, and styles within their selected major area.
2. Demonstrate an understanding of the literary tradition and where their own work lives within that literary spectrum.

The Teaching/Publishing Internship

Utilizing the multiple and appropriate teaching methodologies in beginning, workshoping, critiquing, and sustaining the creative work of others, including knowing the diverse strategies, best practices, and genre-specific exercises that lead to the creation of student work.

At the completion of this program, students will be able to:

1. Demonstrate an understanding of how best to teach or work in a variety of artists-in-residency or publishing venues.
2. Demonstrate competency in the best practices of teaching creative writing or in the business of supporting writers and their work in the publishing industry.

The Final MFA Portfolio

Demonstrating the understanding of the best practices of effective teaching and sustaining creative work, in various ways, including the demonstrable and the proven ability to critique and facilitate the creative work of others honestly and vigorously while continuing to produce one's own creative work.

FINAL M.F.A. portfolio will include:

1. revised M.A. thesis (or new project);
2. 25-65 page craft chapter or essay; (part of CW 612)
3. copies of materials developed, written in internship;
4. final annotated bibliography of readings from entire program;
5. final summary of program work via a self-analysis paper.

At the completion of this program, students will be able to:

1. Understand the legal and ethical standards and the practical issues of the teaching or publishing profession, and demonstrate that knowledge in the residencies and portfolio work of the program;
2. Demonstrate competency in the best practices of creative writing pedagogy or the business practices of the publishing industry;

3. Demonstrate advanced writing competency in their own creative work;
4. Demonstrate an advanced knowledge of contemporary literature in their area of study in an oral and written presentation of their analysis of assigned texts.

Residency #1

Students will begin the M.F.A. coursework during the Master of Arts Capstone residency (CW 525R). Students begin that work by attending additional modules taught by literature PhD faculty and meetings with all faculty during that residency. Students will receive a formal reading list from the faculty and develop their analysis plan in those formal meetings and discussions with faculty.

Project Term #1 -CW 612. Literary Analysis

Six Credits

Reading, analyzing, and preparing an extensive graduate paper that demonstrates the students' understanding of the history, tradition, various forms, and diverse styles of contemporary literature in one area of study-fiction, creative nonfiction, film, drama, or poetry. Reading list will be provided by the faculty and students' essays' approach must be approved by faculty mentor and the Program Director.

Final paper presentation is made at the subsequent residency. Hard copy of paper is 25 to 65 pages.

CW 614. Revision Term

Three credits

Students will have the opportunity to continue to work with a faculty mentor to revise their creative thesis and prepare it for publication/production OR begin a new project, built upon the strengths of the Master of Arts thesis.

Residency #2 -- CW 616R. Writing in Education/Publishing

Three Credits/Residency Course

Students will be required to make a formal paper presentation during this residency to complete CW 612. Students will complete work generated by team-taught modules to prepare them for either a teaching or publishing internship. They will meet with peers, mentoring faculty and create and deliver mini-lesson plans for proposed courses or a study plan in publishing. Such work must be drawn upon the best practices of the pedagogy of teaching creative writing or working in publishing in a variety of settings. Students will continue to sharpen their own oral and writing skills as they build an acceptable syllabi, course materials/internship goals for an internship and sample lessons/work plan by week's end. By week's end, students will have an internship experience and internship supervisor assigned to them.

Project Term #2 -- CW 620. Writing in Education/Publishing Internships

Six Credits

Students will be required to teach creative writing in one or several various educational venues from a series of artists-in-the schools residencies to for-credit adjunct/full-time course work OR complete an internship with a magazine, small press, or literary agency. Students will document their work through student portfolios and will be supervised by a faculty mentor. In whatever experience students select, they must demonstrate student contact hours of no less than 40 hours per term for teaching and 20 hours

per week for publishing internships. Students will present a final analysis of their teaching or publishing experience in writing and orally at term's end.

CW 630. Continuous Registration

One to Six Credits

This course allows students to continually register where needed for further revision in preparation of their final project. Students must continually register until revisions are complete or they complete the required capstone.

EARTH AND ENVIRONMENTAL SCIENCES

Chairperson: Brian E. Whitman, Ph.D.

Earth and Environmental Sciences graduate courses may be taken by special students or may be applied toward graduate degrees offered by other departments. Students planning to apply these credits toward degree programs should secure the approval of their academic advisor prior to inclusion in their course of study.

SUSTAINABILITY MANAGEMENT, GRADUATE CERTIFICATE

Graduate Certificate In Sustainability Management

Program Director: Marleen Troy, Ph.D.

The online certificate in Sustainability Management is a 12-credit program that trains students in environmental sustainability standards and management practices. This program will equip students with the knowledge to take on and implement sustainability-related projects in the workplace by providing:

- a comprehensive overview of sustainability standards,
- effective assessment practices,
- the tools to design a sustainability plan and
- implement solutions in the workplace.

The Sustainability Management program is appropriate for students of most educational and professional backgrounds, including those working in:

- education,
- health care,
- commercial real estate,
- manufacturing,
- non-profits,
- government.

This unique learning opportunity is offered in a condensed subject-focused format, allowing students to complete the program in as little as 16 months, all while taking one class at a time. Credit is available at the graduate and undergraduate level, as well as for professional continuing education. To earn the certificate students must complete the following course series:

- SUS 501 - Introduction To Sustainability
- SUS 502 - Metrics Of Sustainability
- SUS 503 - Sustainability Implementation
- SUS 504 - Industry-Focused Sustainability

Degree Requirements

All candidates for the online certificate in Sustainability Management must complete a program of twelve (12) credits.

EDUCATION

Dr. Rhonda Waskiewicz, Interim Dean, School of Education
Dr. Mary Kropiewnicki, Chair/ Associate Professor of Education
Dr. Jin "Joy" Mao, Associate Professor of Education
Dr. Dana Burnside, Assistant Professor of Education
Dr. Kurt Eisele, Assistant Professor of Education
Dr. Karim Medico Letwinsky, Assistant Professor of Education

Academic Integrity Policy

(Portions of this policy adapted from Seton Hall University's Plagiarism/Academic Integrity Policy:
<http://www.shu.edu/academics/education/phd-counseling-psychology/plagiarism-academic-integrity-policy.cfm>)

Wilkes University holds the following principles to be essential to responsible, professional behavior for employees and students: honesty, trustworthiness, integrity and dignity, as well as respect and fairness in dealing with other people, a sense of responsibility towards others and loyalty toward the ethical principles promoted by the University through our mission, vision and values. It is important that these principles and the tradition of ethical behavior be consistently demonstrated and carefully maintained.

The School of Education at Wilkes University is highly invested in demonstrating the critical importance of these principles for the students in our programs. All faculty members are charged with upholding the high professional standards that will become the foundation for the professional development of our students. Any suspicion of academic dishonesty that is detected by faculty or staff is to be addressed as outlined in the procedure below. A quality education requires that students are as aware of their ethical responsibilities as they are their program content.

Students must assume personal responsibility to ensure that their work is original and that it is properly referenced. The American Psychological Association's Manual of Style is used as the guide for proper citation of work that is referenced by students in their research and writing.

Instructors and staff will utilize anti-plagiarism tools as a means to enforce compliance with this policy.

Students are required to acknowledge receipt of this policy as a part of their admissions process. Reference to the policy is made in the syllabus of each class and it is available for review on the University website.

This policy is intended to provide clear expectations for the conduct of students and to provide a clear process for the handling of any infractions. The examples are provided to create a context for the determination of the level of infraction and certainly are not all inclusive.

Academic Integrity Violations

Cheating – The use of information or materials that are written, verbal, electronic or viewed from another student's work without the prior knowledge or authorization of the instructor. Cheating can also be alleged if there are conversations (verbal or electronic) during the administration of a test or if an effort is made to solicit exam information from another student.

Fabrication – Misrepresentation of research data or creation of research data that does not exist. Fabrication can also take the form of falsifying information such as the submission time or date of assignments, reasons for tardiness of assignments or reporting false information regarding another student.

Unauthorized access to or obstruction of intellectual property – Theft of course materials from an instructor or theft of another student's work would constitute unauthorized access. Intentionally denying access to resource materials or referenced materials to interfere with the academic progress of others would constitute obstruction of intellectual property.

Facilitation of academic dishonesty – Allowing another student to use one's work without the authorization of the instructor. Providing information regarding exams or assisting a student in obtaining unauthorized materials is also considered fabrication.

Plagiarism – The submission of work without the proper use of citation or quotation marks. The use of the words or ideas from others presented as one's own for a portion or all of one's work. This includes, but is not limited to, material from books, journals, the internet or other students or individuals. Paraphrasing that is too close to the original work and incomplete citations are also considered plagiarism.

This list is meant to be a framework to disseminate the expectation for academic integrity. The list and the examples are not exhaustive. Violations of this policy are classified by the severity of the infraction. Below are the recommended sanctions assigned to each level. The sanctions listed are used as a guide for enforcement of the policy. Those charged with levying the sanctions are not restricted to the sanctions listed.

Low Level - These offenses happen because of inexperience or lack of knowledge of academic standards by the persons committing the offense. These infractions involve a small part of the total course work, or occur on a minor assignment. The following are some examples:

- Working with another student on an assignment without instructor authorization.
- Failure to footnote or give proper acknowledgment in an extremely limited section of an assignment.

Recommended sanctions for low level offenses are listed below; one or more of these may be chosen in each case:

- Required attendance in a non-credit workshop or seminar on ethics or related subjects.
- An assigned paper or research project on a relevant topic.
- A make-up assignment at the same level of difficulty.
- A make-up assignment at a more difficult level than the original assignment.
- No credit given for the original assignment.

Records of students who commit low level offenses will be maintained in the Department Chairperson's/Director's Office until graduation. One year after the student graduates, all documentation, paper/electronic, of low level offenses will be destroyed.

Medium Level – These violations are those characterized by dishonesty of a more serious nature or which affect a more significant aspect or portion of the course work.

The following are some examples:

- Quoting directly or paraphrasing, to a moderate extent, without acknowledging the source.
- Submitting the same work or major portions thereof to satisfy the requirements of more than one course without permission from the instructor.
- Using data or interpretative material for a laboratory report without acknowledging the sources or the collaborators. All contributors to preparation of data and/or to writing the report must be acknowledged.
- Receiving assistance from others, such as research, statistical, computer programming, or field data collection help that constitutes an essential element in the undertaking, without acknowledging such assistance in a paper, examination, or project.

The recommended sanction for medium level offenses is one year of academic probation. The student will receive zero points on the work and will fail the course.

The student will be allowed to reregister for the course after a designated period of time.

Notation of academic probation will be placed on the student's transcript and will remain for the period in which the sanction is in force. A letter from the Dean of the School of Education will be sent to the student and a copy will remain in the student's educational record. Records of students who commit medium level offenses will be maintained in the Department Chairperson's/Director's Office until graduation. One year after the student graduates, all documentation, paper/electronic, of medium level offenses will be destroyed.

High Level Offense – High level offenses include dishonesty that affects a major or essential portion of work done to meet course requirements and/or involves premeditation, or is preceded by one or more violations at low and medium levels. Examples include:

- Copying on examinations.
- Acting to facilitate copying during an exam.
- Using prohibited materials, e.g., books, notes, or calculators during an examination without permission from the instructor.
- Collaborating before an exam to develop methods of exchanging information and implementation thereof.
- Altering examinations for the purposes of regrading.
- Acquiring or distributing an examination from unauthorized sources prior to the examination.
- Plagiarizing major portions of a written assignment.
- Presenting the work of another as one's own.
- Using a purchased term paper or other materials.
- Removing posted or reserved material, or preventing other students from having access to it.
- Fabricating data or inventing or deliberately altering material (for example, citing sources that do not exist).
- Using unethical or improper means of acquiring data.

The normal sanction to be sought for all high level offenses or for repeated violations of low or medium offenses is a minimum of one year Academic Ineligibility from the University and a failing grade for the course. The notation of Academic Ineligibility will be placed on the student's transcript and will remain for the designated period, at minimum. The student may request reinstatement and may retake the course after the designated time period. The designation of Academic Ineligibility will remain on the student's transcript until there is action by the student to have it successfully removed. In certain instances, students may be placed on Permanent Academic Suspension.

Severe Level Offenses – These offenses represent the most serious breaches of intellectual honesty.

Examples of serious level offenses include:

- All academic integrity infractions committed after a previous medium or high level academic integrity violation.
- Infractions of academic integrity resembling criminal activity (such as forging a grade form, stealing an examination from a professor or from a university office; buying an examination; or falsifying a transcript). (Actions that may be construed as criminal activity will be handled by the appropriate legal authority as directed by the University's protocol.)
- Having a substitute take an examination or taking an examination for someone else.
- Fabrication of evidence, falsification of data, quoting directly or paraphrasing without acknowledging the source, and/or presenting the ideas of another as one's own within a master's thesis or doctoral dissertation, in scholarly articles submitted to refereed journals, or in other work represented as one's own as a graduate student.
- Sabotaging another student's work through actions designed to prevent the student from successfully completing an assignment.
- Willful violation of the code of conduct for Professional Educators issued by PDE (22 Pa. Code §§235.1 - 235.11)
- http://www.portal.state.pa.us/portal/http://www.portal.state.pa.us;80/portal/server.pt/gateway/PTARGS_0_123531_870687_0_0_18/code%20of%20conduct.pdf

Education

The normal sanction for all severe level offenses and a repeat infraction at high level offenses is immediate and Permanent Academic Suspension from the University. A notation of the permanent suspension will be placed on a student's transcript and will remain permanently.

Please note: For Academic Integrity policy violations in those programs requiring certification, a substantiated violation at the medium level or higher will result in "no" response on the PDE submission question requiring affirmation of "Good Moral Character" and a notation referencing the violation of this policy.

Procedure for Enforcement

The student will be made aware of the Academic Integrity policy at the time of initial application and throughout their educational experience. As a part of the application process, applicants will receive a copy of the policy and will be required to complete and submit a form that acknowledges that they have received and read the policy. Applications will not be processed without this documentation. The policy will be referenced in the syllabus of each course and is posted on the University website for easy reference.

The Program Coordinators and Full-Time Faculty are in the best position to ascertain the full impact of the actions of the student and are the catalysts to begin the process of inquiry regarding the allegations of a violation, regardless of the source of the allegation.

For the Doctoral Level programs, the Full Time Faculty member will replace the Program Coordinator in the procedures outlined below.

When an instructor is made aware of a violation of the Academic Integrity Policy at the Low Level, the instructor, under the direction of the Program Coordinator, will complete an Academic Integrity Violation Charge Form, communicate with the student and include their feedback on the form. The form and supporting documentation will be submitted to the Program Coordinator for review. The Program Coordinator and Instructor will determine the sanction. The sanction will be communicated to the student by the instructor. Documentation of the infraction will be kept on file with the Department Chairperson/Director through graduation. One year after the student graduates, all documentation, paper/electronic, of low level offenses will be destroyed.

When an instructor is made aware of a violation of the Academic Integrity Policy at the Medium Level, following consultation with the Program Coordinator, the student will be notified and the case and all supporting documentation will be forwarded to the Program Coordinator and the Department Chairperson/Director. The instructor will complete an Academic Integrity Violation Charge Form, communicate with the student and include their feedback on the form. The form and supporting documentation will be submitted to the Program Coordinator and the Department Chairperson/Director for review. The Department Chairperson/Director, the Program Coordinator and the Instructor will determine the sanction. The sanction will be communicated to the student by the instructor. Documentation of the infraction will be kept on file with the Department Chairperson/Director through graduation. If part of the sanction is Academic Probation, this designation will be placed on the student's transcript for the designated period. One year after the student graduates, all documentation, paper/electronic, of medium level offenses will be destroyed.

When an instructor becomes aware of a violation of the Academic Integrity Policy at the High or Severe Level, the instructor will immediately inform the Program Coordinator, the Department Chairperson/Director and the Dean of the School of Education. The instructor will complete an Academic Integrity Violation Charge Form. This will initiate a Formal Review Process. Supporting documentation will be reviewed and a letter to the student will be compiled and sent, via certified mail, to the student with information regarding the allegation, supporting documentation and notice that a Faculty Panel will be convened to review the evidence.

The student will be allowed to submit feedback within a designated timeframe. The student may request to be present for the panel review and may choose a member of the campus community to be present as an internal advisor. The Dean will convene a Faculty Panel and set a meeting date for review of the evidence. The recommendation of the panel will be submitted to the Dean of the School of Education. The Dean will review all of the documentation and the recommendation from the Faculty Panel. The determination of the Dean is final.

For all level offenses, the student has the right to appeal the decision. If a student feels that the charge or sanction related to the academic integrity policy violation is unacceptable and/or unreasonable, the student may submit the complaint, in writing, to the Department Chairperson/Director within two weeks of receiving notification of the determination. If a student does not receive a response from the Department Chairperson/Director within two weeks from the date of originally filing the complaint or is not satisfied with the result of that determination, the student may then submit the complaint to the Dean of the School of Education for review. If a student does not receive a response from the Dean of the School of Education within two weeks from the date of submitting the complaint to the Dean or is not satisfied with the result of that determination, the student may then submit the complaint to the appropriate Vice President or Provost. The determination of the Vice President or Provost is final.

Students may continue to participate in the course until the case has been resolved. If a student chooses to withdraw from the course, the process will continue through to resolution with the recommended documentation included in the student record. A grade of I (incomplete) should be assigned pending resolution. All information and identities of involved parties are confidential.

Administering this policy is the responsibility of everyone in the Wilkes School of Education community. Students, instructors, program coordinators, department chairpersons and the Dean all have an investment in providing an environment that promotes scholarship, honesty and integrity. This responsibility is taken seriously and this policy will be enforced uniformly.

Mission

The mission of the Graduate Education Programs at Wilkes University is to provide the educational community with opportunities to become leaders in classroom instruction and in the administration of schools. As such, the Graduate Education Program seeks to promote the highest levels of intellectual growth and career development through a collaborative environment that supports teaching in a diverse learning environment, while valuing commitment to the educational communities it serves.

Purpose

Graduate study in Education is offered primarily to enable teachers to enhance their preparation to become educational leaders. Each program is designed to broaden knowledge in the foundations of education as well as focus on a specific area of advanced training.

The master's degree program in Education is offered with majors in 21st Century Teaching and Learning, Art and Science of Teaching, Classroom Technology, Early Childhood Literacy, Educational Development and Strategies, Educational Leadership, Instructional Media, Instructional Technology, International School Leadership, Middle Level Education Programs, Middle Level Education with Initial Pennsylvania Grade 4-8 Certification, Online Teaching, Reading, School Business Leadership, Special Education, and Teaching English as a Second Language. All programs lead to a Master of Science in Education degree.

Wilkes University offers four graduate programs that lead to an additional certification through the Pennsylvania Department of Education (PDE). The Master of Science Degree in Educational Leadership qualifies an individual for K-12 principal certification. The Master of Science Degree in Instructional Technology combined with the IT internship qualifies an individual for Pennsylvania K-12 Instructional Technology Specialist certification. The Master of Science Degree in Middle Level Education qualifies teachers to apply for Pennsylvania's grades 4 to 8 certificate in a particular content area. The Master of Science Degree in Middle Level Education with Initial Pennsylvania Certification qualifies an individual to apply for Pennsylvania teaching certification in grades 4 to 8 in a particular content area. The Master of Science Degree in Reading with Pennsylvania Reading Specialist Certification qualifies an individual with a PA instructional certificate for Pennsylvania Reading Specialist certification. The Master of Science Degree in Education with Special Education certification qualifies an individual with a PA instructional certificate for additional certification in Special Education. All program requirements for the University as well as for PDE must be met in order for the graduate to be eligible for certification.

An additional program, although not a master's degree, is the Letter of Endorsement. These are available in three areas: Autism, Discovery Education EDGE, and Teacher Leadership and Instructional Coaching. These 12-credit programs lead to a Letter of Endorsement that teachers can use to validate that they have advanced knowledge and skill in the area as indicated by the title of the endorsement. Teachers may also obtain the ESL specialist certification by completing the designated four courses in the Teaching English as a Second Language Program.

Admission

For admission to graduate study in education, the applicant must have a baccalaureate degree with an appropriate major from an institution that is accredited by one of the six regional accrediting bodies recognized by the U.S. Department of Education, or the equivalent in the case of international students. In addition, several programs require a Pennsylvania teaching certificate. Although no minimum undergraduate grade point average is required for admission, unless otherwise stated, it is expected that candidates shall have maintained good or above-average performance during their undergraduate years and shall exhibit evidence of intellectual and temperamental fitness for graduate study.

All Master of Science in Education degree-seeking applicants must complete the following process to be considered for admission to the graduate program in education:

1. Submit a Wilkes University Graduate Application for Admission,
2. Pay the required one-time, non-refundable application fee,
3. Submit two letters of recommendation,
4. Submit a copy of your teaching certificate, if applicable. See the note on exceptions below for more details.
5. Submit official transcripts from all of the undergraduate universities attended while obtaining the bachelor's degree, including teacher certification and, any master's degrees earned.

Upon receipt of all required documents, the Program Coordinator will review files for acceptance. Accepted students are assigned an advisor to work with as they progress through the program. Students deficient in any academic aspect of the admissions requirements may be granted conditional admission. Such students may be permitted to take up to six credits of graduate courses on a conditional basis and at completion of those credits their application will be reconsidered for regular admission status.

Exceptions to the above process

All programs except Instructional Technology, Instructional Media, Middle Level Initial Certification, Online Teaching, School Business Leadership, Teaching English as a Second Language (non-cert option), and Discovery Education EDGE require a state-approved instructional certificate unless approved by the program coordinator. Applicants to the Educational Leadership principal certification program must follow the admissions process outlined in that section of this bulletin. Note: Applicants to the 21st Century Teaching and Learning, Early Childhood Literacy, and Art and Science of Teaching programs must be currently teaching or have access to a classroom in order to enter the program.

Non-Degree to Degree Seeking Students

Non-degree students who want to change to degree-seeking status must complete a new application for admission indicating their desired program, but do not need to re-pay the application fee. Students should then follow the remaining steps outlined above for submission of all appropriate documents to complete the change of status. A change in status is required at least one year prior to the intended date of graduation. Students must complete all courses required for the degree as outlined in the current Graduate Bulletin at the time of the status change.

Program of Study

Students are encouraged to consult with their advisor to plan their program of study. At the time of acceptance students are sent a Program Plan with which to document their progress through the program. It is highly recommended that students keep track of the courses they take on the Program Plan and contact their

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advisor with any questions they may have. It is the responsibility of the student to be sure they are taking the correct courses for their major. Students should follow the requirements outlined on the Program Plan or in the Graduate Bulletin to be sure they will meet the requirements for graduation. Students wishing to transfer credits into their program should follow the procedure outlined in the "Transfer Credits" section, listed below.

Students are expected to maintain a GPA acceptable for graduate level work and progress. A graduate student who accumulates two grades below 3.0 in his or her graduate courses will be placed on probation. A student earning a third grade below 3.0 will be dismissed from the graduate program. Grades below a 3.0 are not acceptable for meeting degree requirements, so any student earning a grade less than 3.0 will need to repeat that course in order to achieve an acceptable grade for graduation.

NOTE: It is the graduate student's responsibility to register for Graduation (GRD-000- B) the same semester they enroll in the final course required for their degree. Students must be fully admitted to their degree program in order to register for GRD-000-B. Students not fully accepted into the degree must contact the Student Service Center to obtain information on missing admissions documents. The student is strongly encouraged to contact their advisor at the time of registration for a preliminary audit to be sure all requirements will be met. The deadline for registering for graduation is 90 days prior to the next processing date for degree completion. Graduation is processed at the end of each term, however ceremonies are only held in May and September.

Transfer Credits

Students accepted into a master's degree program may transfer a maximum of six graduate credits from an approved and regionally accredited U.S. college or university as long as they meet all of the requirements identified in the University-wide Transfer Credits section of this document and the specific criteria below. This transfer credit limit is per student not per program. This means that students may only transfer a total of six credits into Wilkes at the master's level regardless of the number of master's degrees they choose to complete. The Department Chair will make the final determination regarding transfer credits and whether they will count as elective credits or qualify to replace required courses. Students must complete the Request for Transfer Credit form to initiate the transfer process for courses taken prior to entering Wilkes University. In addition, students must be admitted to the degree program in order for transfer credits to be posted to their Wilkes transcript.

In order for courses to count as electives, they must meet the academic intent of the student's master's program or be aligned to their respective professional assignment. External courses requested to transfer as required courses in the student's program must align with the content of the Wilkes course. Each transfer request is handled on a case-by-case basis and the student will be asked to produce a course syllabus and/or a letter justifying his/her request.

Students desiring to take courses from another college or university while enrolled in the Wilkes program must submit the Request to Transfer Credit form prior to registering for such courses. Failure to submit the proper paperwork may result in the inability to transfer those credits.

The required form is available on the Graduate Education web site: www.wilkes.edu/GradEd under 'Transfer Credit Info.' An official transcript must be received before any approved transfer credits can be posted to your Wilkes transcript. For more information, see Transfer Credits in the General Information section at the beginning of this Graduate Bulletin.

Second Master's Degree

A person who has an earned master's degree from Wilkes University, or is in the final semester of a master's from Wilkes, may apply to be enrolled in a second master's degree if the major, program or option is different. Up to 12 credits only of previous course work used to satisfy the requirements for the first degree (typically basic requirements from Areas I and II) may be applied to the second. This only applies to programs that have common courses. If no common courses exist between the two programs, students must take all of the courses in the second degree. All other admission and program requirements must be fulfilled. Students are encouraged to speak to the program coordinator of the new second program for advisement of courses that must be taken. A student who opts for a second master's degree must submit a written request to the department along with a new Wilkes graduate application form. There is no need to repay any application fees.

Degree Requirements

All candidates for the Master of Science in Education degree must complete a program of at least thirty (30) credits. See the following individual program descriptions for the specific course credit requirements for each graduate education program.

21ST CENTURY TEACHING AND LEARNING

21st Century Teaching and Learning

Ms. Grace Surdovel, Program Coordinator

The Master of Science in Education with a major in 21st Century Teaching & Learning is a fully online program offered in partnership with the National Institute for Professional Practice Graduate Education. This 30-credit program is designed to support secondary educators in Science, Mathematics, Language Arts, and Social Studies. Throughout this program, teachers will be provided with the tools and strategies that can be immediately applied in the classroom to create an engaging 21st Century Classroom. Unlike traditional master's degrees, teachers in this program will complete a series of courses designed specifically for their discipline with a supportive study group of fellow educators.

Applicants to this program must complete the admission process as outlined earlier in this section, and also be employed at the 6-12 level in an educational institution.

The program consists of the following courses (30 credits):

- EDAM 5030: Teaching in the 21st Century: The Need for Change (3 Credits)
- EDAM 5031: Action Research for Educational Change (3 Credits)
- EDAM 5032: Educational Assessment to Guide Instruction (3 Credits)
- EDAM 5033: Developing Reading and Writing Across the Curriculum (3 Credits)
- EDAM 5034: Applying Advanced Technology to Support Standards-Based Instruction (3 Credits)
- EDAM 5035A/B/C/D: Teaching Authentic Content in Math/Science/Social Studies/Language Arts (3 Credits)
- EDAM 5036A/B/C/D: Differentiated Instruction in the Classroom (Math/Science/Social Studies/Language Arts) (3 Credits)
- EDAM 5037A/B/C/D: Inquiry-based Learning in the Classroom (Math/Science/Social Studies/Language Arts) (3 Credits)
- EDAM 5038A/B/C/D: Project-based Learning in the Classroom (Math/Science/Social Studies/Language Arts) (3 Credits)
- EDAM 5039: Applying 21st Century Teaching to Educational Practice (3 Credits)

In cases where there is a choice of courses, participants should register for the course that contains the content area in which they currently teach. Please refer to the course description section of this bulletin for information on course prerequisite requirements.

NOTE:

- There are no transfer credits permitted in this program
- Courses in this program run on the National Institute for Professional Practice academic calendar. Visit www.professionalpractice.org or call 888-235-6555 for a copy of the most recent academic calendar

AUTISM ENDORSEMENT PROGRAM

Autism Endorsement Program

Program Coordinator: Dr. Kristin Bewick

The Autism Endorsement Program is a 4-course/12-credit fully online graduate program designed to provide professionals with advanced training in the areas of autism spectrum disorders and pervasive developmental disorders. The courses may also be taken as electives by other educational and clinical professionals who wish to gain enrichment in the areas addressed in each course.

The Pennsylvania Department of Education (PDE) has approved the Autism Endorsement Program. Therefore, candidates who satisfactorily complete the program, including field experiences, will be eligible to apply to the PDE for an endorsement on their existing Pennsylvania certificates. The PDE requires candidates to complete 80 total hours of field experience in this program.

Candidates interested in enrolling in the Autism Endorsement Program must provide a copy of their Pennsylvania certification. Certification may be at Instructional I or II levels, in areas including but not limited to, regular and special education, school psychologist, principal, guidance counselor, speech and language clinician, occupational and physical therapist, reading specialist, and home and school visitor.

The Autism Endorsement Program consists of the following three-credit courses:

- AUT 501 Autism Diagnosis and Treatment – Offered Fall semesters (20 hours field experience)
- AUT 502 Applied Behavioral Analysis and Autism – Offered Fall semesters (20 hours field experience)
- AUT 503 Autism Scope and Sequence – Offered Spring semesters (20 hours field experience)
- AUT 504 Advanced Autism Instruction and Intervention – Offered Spring semesters (20 hours field experience)

CLASSROOM TECHNOLOGY

Classroom Technology

Program Coordinator: Dr. James Chiavacci

A candidate for the Master of Science in Education degree with an emphasis in Classroom Technology will have the option of completing all courses on-line. The candidate must complete 30 credits:

Area I: Foundations of Education (6 credits required)

Required:

- ED 519 Issues, Law, and Trends in Education

And one of the following:

- ED 510 Psychological Foundations
- ED 511 Philosophical Foundations
- ED 512 Social Foundations
- ED 513 Comparative Foundations
- ED 515 Cognition
- *ED 569 Teaching Diverse Learners Using Inclusive Classroom Practices

Area II: Professional Skills (9 credits required)

- ED 520 Using Assessment to Guide Instruction
- ED 522 Curriculum and Instruction
- ED 585 Integrating Technology into the Curriculum

Area VI: Educational Computing Courses (12 credits required)

- ED 526 Internet Literacy for Educators
- ED 527 Multimedia Design for Digital Learning - previously titled Authoring Systems/Instructional Design
- ED 528 Print Media in the Digital Classroom - previously titled Using Print Media to Support Education
- ED 530 Utilizing Emerging Technologies to Improve Learning

Elective Courses (3 credits required)

Completion of the Classroom Technology degree does not fulfill the requirements for any additional teacher certification area. The intent of this program is to upgrade the technology skills of the classroom teacher. The Classroom Technology program is offered on-line and many on-site locations. For the most current listing of sites, refer to the Wilkes website.

DISCOVERY EDUCATION EDGE LETTER OF ENDORSEMENT

Discovery Education EDGE Letter of Endorsement

Dr. James Chiavacci, Program Coordinator

The Discovery Education EDGE is a 12-credit letter of endorsement program that provides a quick pathway to expertise in emerging technologies. By combining a forward thinking curriculum with existing and proven pedagogy, all under the guidance of an established leader in digital instruction, this program will prepare you for the challenges and opportunities of an ever-changing, digital classroom.

Required courses (6 credits)

EDIM 515 BYOD: Mobile Learning in Education

EDIM 516: Sustaining Digital Literacy

Electives (6 credit- choose two)

EDIM 510 Web 2.0 Impacting Learning Environments

EDIM 511 Portable Video Production and Application

EDIM 513 Inquiry-based Learning

EDIM 514 Internet Tools for Teaching

EARLY CHILDHOOD LITERACY

Early Childhood Literacy

Program Coordinator:Ms. Anne Butler

The Master of Science in Education with a major in Early Childhood Literacy is a fully online program offered in partnership with the National Institute for Professional Practice Graduate Education. This 33-credit program explores a comprehensive literacy framework that will provide teachers with the tools needed to empower their students to discover the many joys of reading and writing. Each course in this program is classroom embedded, which allows teachers to immediately apply the teaching strategies and techniques they are learning directly into their classroom.

Applicants to this program must complete the admission process as outlined earlier in this section, and also be employed at the K-3 level in an educational institution.

The program consists of the following courses (33 Credits):

Early Literacy Series (24 Credits)

- EDAM 5001 Early Literacy: Guiding Principles and Language Development (3 Credits)
- EDAM 5002 Word Study (3 Credits)
- EDAM 5003 Fluency and Vocabulary Development (3 Credits)
- EDAM 5004 Developing Comprehension, Pt I (K-3) (3 Credits)
- EDAM 5005 Developing Comprehension, Pt II (K-1) (3 Credits)
- OR**
- EDAM 5006 Developing Comprehension, Pt II (2-3) (3 Credits)
- EDAM 5007 Differentiated Small Group Instruction (K-1) (3 Credits)
- OR**
- EDAM 5008 Differentiated Small Group Instruction (2-3) (3 Credits)
- EDAM 5009 Developing Independent Readers (K-3) (3 Credits)
- EDAM 5010 Connecting Reading and Writing (K-1) (3 Credits)
- OR**
- EDAM 5011 Connecting Reading and Writing (2-3) (3 Credits)

Research Into Action (3 Credits)

- EDAM 5013 Teacher Leadership (3 Credits)

Action Research (6 Credits)

- EDAM 5012 Master Teacher Practicum: Applying Action Research to Develop a Results-Driven Early Literacy Classroom (6 Credits)

In cases where there is a choice of courses, participants should register for the grade level designated for each course that matches the level in which they currently teach. Please refer to the course description section of this bulletin for information on course prerequisite requirements.

NOTE:

- There are no transfer credits permitted in this program
- Courses in this program run on the National Institute for Professional Practice academic calendar. Visit www.professionalpractice.org or call 888-235-6555 for a copy of the most recent academic calendar

EDUCATION LEADERSHIP

Doctor of Education (ED.D.)

Dr. Mary Kropiewnicki, Chair, Associate Professor of Education, School of Education

Mrs. Pamela Koslosky, Administrative Assistant

Mission

The mission of the doctoral program in Educational Leadership is to produce knowledgeable, competent, and dedicated educational leaders with the skills and dispositions needed to serve in leadership capacities in their respective fields for the betterment of education for all students and society at large.

Programs

Wilkes University's Doctor of Education (Ed.D.) in Educational Leadership is a 60-credit post-master's program that capitalizes on the existing strengths of current programs in curriculum and instruction, educational technology, and leadership at the graduate level. The completion of required doctoral level coursework and the development and acceptance of a dissertation proposal to conduct field-based research grounded in theory resulting in a final dissertation and its defense are the requirements for the award of the degree.

The objectives of the doctoral program in Educational Leadership are to produce knowledgeable, competent, and dedicated educational leaders with the skills and dispositions needed to serve in leadership capacities in their respective fields for the betterment of education for all students and society at large.

The outcomes of this program are to provide students with: (1) The knowledge-base to serve as educational leaders in their respective fields. (2) The skills to apply research to identify and study current issues and problems in the field of education and to analyze the resulting data toward the betterment of education. (3) Comprehensive training in the areas of administration or technology, to include skills specific to each field, as well as effective interpersonal and communication skills, analytic decision-making abilities, and effectual leadership strategies. (4) Dispositions that place value on all students and people and that promote understanding, respect, and an appreciation of diverse perspectives and cultures. (5) Opportunities to develop self and others through reflection, teamwork, and mentoring. (6) The essential value of improving education for all students and society at large through informed, ethical, and reflective decision-making.

Admission

Admission to the doctoral program is based on indicators of academic ability and leadership potential, including: the completion of an application submitted with a current resume or curriculum vitae and copies of professional state certification/teaching license (if applicable); the submission of a scholarly or professional project, report, paper, or product with a brief abstract explaining how this work gives evidence of the applicant's potential for leadership and scholarship; two references from professionals having knowledge of the applicant's academic ability, professional work, and/or leadership potential; a record of academic excellence and successful completion of coursework at the bachelor's and master's degree levels with earned degrees at both these levels evaluated through the submission of official transcripts from undergraduate and graduate institutions; submission of the GRE score to meet the designated cut score and taken within five years of the date of application to the

program; successful interview with doctoral faculty; satisfactory rating on an extemporaneous writing sample given at the time of the interview.

Program Requirements

The program requires 60 credits of course work plus the successful completion and defense of a doctoral dissertation. New students begin in the fall semester as part of a doctoral cohort. It is recommended that students take an average of 12 credits per year to complete necessary coursework in approximately four years. A doctoral residency, involving intensive study through the completion of 18 credits in one year over three consecutive semesters, is required. Continuous enrollment (fall and spring) is required until graduation, although students may choose to take additional credits during summers.

Completion of the doctoral program requires that students successfully complete all coursework requirements with an overall GPA of 3.5 or higher, pass the Doctoral Qualifying Examination, demonstrate leadership competencies by documenting the attainment of student learning objectives through the submission of a Leadership Competency Portfolio (K-12 Administration students only) and develop and successfully defend a dissertation proposal under the guidance of a dissertation chair and committee. After acceptance of the proposal, students are elevated to candidacy and then apply to the Wilkes Institutional Review Board (IRB) for final approval prior to beginning the research study. Students must register for dissertation credit each academic semester (fall and spring) until the dissertation is successfully defended. The total time permitted to complete the doctoral degree is seven years, which includes any leaves of absence.

Transfer Credits

Students may be permitted to transfer 12 credits acquired post-master's toward the doctoral degree pending a review of transcripts from accredited institutions by the academic program coordinator. Credits must be posted on a graduate transcript after the date of the award of the master's degree from an accredited institution. Transfer credits must match existing credits contained in the scope of the doctoral program at Wilkes. Course descriptions will be reviewed to determine compatibility with existing Wilkes courses. Students may be required to submit course syllabi in cases in which the course descriptions are inconclusive.

Degree Requirements

All candidates for the Doctoral Degree in Educational Leadership must complete a program of at least sixty (60) credits.

Doctoral Core Courses Required of All ED.D. Students

Leadership: 9 credits

ED 610 Ethics for Educational Leaders
ED 612 Leadership, Diversity, & Societal Change
ED 614 Organizational and Leadership Theory

Research: 12 credits

ED 681 Introduction to Educational Research
ED 682 Quantitative Methods for Educational Research I
ED 683 Qualitative Methods in Educational Research I
ED 685 Quantitative Methods for Educational Research II OR
ED 686 Qualitative Methods in Educational Research II

Dissertation: 9 credits

ED 697 Dissertation Proposal Seminar (3 credits)
ED 698 Dissertation Proposal (3 credits)
ED 699 Dissertation (3 credits)

ED.D. Students select one 30-credit hour area of study:**K-12 Administration 30 credits (leading to Pennsylvania superintendent certification)****Required courses: 30 credits**

ED 623 Educational Technology Leadership (36-hour field experience)
 ED 625 Professional Development & Supervision (36-hour field experience)
 ED 627 Advanced Issues in Educational Law
 ED 628 Human Resource Development & Labor Negotiations
 ED 629 Strategic Thinking and Planning
 ED 650 Curriculum, Instruction, & Assessment (36-hour field experience)
 ED 652 Special Education Administration (36-hour field experience)
 ED 654 School Finance & Facilities Administration (36-hour field experience)
 ED 658 Advanced Studies in School District Leadership (90 hour internship)
 ED 659 Superintendent Internship (90 hour internship)

Educational Leadership 30 credits**Required courses: 15 credits**

ED 615 Professional Seminar in Educational Leadership
 ED 626 Politics and Policy for Educational Leaders
 ED 629 Strategic Thinking and Planning
 ED 632 Cognition and Learning
 ED 643 Trends and Innovations in Instructional Technology

Concentrations: 15 credits—Students select one of three available concentrations:**Curriculum and Instruction**

Recommended for students who wish to become a faculty member in higher education or work in the area of curriculum design and development.

- ED 670 Curriculum Theory
- ED 672 Curriculum Design and Instructional Models
- ED 673 Controversies in Curriculum, Instruction, and Assessment
- Two 3-credit electives from available doctoral level courses, which can include: ED 679 Internship in Curriculum and Instruction (90 hours)

Educational Technology

Recommended for students who wish to become a faculty member in higher education or work in the field of educational technology in public or private institutions.

- ED 635 Integrating Technology for Diverse Learners
- ED 646 Assistive Technology
- ED 645 Technology Supported Assessment
- Two 3-credit electives from available doctoral level courses, which can include: ED 639 Internship in Instructional Technology (90 hours)

Educational Leadership Studies

Recommended for students who currently work in or would like to work in higher education or in the field of educational leadership as a faculty member or as a member of the professional or administrative staff.

- ED 620 Educational Institutions and Systems
- Four 3-credit electives from available doctoral courses, which can include a 90 hour internship tailored to meet student's career goals

Superintendent's Letter of Eligibility

Students may enroll in the superintendent certification-only program through the Doctor of Education program in K-12 Administration. This PDE-approved program consists of 30-credits, which includes: eight 3-credit courses offered in a blended format (with field work totaling 180 hours) and 6-credits of a 180-hour internship at the superintendent's level.

Students may elect to apply for admission to Wilkes University's Doctor of Education (Ed.D.) during or at the conclusion of the program. The successful completion of this 30-credit certificate program satisfies the K-12 Administrative specialization requirements for the Ed.D. Thirty additional credits, which include research, and dissertation coursework are required to earn the Ed.D. in Educational Leadership.

Admission for the Certification-Only

Students must hold a valid PA administrative or supervisory certificate and a master's degree from an accredited institution for admittance. Candidates must have three years of satisfactory administrative or supervisory experience to be recommended for the Superintendent's Letter of Eligibility. A completed application with fee, three completed recommendation forms, official transcripts, photocopies of specific Pennsylvania certifications or professional licenses.

K-12 Administration courses for Superintendent Certification (30 credits)

Pennsylvania Department of Education required field and internship hours are noted after course titles. NOTE: ED 658 and 659 must be taken last in the program.

ED 623 Educational Technology Leadership (field hours)
 ED 625 Professional Development and Supervision (field hours)
 ED 627 Advanced Issues in Educational Law
 ED 628 Human Resource Development and Labor Negotiations
 ED 629 Strategic Planning and Thinking
 ED 650 Curriculum, Instruction and Assessment (field hours)
 ED 652 Special Education Administration (field hours)
 ED 654 School Finance and Facilities Administration
 ED 658 Advanced Studies in School District Leadership (90-hour internship)
 ED 659 Superintendent Internship (90-hour internship)

Doctoral Program Grading Scale

4.0	A	94-100%	Academic achievement of superior quality
3.5	B+	87-93%	Academic achievement of good quality
3.0	B	80-86%	Academic achievement of acceptable quality in meeting course requirements but below the average required for graduation
2.5	C+	75-79%	Academic achievement of adequate quality but below the average required to meet course and graduation requirements
2.0	C	70-74%	Academic achievement below the average to meet course and graduation requirements
0.0	F	Below 70%	Failure. No credit earned

More specific information about the doctoral programs, their requirements and admission procedures can be found on-line at www.wilkes.edu under Academics > Graduate & Professional > Doctorate of Education.

EDUCATIONAL DEVELOPMENT AND STRATEGIES

Educational Development and Strategies

Program Coordinator: Ms. Grace Surdovel

The Master of Science degree in Education with a concentration in Educational Development and Strategies is designed to meet the needs of practicing teachers, both in the United States and in overseas schools, by combining effective teaching practices with theory and research. Students will grow their knowledge base as well as gain practical skills and techniques that are directly applicable to their classroom.

A candidate for the Master of Science in Education may elect the program in Educational Development and Strategies (EDS). The requirements for this 30-credit degree are:

Area I: Foundations of Education (6 credits required)

Required

- ED 519 Issues, Law, and Trends in Education

And one of the following

- ED 510 Psychological Foundations
- ED 511 Philosophical Foundations
- ED 512 Social Foundations
- ED 513 Comparative Foundations
- ED 515 Cognition
- *ED 569 Teaching Diverse Learners Using Inclusive Classroom Practices

Area II: Professional Skills (9 credits required)

- ED 520 Using Assessment to Guide Instruction
- ED 522 Curriculum and Instruction
- ED 585 Integrating Technology into the Curriculum

Area V: Major Courses PLS (12 credits required)

- (numbered ED 541-561 and ED 5400)

Elective Courses (3 credits required)

Electives can be any graduate education course offered by Wilkes and listed in this bulletin that the student has not already taken, including topics courses listed as ED 598. Note: Additional PLS (Area V) courses cannot be used for elective credits in this degree program, including those listed as 558 Topics courses.

The EDS program is offered on-line and many on-site locations. For the most current listing of sites, refer to the Wilkes website.

EDUCATIONAL LEADERSHIP (EDLS)

Educational Leadership with PA K-12 Principal Certification

Chair: Dr. Mary Kropiewnicki

The master's degree program in Educational Leadership with K-12 principal certification (EDLS) is an advanced program of study consisting of 36 credits. A 27-credit certification only option exists for students in possession of an earned master's degree. All students applying for admission to the Educational Leadership program, degree or certification only, must follow the special admissions process described in this section of the bulletin. Students begin the field-based principal certification coursework in the fall of each year for the low residency/online program.

Program of Study

A candidate for the EDLS degree, which includes PA Department of Education K-12 Principal Certification, must complete the following courses for certification:

- ED 517 The Principal as Educational Leader (prerequisite course for all certification courses—30 field hours)
- ED 523 Administrative Leadership in Curriculum and Instruction (30 field hours)
- ED 571 Special Education Programming and Administration (30 field hours)
- ED 573 Evaluation of Educational Programs (30 field hours)
- ED 575 School Law for Principals
- ED 576 School Management and Communications (30 field hours)
- ED 578 Staff Development and Supervision (30 field hours)
- ED 592 A and ED 592B: Administrative Internship and Applied Research Project (taken last—180 intern hours)

The certification courses, with the exception of ED 575 and ED 592 A and B, each require a field experience of 30 hours and a research-based, field experience project completed under the guidance of a mentoring administrator with at least three years of experience and the course instructor. The two-semester, six-credit internship is required of all candidates for principal certification. The two-semester, 180-hour internship requires a site-based, research-based project under the guidance of a mentoring administrator with at least three years of experience and a university supervisor.

To fulfill degree requirements, students admitted as of 2014 must also complete:

- ED 508 Intercultural Communication
- ED 525 Introduction to Educational Research
- ED 587 Technology Leadership

These courses can be completed at any point in the program prior to graduation. Students must follow the process outlined later in this bulletin to register for graduation by the beginning of the final semester.

A 'Certification Only' option is available for the Educational Leadership program and requires the same admissions process as the degree-seeking option. A previous Master's degree, either from Wilkes or another university, is required for admission as a 'Certification Only' student. If the previous master's is from Wilkes, the application fee is waived, but a new, updated application along with the required admissions documents for EDLS must be submitted and processed prior to students registering for the first course

(ED 517). Certification only students complete only the 27 credits required for certification through the PDE for K-12 Principal.

Principal certification candidates will be recommended for certification upon successful completion of the required certification coursework, fieldwork, and internship. Candidates must self-register and pass the PDE required principal certification test, currently Praxis 6011 Educational Leadership: Administration and Supervision, offered through ETS, and provide verification from their school district that they have five years of satisfactory professional school experience. Application for certification is made by the candidate through the PDE Teacher Information Management System (TIMS) found on the PDE portal.

Admissions

Applicants must provide evidence of compliance with PDE requirements with at least three years of full-time teaching or professional experience completed at the time of application. A copy of the applicant's teaching certificate, which indicates that the candidate has earned Instructional 2 certification, can serve as this evidence, or the candidate can submit a statement from the current supervisor attesting to the candidate's years of teaching experience. After completing the online graduate application for admission, students must submit the admission items listed below to complete Phase I of admission to the program. Required items include:

- Two Letters of Recommendations from the applicant's school district of employment, dated within the last 18 months and submitted by individuals familiar with the applicant's professional abilities and potential to perform as a principal. One letter must be from a supervisor in the place of employment and verify at least three years of full-time teaching or certificated professional experience. Official Transcripts in original sealed envelopes
- Copy of Teaching Certificate
- Educational Philosophy Essay (1 page)
- 1-page Essay on "How Principals Shape Learning in Their Schools" (1 page)

Students should send the completed Phase 1 Admissions items to:

Student Service Center
Wilkes University
84 West South Street
Wilkes-Barre, PA 18766

All items in Phase 1 of the Admissions process must be submitted before a review of the application. Students will be notified of provisional admission status prior to the start of class. Students not meeting minimum requirements will be directed to other programs that meet their professional goals.

After successful completion of ED 517 and submission and assessment of Phase 2 requirements, a decision is made to grant students regular admission status.

Phase II

Students will participate in activities during the low residency and in ED 517, the mandatory first course to complete the admission process. Students must provide or demonstrate the following:

- **Problem-Solving Ability:** Problem-based learning activities are embedded in the first course. Students must demonstrate their problem solving and decision-making abilities throughout the course. Activities will be scored using prescribed rubrics.
- **Oral Presentation Ability:** Opportunities for oral speaking in both formal and informal settings are embedded in the first course. A

formal oral presentation is required in the first course. Activities will be scored using prescribed rubrics.

- **Professional Project/Paper and Abstract**

One example of a professional project or paper from previous coursework, or a work-related project (ex: curriculum document, grant application, in-service session conducted by the applicant) that the applicant considers an indication of leadership and scholarship in the field of education is required.

A two-to-three paragraph abstract, written by the applicant, must be attached to the front of this submission explaining how this work reflects the applicant's potential for leadership in education and scholarship at the master's level. The project and abstract will be submitted to the ED 517 course instructor by the designated due date.

Program Locations and Format

The MS in Educational Leadership (EDLS) is primarily available in a low residency/online format. The EDLS Low Residency/Online program begins by bringing student cohorts to the main campus. During the low residency session, students are oriented to academic program requirements, the demands and responsibilities of the principalship, and the first course that form the base of the EDLS experience—*ED 517 The Principal as Educational Leader*. Following the residency, students begin their work in ED 517 online. ED 517 and all subsequent courses offered online..

Weekender and off-campus EDLS programs may be offered face-to-face or in hybrid format (online and face-to-face) based on enrollment and need. Courses are offered on a rotational basis with students starting ED 517 as a cohort and moving through the remaining certification courses. Degree courses are offered as students progress through the program. Due to the structured nature of the admissions requirements and ED 517, which is a prerequisite course, students will start as a cohort and then take at least one-two courses every semester for the duration of the program to ensure completion. Students choosing to leave the cohort for any reason should expect to travel or wait for the courses they need. Students may not take courses listed as EDLS certification courses prior to completing ED 517, with the exception of ED 575, which does not have field hours.

INSTRUCTIONAL MEDIA

Instructional Media

Dr. James Chiavacci, Program Coordinator

The Master of Science in Education with a major in Instructional Media is a fully online program that is offered in collaboration with Discovery Education.

This 30-credit program prepares teachers to engage today's students in learning through the use of cutting-edge instructional media resources from video to Web 2.0 to virtual fieldtrips. It will train educators to become specialists who can effectively blend academic rigor and research with the latest technology in digital media, capitalizing on their "Net Gen" students' strengths. Participants in the program will have access to the #1 non-fiction media brand in the world, Discovery Education, which transforms K-12 and Higher-Ed classrooms with the highest-quality content that empowers educators to measure and improve student achievement. Applicants to this program should follow the admission guidelines outlined earlier in this section.

While a state approved teaching certificate is not required for admission to this program, it is strongly encouraged that students have experience in an educational environment. Experience using technology is also recommended.

To meet the program requirements students should follow the program of study as outlined below.

The program consists of 21 credits of foundation and general pedagogy courses and 9 credits of electives.

Foundations and pedagogy courses (21 credits)

- EDIM 501 Cognition and Technology: Aligning Brain-based Research and Technology Integration (3 credits)
- EDIM 502 Project-based Learning (3 credits)
- EDIM 503 Differentiation Supported by Technology (3 credits)
- EDIM 504 Digital Storytelling (3 credits)
- EDIM 507 Globalization and Advocacy (3 credits)
- EDIM 508 Digital Media in the Classroom (3 credits)
- ED 520 Using Assessment to Guide Instruction (3 credits)

Elective courses (choose 9 credits)

- EDIM 510 Web 2.0 Impacting Learning Environments (3 credits)
- EDIM 511 Portable Video Production and Application (3 credits)
- EDIM 513 Inquiry-based Learning (3 credits)
- EDIM 514 Internet Tools for Teaching (3 credits)
- EDIM 515 BYOD: Mobile Learning in Education
- EDIM 516 Sustaining Digital Literacy

INSTRUCTIONAL TECHNOLOGY

Instructional Technology

Program Coordinator: Dr. James Chiavacci

The master's degree in Instructional Technology is designed primarily for teaching professionals. Core education courses are combined with courses in educational technology to prepare educators to assume positions of leadership in their school or district in the area of technology. In addition to the master's degree, the program offers Pennsylvania Department of Education certification as an Instructional Technology Specialist.

Program of Study

- ED 530 Utilizing Emerging Technologies to Improve Learning
- ED 577 Principles of Information Security (Prereq: ED 588)
- ED 579 Media Design
- ED 583 Courseware Design and Construction
- ED 587 Technology Leadership
- ED 588 Operating Systems and Networking
- *ED 580: Technology for Assessment and Adaptation
- *ED 581: Technology to Support All Learners
- *ED 582: Technology to Support Curriculum & Instruction
- *ESL 509: Computer Assisted Language Learning

Note: * Courses focused on adaptations and accommodations & ELL 9 + 3 requirements of PA §49.13

Required for Certification

- ED 591 Internship

Note: In addition to the Educational Computing Courses, four courses* are required for Pennsylvania Department of Education certification as a K-12 Instructional Technology Specialist for a total of 33 credits for the Master's degree with IT certification. Candidates for the Instructional Technology Specialist Certificate who do not have a valid LEVEL 1 or LEVEL 2 Pennsylvania Instructional certificate must achieve a qualifying score on the PAPA..

The criteria for admission to the Instructional Technology Specialist program are:

- completion of the Wilkes University graduate application/application fee.
- recommendations from college faculty and/or professional supervisors.
- official transcripts indicating successful completion of a baccalaureate degree with an overall minimum undergraduate GPA of 3.0 from an accredited college or university.

Students who do not have a 3.0 GPA may be admitted conditionally. After completion of 12 graduate credits, performance will be evaluated. If successful, the student may then apply for full admission to the program.

The Master of Science in Education with a concentration in Instructional Technology was designed to prepare educators to assume positions of technology leadership in schools. Graduates of the program have gone on to become computer coordinators in K-12 settings, work in the computer industry, serve as technology consultants to education, business or industry, or are pursuing a doctorate in the field.

INTERNATION TEACHING AND LEARNING

International Teaching and Learning

Chair:Dr. Mary Kropiewnicki

The goal of this master's program is to provide comprehensive graduate-level education in the study of teaching and learning to international educators and/or international school community members holding bachelor's degrees from accredited post-secondary institutions. It is designed so that previous education coursework or practice is not required. The program focuses on the various foundations of education, as well as introducing cultural agility and educational technology.

This program is cohort-based and site-based. It combines an on-site low-residency model with online coursework to create a unique hybrid graduate program. Residencies occur once each semester, fall and spring, with a total of four throughout the program. The combination of required courses and customizable coursework allows for a variety of program strands based on the unique needs of international schools throughout the world. Selection and sequencing of courses in Areas I and II are guided by the department chair and faculty at Wilkes in collaboration with the school head to address the educational needs and the backgrounds of the cohort members. Degree completion requires 30 credits.

Program Outline for MS in International Teaching and Learning

(International Cohort-based, Low-residency Program)

Required Courses (15 credits)

- ED 508 Intercultural Communication
- ED 520 Using Assessment to Guide Instruction
- ED 522 Curriculum and Instruction
- ED 525 Introduction to Educational Research
- ED 539 Advanced Studies in Teaching and Learning (Capstone)

Area I: Foundations of Education (6-9 credits)

- ED 510 Psychological Foundations of Education
- ED 511 Philosophical Foundations of Education
- ED 512 Social Foundations of Education
- ED 513 Comparative Foundations of Education
- ED 515 Cognition

Area II: Educational Technology (6-9 credits)

- ED 526 Internet Literacy for Educators
- ED 530 Utilizing Emerging Technologies to Improve Instruction
- ED 585 Integrating Technology into the Curriculum
- ED 587 Technology Leadership
- ED 5080 Technology for Assessment and Adaptation

LETTER OF ENDORSEMENT: TEACHER LEADERSHIP AND INSTRUCTIONAL COACHING

Requirements

Program Coordinator: Ms. Grace Surdovel

The Letter of Endorsement in Teacher Leadership and Instructional Coaching is a 12-credit online graduate program that quickly equips educators with the practical skills and tools necessary to be successful in a new role, while earning the respect of colleagues. Upon successful completion of this program, candidates will be granted a Letter of Endorsement that can be presented as evidence that knowledge and skills of teacher leadership and instructional coaching have been effectively demonstrated.

Teachers interested in applying to this program must have a minimum of three years full-time teaching experience in an educational setting. Applicants must submit the program application, current application fee, teaching certificate and one recommendation to enroll in the program. The recommendation should be from the applicant's current principal or supervisor and attest to the applicant's ability to be a teacher leader as well as verify the length of service as a full-time teacher.

The program consists of the following:

Teacher leader and instructional coaching series (must complete four courses = 12 credits)

- EDAM 5013 Teacher Leadership - must take as first course in program (3 Credits)
- EDAM 5020 Instructional Coaching i (3 Credits)
- EDAM 5021 Instructional Coaching ii (3 Credits)
- EDAM 5022 Problem-based Approach to Instructional Coaching k-12 (3 Credits)

Note:

- There are no transfer credits permitted in this program
- Courses in this program run on the National Institute for Professional Practice academic calendar. Visit www.professionalpractice.org or call 888-235-6555 for a copy of the most recent academic calendar.

MS IN INTERNATIONAL SCHOOL LEADERSHIP

International School Leadership

Chair: Dr. Mary Kropiewnicki

This master's degree is for educators in international schools who want to assume leadership positions in those schools. designed in partnership with the Association for the Advancement of International Education (AAIE) and Performance Learning Systems (PLS). This program develops the leadership, instructional, and management skills needed to advance and excel as an international school leader. The degree includes 12 required courses (36 credit hours) all offered online. Students will be paired up with a program mentor who is an experienced education professional who has worked extensively in international schools. Courses offered through the PLS course management system are designed by the EDIL acronym, while courses offered through the Wilkes course management system are designated by the ED acronym.

The program includes learning to manage school operations and monitor resources for a safe and effective learning environment; to comply with the various global, cultural, political and legal contexts; to develop rigorous and relevant course content using proven strategies and the latest technology trends; to foster a culture of integrity by committing to ethical leadership practices, principled personal beliefs, values, and behaviors; to develop a vision and mission that's shared and supported by school stakeholders; to cultivate a meaningful partnership with a board that supports the school's mission and vision; and to collaborate with community members and effectively utilizing community resources.

The courses required to complete the degree program include:

PLS 3rd Learning/ AAIE Courses (24 credits)

- EDIL 5001 Vision and Mission to Guide International Schools
- EDIL 5002 Leading for Staff and Student Learning in International Schools
- EDIL 5003 Governance in International Schools
- EDIL 5004 International School Management and Leadership
- EDIL 5005 Building and Sustaining a Healthy International School Culture
- EDIL 5006 Ethical Leadership in International Schools
- EDIL 5007 Situational Awareness and Diplomacy in International Schools
- EDIL 5008 Continuous Professional Growth for International School Leaders

Wilkes Required: 6 credits

- ED 508 Intercultural Communication
- ED 525 Introduction to Educational Research

Wilkes Electives: 6 credits (Choose two courses)

- ED 510 Psychological Foundations of Education
- ED 513 Comparative Foundations of Education
- ED 515 Cognition
- ED 585 Integrating Technology into the Curriculum
- ED 587 Technology Leadership

MIDDLE LEVEL EDUCATION PROGRAMS

Middle Level Education Programs

Program Coordinator: Ms. Anne Butler

The master's degree plus certification in Middle Level Education (EDML) is a 36-credit master's of science degree with a choice of concentration in Middle Level Mathematics, Science, English/Language Arts, or Social Studies. The degree prepares teachers to better meet the needs of adolescent learners and prepares teachers to apply for Pennsylvania's grades 4-8 certificate in a particular content area.

Prospective students must hold Level I or Level II instruction certification. The curriculum for the degree and certification program includes adolescent development, cognition and learning, subject matter pedagogy, and assessment in the program of study

Students will select one of four concentrations at the time of application:

- Middle Level Mathematics
- Middle Level Science
- Middle Level Social Studies
- Middle Level English/Language Arts

36-Credit EDML Master of Science in Education plus certification Program

Core Education

- ED 569 Teaching Diverse Learners Using Inclusive Classroom Practices

Core Knowledge Courses (9 credits required – Choose three of the following outside your concentration area):

- EDML 5002 Mathematics in Middle Level Education
- EDML 5003 Science in Middle Level Education
- EDML 5004 Literacy & Language in Middle Level Education
- EDML 5005 Social Studies in Middle Level Education

Professional Practice Courses (9 credits required)

- EDML 5001 Teaching Adolescent Learners at the Middle Level
- EDML 5007 Development of the Adolescent Learner at the Middle Level
- EDML 5009 Internship in Middle Level Education (Taken in final semester; special permission required)

Students select from one of four concentrations:

Middle Level Mathematics Concentration

- EDML 5010 Number Theory in Middle Level Education
- EDML 5011 Measurement Concepts in Middle Level Education
- EDML 5012 Data Analysis, Probability, and Statistics in Middle Level Education
- EDML 5013 Algebraic Concepts in Middle Level Education
- EDML 5014 Geometry Essentials in Middle Level Education

Middle Level Science Concentration

- EDML 5020 Scientific Inquiry and Literacy in Middle Level Science
- EDML 5022 Life Sciences in Middle Level Education

- EDML 5023 Physical Science in Middle Level Education
- EDML 5024 Earth and Space Sciences in Middle Level Education
- EDML 5025 Chemical Science in Middle Level Education

Middle Level English/Language Arts Concentration

- EDML 5030 Adolescent Literature
- EDML 5031 Literary Forms and Media Literacy in Middle Level Education
- EDML 5032 Reading Strategies in Middle Level Education
- EDML 5033 Teaching and Evaluating Writing I in Middle Level Education
- EDML 5034 Teaching and Evaluating Writing II in Middle Level Education

Middle Level Social Studies Concentration

- EDML 5040 US History in Middle Level Education
- EDML 5041 Geography in Middle Level Education
- EDML 5042 Government and Civics in Middle Level Education
- EDML 5043 World History in Middle Level Education
- EDML 5044 Fundamentals of Economics in Middle Level Education

MIDDLE LEVEL EDUCATION WITH INITIAL PA GRADES 4 TO 8 TEACHING CERTIFICATION

Middle Level Education with Initial PA Grades 4 to 8 Teaching Certification

Program Coordinator: Ms. Anne Butler

The master's degree in Middle Level Education is a 39-credit program designed for adults who wish to teach in Pennsylvania at the middle level -- grades 4 to 8. Upon successful completion of the program, students will be eligible to apply for Pennsylvania teaching certification. Candidates will also earn an advanced degree to excel in teaching adolescent learners.

Admissions Requirements

The program is ideal for students with bachelor's degrees in mathematics, the sciences, English or communications, or the social sciences. Wilkes will also consider students who hold a bachelor's degree in other disciplines, but have at least 18 credits in one of these core areas.

In addition, applicants must submit:

- Online application at www.wilkes.edu/applyonline
- Official undergraduate and graduate transcripts
- Two recommendation forms
- Current and valid clearances, all indicating "no record":

Program of Study

The program requires 39 credits plus observation and student teaching hours. All courses are three credits unless otherwise noted. Additional coursework may be required, per transcript review.

Required Courses (39 credits)

General Education Requirements (15 credits)

ED 520 Using Assessment to Guide Instruction

ESL 506 Teaching the Four Skills: Reading, Writing, Listening & Speaking*
(15 field hours)

EDSP 501 Special Education Methodology I* (20 field hours)

EDSP 503 Behavior Management* (20 field hours)

EDAM 5049 Content Literacy

Middle Level Professional Practice Requirements (15 credits)

EDML 5000 Foundations of the Education Professional* (30 field hours)

EDML 5001 Teaching Adolescent Learners at the Middle Level* (15 field hours)

EDML 5007 Development of the Adolescent Learner at the Middle Level*
(15 field hours)

EDML 5008 Student Teaching internship in Middle Level Education* – 6 credits (final semester; permission required)

Middle Level Core Knowledge Requirements (9 credits)

Select three courses not in your concentration area

EDML 5002 Mathematics in Middle Level Education

EDML 5003 Science in Middle Level Education

EDML 5004 Literacy & Language Arts in Middle Level Education

EDML 5005 Social Studies in Middle Level Education

*Observation and Student Teaching Requirements

Field experiences and student teaching are mandatory, hands-on learning components to teacher certification. These experiences take place in a school near your home. The program culminates in a full-time, semester long student teaching assignment.

ONLINE TEACHING

Online Teaching

Program Coordinator: Dr. James Chiavacci

The master's degree in Online Teaching will provide best practices for designing online instruction, teaching previously developed courses, designing and implementing meaningful assessments for the online classroom, incorporating the latest in technology tools appropriate for online learning, and integrating primary resources in the online environment. The program equips the participant with skills to perform these functions for their current or future employers.

Required: 18 credits

- ED 520 Using Assessment to Guide Instruction (Wilkes)
- ED 530 Utilizing Emerging Technologies to Improve Learning (Wilkes)
- ED 5001 Social & Ethical Issues in Distance Learning (Wilkes)
- ED 5002 Instructional Design for Online Educators™ (PLS)
- ED 5003 Facilitating Online Learning Communities™ (PLS)
- ED 5004 Action Research in the E-Learning Environment™ (PLS)

Elective bank 1: 2 courses (6 credits) required from this list

- ED 5010 Teaching 3-D: Virtual Classroom Environments (Wilkes)
- ED 579 Media Design (Wilkes)
- ED 5011 Digital Video in Instructional Design and Delivery (Wilkes)
- ED 5012 Trends and Innovations in Instructional Technology (Wilkes)

Elective bank 2: 2 courses (6 credits) required from this list

- ED 5020 Using Online Resources to Bring Primary Sources to the Classroom™ (PLS)
- ED 5021 Blended and Synchronous Learning Environments™ (PLS)
- ED 5022 Simulations and Gaming Technologies for the Classroom™ (PLS)
- ED 5023 Building Online Collaborative Environments™ (PLS)
- ED 5024 Educating the Net-Generation™ (PLS)

READING WITH PENNSYLVANIA READING SPECIALIST CERTIFICATE

Reading with Pennsylvania Reading Specialist Certificate

Program Coordinator: Ms. Anne Butler

The Master of Science degree in Education with a concentration in Reading with Pennsylvania Reading Specialist certification is designed for teachers who seek instructional methods for readers of differing abilities or who would like to become a reading specialist. The program is offered in partnership with the National Institute for Professional Practice, a private organization specializing in e-learning for the professional development of educators.

The program is offered in a convenient online format, with required field hours completed where students reside. Participants will engage in embedded learning, allowing for immediate application of program coursework to their own classroom. Action research will be employed to explore the use and effectiveness of instructional strategies that help diagnose and remediate reading difficulties.

A 100-hour internship serves as the culminating experience preparing students for the role of reading specialist while working in an instructional setting under the supervision of a licensed reading specialist. Interns will implement reading programs, plan interventions, and apply a range of reading assessments and instructional strategies in the diagnosis and remediation of reading problems. Interns will demonstrate the ability to manage the instructional environment and effectively communicate to promote the development of literacy.

The courses in the program include:

- EDAM 5060 Foundations of Literacy and Language Acquisition
- EDAM 5068 Emergent Literacy
- EDAM 5062 Vocabulary and Comprehension Development
- EDAM 5063 Developing Reading Through Writing
- EDAM 5064 Instructional Strategies to Support Independent Readers
- EDAM 5061 Assessing Literacy
- EDAM 5069 Diagnosis & Intervention in Literacy
- EDAM 5066 Accommodations and Adaptations in Literacy for Diverse Learners
- EDAM 5049 Content Literacy
- EDAM 5065 Literacy Leadership and Coaching
- EDAM 5067 Reading Specialist Internship (6 Credits)

SCHOOL BUSINESS LEADERSHIP

School Business Leadership

Chair: Dr. Mary Kropiewnicki

The Master of Science degree in Education with a concentration in School Business Leadership in Education is a 30-credit fully on-line program. Wilkes has collaborated with the Pennsylvania Association of School Business Officials (PASBO) to design advanced courses for the practicing school business professional or anyone interested in entering the field. Courses cover the ten major areas important to any school business professional. Interested candidates should follow the admissions procedures in the Master's Degree Programs that follow. Applicants must have a minimum of a bachelor's degree from an accredited college or university in an appropriate field. A teaching certificate is not required for this program.

Students should take the ten School Business Leadership courses, SBL 501 through SBL 510, to complete all program requirements.

- SBL 501 Public Relations and School Communications
- SBL 502 School Facility Management
- SBL 503 Financial Operations of School Districts
- SBL 504 Financial Planning & Management for School Business
- SBL 505 Human Resources in Education
- SBL 506 Materials Management in Schools
- SBL 507 Information Technology in Education
- SBL 508 Student Transportation
- SBL 509 Food Service in Education
- SBL 510 Leadership for School Business

SBL 510 is a capstone course taken during the final semester of coursework. Additionally, it is recommended that Pennsylvania students with little or no school business experience take the prerequisite courses offered through the Pennsylvania Association of School Business Officials (PASBO) entitled the Elements program. For more information on the Elements courses, contact Corrine Shearer, Chief Learning Officer at PASBO, 717-540-9551 or email corrineshearer@pasbo.org.

SECONDARY EDUCATION

Requirements

Wilkes offers Master's degree programs in Secondary Education in various content areas including Biology, Chemistry, English, History, and Mathematics. Applicants must possess teacher certification in the content area for which they are applying. The secondary education programs are not designed to prepare students for certification. A candidate for the Master of Science in Education degree whose program is in one of the secondary school teaching subjects must complete 18 credits in the appropriate content area and 12 Education graduate course credits consisting of six credits in Area I Foundations of Education and six credits in Area II Professional Skills to include ED 520 Using Assessment to Guide Instruction and ED 522 Curriculum and Instruction). Information about specific courses in the Secondary Education master's degree programs can be found in the Biology, Chemistry, English, History or Mathematics sections of this bulletin. Students are encouraged to contact the department chair of the specific content area to inquire about course availability. The education courses of the Secondary Education programs may be taken at off-campus locations in any semester, but the content area courses can only be taken on the Wilkes campus, typically during fall and spring semesters only.

SPECIAL EDUCATION

Special Education

Program Coordinator and Advisor: Ms. Kali Fedor

The Master of Science in Education Program with Special Education Certification Option is designed to prepare candidates for Pennsylvania Instructional I certification in Special Education. The current PA special education certification, under the new PDE regulations (referred to as Chapter 49) require applicants to choose a certification grade bands of PK-8 or 7-12. This current certification guideline affects any candidates who apply to the state for special education certification after August 31, 2013 because the previous N-12 special education certificate is no longer issued..

FOR STUDENTS WHO ENTER THE PROGRAM AS OF FALL 2012. CHAPTER 49 REGULATIONS HAVE CHANGED THE ADMISSION CRITERIA AND PROGRAM REQUIREMENTS INCLUDING PREREQUISITES, COURSES, AND FIELD EXPERIENCE HOURS. ANY ADDITIONAL REVISIONS TO THE PROGRAM, BASED ON PDE APPROVAL, NOT REPRESENTED IN THIS BULLETIN, WILL BE PUBLISHED AT www.wilkes.edu/pages/506.asp.

NEW PROGRAM REQUIREMENTS AS OF FALL 2012:

A candidate for the Master of Science in Education with Special Education Certification Option will complete 30 graduate credits to obtain the Master's degree. Certification in Special Education may be pursued after the completion of the 18 credits of EDSP courses, including the culminating Special Education Internship experience in [EDSP 506](#), the three pre-requisite courses, and ED 510.

As of fall 2012, candidates will enter the program declaring either the PK-8 or 7-12 grade band option. The criteria for admission to each grade band option are regulated by the Pennsylvania Department of Education (PDE) as follows:

Special Education PreK-8 Option: Candidates with previous PA certificates in early childhood N-3, elementary K-6 or PreK-4, middle school 4-8, K-12 and certified reading specialists are eligible for this option.

Special Education 7-12 Option: Candidates with previous PA certificates in secondary education 7-12(content areas), K-12 and certified reading specialists are eligible for this option.

Prerequisite course requirements: (9 credits)

Courses and their equivalents completed in a previous undergraduate or graduate program may be accepted towards these prerequisites, as determined by the Program Coordinator.

- EDAM 5066 Accommodations and Adaptations in Literacy for Diverse Learners (undergraduate or graduate level, or Reading Specialist certificate)
- ESL 504 Intercultural Communication For Language Teachers (undergraduate or graduate level, or ESL certificate)
- ED 569 Teaching Diverse Learners Using Inclusive Classroom Practices (undergraduate or graduate level)

Core Courses (12 credits)

- ED 519 Issues, Laws, and Trends in Education.
- ED 510 Psychological Foundations (required for certification)
- ED 522 Curriculum and Instruction
- ED 585 Integrating Technology in the Curriculum

Special Education Courses (15 credits)

- EDSP 501 Special Education Methodology I with Field Experience (Offered during the fall semesters at the Wilkes campus. This is the only EDSP course that is offered online.)
- EDSP 502 Special Education Methodology II with Field Experience (Offered during the spring semesters at the Wilkes campus.)
- EDSP 503 Behavior Management with Field Experience (Offered during the fall semesters at the Wilkes campus.)
- EDSP 504 Assessment in Special Education (Offered during the spring semesters at the Wilkes campus.)
- EDSP 505 Effective Practices in Special Education (Offered during the summer semesters at the Wilkes campus. Summer semester starts in May and ends in August)
- EDSP 506 Internship in Special Education (Offered during all semesters at the Wilkes campus only.)

The state will require candidates to take the new Special Education Certification test called the PECT (Pennsylvania Educator Certification Tests) available at: www.pa.nesinc.com. Candidates will select the special education test that reflects the grade band being pursued in this program (either PK-8 OR 7-12), based on their current certification area, as stated above per PDE regulations. Candidates will apply for state certification via the PDE website Teacher Information Management System (TIMS).

TEACHING ENGLISH AS A SECOND LANGUAGE

Teaching English as a Second Language

Program Coordinator: Dr. Kimberly Niezgoda

The Master of Science degree in Education with a concentration in Teaching English as a Second Language will qualify individuals to instruct populations whose first language is not English. Graduates will be prepared to teach in K-12 schools, colleges and universities, private language schools and business-sponsored English programs, both in the United States and internationally. Those seeking ESL certification in the State of Pennsylvania will need to take 15 credits and complete 60 hours of field work.

The 15 credit certificate option allows educators to earn their Pennsylvania ESL program specialist certificate by completing the first five courses in the TESL program. Credits earned in the certificate program can be applied to the 30-credit master's degree, for students who choose to continue to grow in this field.

Course Sequence

Requirements for ESL certification (15 credits)

- ESL 501 Approaches to Teaching Second Languages* (prerequisite course)
- ESL 503 Second Language Assessment* (prerequisite course; w/ 15 hrs. field experience)
- ESL 502 Language Concepts for Second Language Learning and Teaching
- ESL 506 Teaching the Four Skills: Reading, Writing, Listening and Speaking (w/15 hrs. field experience)
- ESL 508 Second Language Program Development (w/30 hrs. field experience)

Additional requirements for the master's degree (15 credits)

- ESL 504 Intercultural Communication for Language Teachers
- ESL 505 Second Language Acquisition
- ESL 507 Sociolinguistics and Second Language Acquisition
- ESL 509 Computer-Assisted Language Learning
- ESL 512 ESL Teaching and Evaluation Theory

THE ART AND SCIENCE OF TEACHING

The Art and Science of Teaching

Program Coordinator: Ms. Grace Surdovel

The Master of Science in Education in The Art and Science of Teaching is a 30 credit online graduate program designed to increase student achievement by enhancing teacher's knowledge and understanding of effective instructional practices. This program is the result of a two-way collaborative partnership between Wilkes University and National Institute for Professional Practice, a private organization specializing in e-learning for the professional development of educators. The structure of the proposed program consists of 8 three credit courses and one six credit capstone course. The content of the courses is based on the extensive research of Dr. Robert Marzano regarding the impact of effective instructional practices on student learning. The goal of this master's program is to develop Expert Teachers by increasing teacher knowledge and understanding of evidence-based practices which will translate to measurable changes in the classroom and subsequently increase student achievement. The program is primarily targeted at elementary, middle, and high school teachers.

The courses in the program include:

- EDAM 5040 Foundations of the Art and Science of Teaching (prerequisite course)
- EDAM 5041 Establishing Learning Goals to Support Learning & Instructional Design
- EDAM 5042 Monitoring & Measuring Student Progress
- EDAM 5043 Actively Processing New Content
- EDAM 5044 Extending Student Learning
- EDAM 5045 Designing Instruction for Student Engagement (Final course in program)
- EDAM 5046 Creating an Effective Classroom Environment
- EDAM 5047 Developing Relationships and High Expectations for Student Learning
- EDAM 5048 Applying the Art and Science of Teaching

There are no transfer credits permitted in this program.

Courses in this program run on National Institute for Professional Practice's academic calendar. Visit www.professionalpractice.org or call 888-235-6555 for a copy of the most recent academic calendar.

Registration and payment for courses in the MS Ed: The Art & Science of Teaching program are processed by National Institute for Professional Practice. Visit www.professionalpractice.org or call 888-235-6555 for more information on payment options and the registration process.

ENGINEERING

ELECTRICAL ENGINEERING AND PHYSICS

Chair: Thyagarajan Srinivasan, Ph.D.

- [Master of Science in Electrical Engineering \(M.S.E.E.\)](#)
- [Master of Science in Engineering Management](#)
- [Master of Science in Mechanical Engineering \(M.S.M.E.\)](#)

BIOENGINEERING

Gregory Harms, Ph.D., Program Co-director & Advisor – Biomedical Track

William Terzaghi, Ph.D., Program Co-director & Advisor - Cell/Molecular Track

- [Master of Science in Bioengineering](#)

MASTER OF SCIENCE IN BIOENGINEERING

Master of Science in Bioengineering

Gregory Harms, Ph.D., Program Co-director & Advisor – Biomedical Track
William Terzaghi, Ph.D., Program Co-director & Advisor - Cell/Molecular Track

Program Features

Wilkes University's Master of Science degree in Bioengineering combines engineering concepts and analysis with biology, medicine, health, and computer sciences to teach students the fundamentals of developing new medical devices, treatments and materials. The 36-credit program offers students the opportunity to select from one of two available majors, Biomedical or Cell/Molecular. Biomedical Engineers develop artificial limbs, joints, tissues and organs as well as design diagnostic equipment, monitoring devices and drug delivery systems. Cell/Metabolic Engineers create organisms, which either produce useful biochemicals for therapeutic applications, or perform unique functions, such as creating useful biochemicals for therapeutic and industrial applications or detecting or detoxifying biohazardous chemicals.

Students will have the opportunity to work with faculty who are leaders in their fields, including specialists in the latest medical device designs, imaging systems, bioengineering and metabolic technologies.

Admissions Requirements

The Wilkes program is designed for those with a bachelor's degree in engineering or biology as well as for those seeking to strengthen their medical school application credentials. Individuals with undergraduate degrees in other life science disciplines may also be considered. Applicants must submit an online application, official undergraduate transcripts, and 2 letters of reference.

International applicants must also submit a statement of financial guarantee, a WES evaluation of their undergraduate transcript, and an official Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) score, in addition to the previously-listed admissions requirements.

Program Requirements

Students enrolling in the Bioengineering program will be assigned an advisor in the chosen track at the time of admission. Students are strongly encouraged to contact their advisor to discuss program prerequisites, course selections, research opportunities, and other programmatic questions.

The program has a common set of core courses for both majors. All students must take the 6 credits of core bioengineering courses, BEGR 409 Introduction to Bioengineering and BEGR 411 Integrated Product Development, at the start of the program. Students then enroll in 6 courses (18 credits) designated for their chosen major and 6 credits of electives. Students will complete their program with 6 credits of thesis work or may elect to do a 3 credit project and one additional elective course, for a total of 36 program credits.

Core courses- 6 credits
Major courses - 18 credits
Electives - 6 credits

Thesis/Project - 6 credits

36 total program credits

Provided below is a sample program plan for each major. Plans are based on full-time enrollment, which is 9 credits per semester for graduate students. Students electing to enroll part-time should discuss course scheduling with their advisor to ensure timely completion of all program requirements. In addition, students should select elective credits in consultation with their advisors, particularly if specific specialization knowledge is desired.

Biomedical Major Program Plan

First Semester (Fall)

BEGR 401: Applied Engineering Analysis
BEGR 409: Introduction to Bioengineering
BEGR 411: Integrated Product Development

Second Semester (Spring)

BEGR 421: Biofluidics and Microfluidics
BEGR 415: 3-D Modeling of Human Anatomy and Physiology
BEGR 488: Biomedical Devices and Design

Third Semester (Fall)

BEGR 451: Mechatronics/Bioinstrumentation
BEGR 474: Imaging in Biomedicine
BEGR 599: Thesis/Project (3 Credits)

Fourth Semester (Spring)

BEGR 599: Thesis/Project (3 Credits)
Elective
Elective

Suggested electives for Biomedical majors include:

- BEGR 452: Nanotechnology
- BEGR 477: Cellular Biophysics
- BEGR 408: BioMEMs
- BEGR 498: Biomechanics – Muscular-Skeleton Mechanics

Students may also elect to take courses from the Cell/Molecular track, in consultation with their advisor, for their elective credits.

Cell/Metabolic Engineering Program Plan

Master of Science in Bioengineering

First Semester (Fall)

BEGR 409: Introduction to Bioengineering
BEGR 411: Integrated Product Development
BEGR 430: Bioinformatics

Second Semester (Spring)

BEGR 424: Molecular Biology
BEGR 465: Biochemistry
BEGR 477: Cellular Biophysics

Third Semester (Fall)

BEGR 501: Bioengineering Experimentation and Analysis
BEGR 599: Thesis/Project (3 Credits)
Elective

Fourth Semester (Spring)

BEGR 502: Molecular and Cellular Bioengineering
BEGR 599: Thesis/Project (3 Credits)
Elective

Possible electives for Cell/Metabolic major include:

- BEGR 426: Immunology and Immunochemistry
- BEGR 427: Medical Microbiology
- BEGR 429: Virology
- BEGR 474: Imaging in Biomedicine

Students may also elect to take courses from the Biomedical track, in consultation with their advisor, for their elective credits.

Degree Requirements

All candidates for the Master of Science in Bioengineering degree must complete a program of thirty-six (36) credits.

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING (M.S.E.E.)

Master of Science in Electrical Engineering (M.S.E.E.)

Program Director: David R. Carey, Ph.D.

Courses are available days and evenings.

Admission Requirements

Applications are invited from individuals who possess a B.S. degree in Electrical Engineering from an accredited institution. Applicants not meeting the requirements may be provisionally admitted and will be required to take sufficient undergraduate courses to make up deficiencies.

To be considered for admission, the applicant must submit the following minimum requirements:

1. Submit to the Graduate Admissions Office a completed graduate application for admission with payment of appropriate application fee
2. Submit two letters of recommendation from previous academic faculty and/or from current or previous supervisors, if employed.
3. Demonstrate satisfactory performance as an undergraduate by providing a complete set of official undergraduate transcripts.
4. International students: Refer to page 10 for additional admissions requirements.

Degree Requirements

Thirty (30) credit hours are required for the M.S.E.E. degree. These include the following:

12 credits	EE 403, EE 405, EE-414 , and EE-460
18 credits	Students should choose either the thesis or the non-thesis option. In either case at least two courses (for 6 credits) must be chosen from the following: EE-442 , EE-445 , EE-465 , and EE-471 . Other courses may be chosen from graduate level courses in EE/CS and an approved course from the Business Administration program.

Non-thesis option: 3 credits of [EE-590](#) are required. Students should submit a well-documented report to the department.

Thesis option: Six credits of thesis ([EE-590](#)) are required. The thesis shall be defended in an open forum. Three faculty members constitute a Thesis Committee with the Thesis Advisor as Chair.

Students who opt to complete a thesis may select from posted research topics or proposed areas of interest of the faculty and submit a proposal of their thesis to the Department. Final decision of topic and advisor will be taken by the Department in accordance with Department guidelines. Ordinarily, these topics will touch on one or more of the following areas: Communication, Navigational Systems; Computers, Digital Systems;

Microelectronics; Microwaves and Antennas; Power, Control Systems; Software Engineering. Some of the highly specialized and state-of-the-art laboratories available for students include Communications, Thick-Film Processing, Microelectronics, Microwaves, Antennas, Machines and Controls, Digital Design.

Both full and part-time students are limited to a maximum of three thesis credits in any single semester.

The minimum acceptable grade point average is 3.0. (See Grade Regulations.)

Advanced standing or transfer credit is limited to six (6) graduate credits. Petitions should be submitted to the Engineering and Physics Division and should document minimum competency defined as relevant graduate course work at an accredited institution with an earned minimum grade of 3.0 (0-to-4 scale) or equivalent expertise.

Financial Aid

A limited number of assistantships are available for full-time students. Applicants should possess superior academic qualifications and provide good scores in the GRE (General and Engineering).

MASTER OF SCIENCE IN ENGINEERING MANAGEMENT

Master of Science in Engineering Management

Program Director: Robert R. Taylor, MBA

The Master of Science in Engineering Management is a 36 credit-hour program that integrates 9 credit hours of required MBA program content with 27 hours of graduate engineering and elective content. The program is committed to the successful development of the upward-bound technical talent in industry. Entering students enjoy a curricular breadth and flexibility unique to Wilkes University because of leadership development strengths in the Sidhu School of Business.

The program emphases include decision processes, systems modeling, uncertainty analysis and risk assessment. Graduates will learn to effectively address and communicate the growing complexities of organizational performance and decision processes as they prepare for leadership roles in technical staff and technology management such as project planning and execution, production flow, logistics, demand forecasting, and quality improvement. The program also prepares students for further academic endeavors that may lead to post-graduate or doctoral studies in Engineering Management, Industrial Engineering or other related disciplines

Admission Requirements

An ABET-accredited baccalaureate Engineering degree is preferred but not required. Applicants with other four-year degree preparations (e.g. BS or BA) may meet entrance requirements once the necessary foundation content is satisfied. Entry standards include the following:

1. Experience
Post-baccalaureate industrial/professional work experience preferred.
2. Application:
Submitted with payment of appropriate application fee. (International students: Refer to the International Students section of this bulletin for additional admission requirements).
3. Academic Preparation-Official Transcripts are Required:
 - Demonstrate satisfactory performance as an undergraduate as evidence with a complete set of official undergraduate transcripts to be submitted to the Graduate Admissions Office.
 - To be accepted on a regular basis, candidates for the degree must have obtained a cumulative GPA of at least 3.0. Prospective students with a GPA of less than 3.0 may be conditionally accepted into the program. To be reclassified to regular status, the conditionally accepted student must attain no less than a 3.0 for each of the first six credit hours of graduate coursework taken. Failure to maintain the minimum 3.0 in any course will result in dismissal of the conditionally accepted student.

Applicants not holding an ABET-accredited undergraduate or graduate engineering degree must demonstrate or accrue the following preparation prior to enrolling in EGM courses:

- Mathematics: 12 hours (calculus, differential equations and statistics, or approved equivalent)
- Engineering economy or equivalent; 3 hours
- Science (chemistry and/or physics): 12 hours of approved coursework
- Engineering: 12 hours of approved coursework

- Demonstrated ability with computer programming and/or numerical analysis techniques

1. Professional Recommendations
Applicants must submit two letters of professional recommendation.

Degree Requirements

The Masters of Science Degree in Engineering Management requires a minimum of thirty-six (36) credit hours consisting of twenty-seven (27) credits in CORE courses and nine (9) elective credit hours.

Required Courses

EGM 510, EGM 515, EGM 516, EGM 520, EGM 525, EGM 530, [MBA 501](#), MBA 505 and MBA 552.

Elective Options: Students have three options for distributing the remaining 9 hours of graduate elective credit:

1. Thesis option: 6 hrs thesis (EGM 590 & 591) plus 3 hrs approved elective coursework (EGM/EE/CSE/MBA).
2. Industry project option: 3 hrs project (EGM 580 & 581) plus 6 hrs approved elective coursework (EGM/EE/CSE/MBA).
3. 9 hours approved coursework distributed as follows: EGM/EE - 3 hrs; EGM/EE/CSE/MBA - 6 hrs.

MASTER OF SCIENCE IN MECHANICAL ENGINEERING (M.S.M.E.)

Program Director: Jamal A. Ghorieshi, Ph.D.

Admission Requirements

Applications are invited from individuals who possess a B.S. degree in Mechanical Engineering or close fields from an accredited institution. Applicants not meeting the requirements may be provisionally admitted and will be required to take sufficient undergraduate courses to make up deficiencies.

To be considered for admission, the applicant must submit the following minimum requirements:

- Submit to the Graduate Admissions Office a completed graduate application for admission with payment of appropriate application fee
- Submit two letters of recommendation from previous academic faculty and/or from current or previous supervisors, if employed.
- Demonstrate satisfactory performance as an undergraduate by providing a complete set of official undergraduate transcripts.
- International students: Refer to page 10 for additional admissions requirements.

Degree Requirements

The Master of Science in Mechanical Engineering program requires thirty (30) credits of graduate level course work. The program consists of 15 credits of mandatory core courses. Students have the option of a six-credit thesis or a three-credit project with an additional three-credit technical elective. Students may select 9/12 additional credits hours from the list of technical electives.

Core Courses

Applied Engineering Analysis ME 401; Product Development ME 411; Transport Phenomena ME 421; Solid Mechanics ME 436; Materials Science ME 442.

Thesis/Project Option:

Graduate students are strongly recommended to select the thesis option to complete their graduate course work. However, they may choose a three-credit hour project option.

First Semester
ME 401 – Applied Engineering Analysis ME 436 – Solid Mechanics
ME 411 – Product Development ME 442 – Materials Science
ME 427 – Transport Phenomena Technical Elective

Second Semester
ME 436 – Solid Mechanics
ME 442 – Material Science
Technical Elective

Third Semester

ME 501 – Graduate Education Continuum
Technical Elective
Technical Elective

Fourth Semester

ME 599 – Thesis OR Project
Technical Elective
Technical Elective

Technical Electives

Technical electives may be selected from the technical elective graduate course list. In addition, up to one graduate level course from any Engineering or Science field is transferable.

Non-thesis option: 3 credits of ME 599 are required. Students should submit a well-documented report to the department.

Thesis option: Six credits of thesis ME 599 are required. The thesis shall be defended in an open forum. Three faculty members constitute a Thesis Committee with the Thesis Advisor as Chair.

Students who opt to complete a thesis may select from posted research topics or proposed areas of interest of the faculty and submit a proposal of their thesis to the Department. Final decision of topic and advisor will be taken by the Department in accordance with Department guidelines. Ordinarily, these topics will touch on one or more of the following areas: structural Analysis, Thermal Sciences, Finite Element Method, Solid Mechanics, Dynamics, MEMS, control Systems; Robotics, Mechatronics, energy conversion.

Both full- and part-time students are limited to a maximum of three thesis credits in any single semester.

The minimum acceptable grade point average is 3.0. (See Grade Regulations)

Advanced standing or transfer credit is limited to three (3) graduate credits. Petitions should be submitted to the Engineering and Physics Division and should document minimum competency defined as relevant graduate course work at an accredited institution with an earned minimum grade of 3.0 (0-to-4 scale) or equivalent expertise.

Financial Aid

A limited number of assistantships are available for full-time students. Applicants should possess superior academic qualifications and provide good scores in the GRE (General and Engineering).

MATHEMATICS

Chairperson: Dr. Barbara A. Bracken

The courses of study are intended for:

1. Those with an undergraduate degree from a traditional mathematics program. For the degree in mathematics, a student who has met admission requirements can take up to half of the required 30 credits in computer science.
2. Current or prospective teachers of mathematics who wish to enhance their training in either educational methodology or in mathematics/computer science itself.
3. Those who plan to continue their studies beyond the master's level in mathematics.

Admission

To be considered for admission, the applicant must submit the following:

1. A completed graduate application for admission with payment of appropriate application fee
2. Two letters of recommendation from previous academic faculty and/or from current or previous supervisors, if employed.
3. A complete set of official undergraduate transcripts from all academic institutions previously attended.

Master of Science in Mathematics

Applicants are expected to have had undergraduate courses in each of the following three areas: linear algebra/matrix theory, advanced calculus or real variables, and abstract algebra. Students deficient in one or more of these areas may still be admitted into the program, but are required to make up all deficiencies early in their graduate studies.

Master of Science in Education

Admission requirements for the Department of Education are described under the header "Secondary Education" earlier in this bulletin.

MASTER OF SCIENCE IN EDUCATION

Requirements

Candidates for the degree of Master of Science in Education with a concentration in Secondary Education/Mathematics must complete thirty (30) credits of approved courses offered by the Department of Mathematics/Computer Science and the Department of Education. Of these thirty credits, eighteen (18) credits shall be in approved 400-level courses offered by the Department of Mathematics and Computer Science. Requirements for the Education component of the Master of Science degree in Education with a concentration in Secondary Education/Mathematics are listed under the Education section earlier in this bulletin.

MASTER OF SCIENCE IN MATHEMATICS

Candidates for the degree of Master of Science in Mathematics must complete thirty (30) credits of approved 400-level courses offered by the Department of Mathematics and Computer Science numbered 400 or above, with a minimum of six (6) credits completed in 500-level courses.

A thesis option is available whereby a candidate can write and defend a written thesis under the direction of a faculty advisor. At most, six of the required thirty credits may be earned through thesis work. Students electing a thesis option should consult the department chairperson for details regarding thesis-preparation guidelines.

NURSING

Dr. Deborah A. Zbegner, Associate Professor, Interim Dean of Nursing
Stark Learning Center, 245
570-408-4086
deborah.zbegner@wilkes.edu

Dr. Kathleen Hirthler, DNP, CRNP, FNP-BC, - Interim Director of Graduate Nursing
Stark Learning Center, 243
570-408-4092
kathleen.hirthler

The School of Nursing Faculty reserves the right to revise the Graduate Nursing Program requirements and policies as deemed necessary at any time to prepare students for new and emerging roles in nursing.

ADULT-GERONTOLOGY PRIMARY CARE NURSE PRACTITIONER

Nurse Practitioner Student Learning Outcomes

Students in the Nurse Practitioner Program at Wilkes University will:

1. Synthesize theoretical, scientific, and clinical knowledge in providing comprehensive, evidence-based care.
2. Perform comprehensive health history and physical examination to diagnose health conditions involving critical analysis, differential diagnosis, and data interpretation.
3. Assume leadership roles in collaboration with other health professionals to achieve optimum patient health.
4. Integrate health care policy as it impacts the decision-making ability to provide quality patient care.
5. Negotiate healthcare delivery systems to promote quality health outcomes for individuals, communities, and organizational systems.
6. Coordinate care for patients with complex conditions through referrals and collaboration.
7. Participate in life-long learning through higher education, continuing education, certification and evaluation.

Adult-Gerontology Primary Care Nurse Practitioner (16 Credits)

NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 553	Adult Health Perspectives of Culturally Diverse, Rural, and Underserved Populations	2 credits
NSG 554	Advanced Practice in Adult-Gerontology I	3 credits
NSG 555	Advanced Practice in Adult-Gerontology II	3 credits
NSG 506	Advanced Practice in Adult-Gerontology Clinical I	3 credits
NSG 515	Advanced Practice in Adult-Gerontology Clinical II	3 credits

Psychiatric / Mental Health Clinical Nurse Practitioner (18 Credits)

NSG 526	Clinical Modalities in Advanced Psychiatric/ Mental Health Nursing Practice	3 credits
NSG 527	Psychopathology, Theories, and Advanced Clinical Modalities	3 credits
NSG 535	Advanced Practice in Psychiatric/Mental Health Nursing I	3 credits
NSG 536	Advanced Practice in Psychiatric/Mental Health Nursing II	3 credits
NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 551	Mental Health Perspectives of Culturally Diverse Rural, and Underserved Populations	2 credits
NSG 552	Psychopharmacology	2 credits

DOCTOR OF NURSING PRACTICE (DNP)

Doctor of Nursing Practice (DNP)

Purpose

The program leading to the Doctor of Nursing Practice at Wilkes University is linked to the mission statement of the University and to the mission of the Department of Nursing as well as, AACN's definition of advanced nursing practice. The goal of the doctoral program focuses on two primary elements: applied research and clinical practice. These two elements are embedded in courses throughout the program with opportunities to apply acquired knowledge and skills to problems and practice in the students' respective fields for the betterment of health care agencies and the people they serve.

The online program is designed for self-motivated students adept at using computers. Student computers must meet system requirements of the university.

DNP Program Outcomes

The DNP Program at Wilkes University prepares students to:

1. Apply scientific inquiry and information technology to become leaders in advancing nursing practice.
2. Demonstrate application of scholarship and research for solving the nation's complex health problems.
3. Translate evidence based research into clinical practice.
4. Integrate and disseminate knowledge for improving patient and population health outcomes.
5. Engage in health care policy.

DNP Student Learning Outcomes

Students in the DNP Program at Wilkes University will:

1. Synthesize nursing science to manage complex health problems and improve health outcomes in advanced nursing practice.
2. Develop and evaluate knowledge and skills in organizational and systems leadership to improve health care practice and policy.
3. Critically analyze information technology, research methodology, quality improvement methodology to implement the best evidence based practice.
4. Design and analyze patient care technology and information systems to enhance quality of health care delivery.
5. Evaluate health care policies to improve health care policy outcomes at the local, state, and national levels.
6. Employ specialized knowledge and leadership skills when collaborating and leading other interprofessional health care teams in complex health care delivery systems.
7. Analyze health disparities, cultural diversity, environmental and societal needs in the care of individuals, aggregates, and populations.
8. Develop, demonstrate, and sustain advanced levels of clinical judgment, systems thinking and accountability to implement and evaluate evidence based care disparities, cultural diversity, environmental and societal needs in the care of individuals, aggregates, and populations.

Admission Requirements

- Bachelor of Science in Nursing with a GPA of 3.0 or higher on a 4.0 scale
- Master of Science in Nursing with a GPA of 3.5 or higher on a 4.0 scale
- Advanced Practice Nurses (Nurse Practitioners, Clinical Nurse Specialists, Nurse Anesthetists, Nurse Midwives) must present evidence of:
 - Completion of graduate courses titled Advanced Pathophysiology, Advanced Pharmacology, and Advanced Health Assessment
 - Proof of completion of a minimum of 500 supervised clinical practice hours during advanced practice nursing master's or post-master's program
 - Proof of national advanced practice certification (preferred)
 - Official transcripts from all post-secondary education experiences (International students must submit all official transcripts and other requirements to <http://www.wes.org> and pay the appropriate fees. World Education Services will forward documents to Wilkes University.)
- Three recommendation forms submitted from graduate-prepared nurses or faculty who can attest to the applicant's potential for advanced-practice studies and for leadership
- A maximum 3 page document focusing on a Scholarly Project topic
- A professional portfolio submitted by the applicant reflecting career and scholarship achievements to date
- Documentation of current RN state licensure and current national certification for advanced practice nursing
- For applicants whose native language is not English and who hail from non-English speaking countries, submission of a minimum Test of English as a Foreign Language (TOEFL) score of 550 or International English Language Testing System (IELTS) score of 6.0 earned within two years prior to application
- For those applicants who meet the above requirements, a successfully completed phone interview

The Curriculum

Students in the BS-DNP program will complete courses in the Graduate Nursing Core and a specialty concentration, take a stop out, receive a Master of Science with Major in Nursing degree allowing them to sit for the appropriate national certification exam, and begin clinical practice. Students will then resume enrollment into the DNP curriculum. This allows students to gain clinical expertise in advancing the nursing practice role, while simultaneously completing requirements for DNP courses, which includes the Scholarly Project in NSG 608 a and b over 2 semesters.

Graduate Nursing Core (For RN's entering with a Bachelor's Degree) (21 Credits)*

NSG 500	Advanced Health Assessment	3 credits
NSG 501	Theoretical Foundations of Nursing Science	3 credits
NSG-502	Advanced Nursing Research	3 credits
NSG-504	Advanced Role Development in Nursing	3 credits
NSG-505	Health Care Policy and Models of Care	3 credits
NSG-530	Advanced Pathophysiology	3 credits
NSG-533	Advanced Pharmacology	3 credits

Concentrations

NURSE PRACTITIONER STUDENT LEARNING OUTCOMES

Students in the Nurse Practitioner Program at Wilkes University will:

1. Synthesize theoretical, scientific, and clinical knowledge in providing comprehensive, evidence-based care.
2. Perform comprehensive health history and physical examination to diagnose health conditions involving critical analysis, differential diagnosis, and data interpretation.
3. Assume leadership roles in collaboration with other health professionals to achieve optimum patient health.
4. Integrate health care policy as it impacts the decision-making ability to provide quality patient care.
5. Negotiate healthcare delivery systems to promote quality health outcomes for individuals, communities, and organizational systems.
6. Coordinate care for patients with complex conditions through referrals and collaboration.
7. Participate in life-long learning through higher education, continuing education, certification and evaluation.

Adult-Gerontology Primary Care Nurse Practitioner (16 Credits)

NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 553	Adult Health Perspectives of Culturally Diverse, Rural, and Underserved Populations	2 credits
NSG 554	Advanced Practice in Adult-Gerontology I	3 credits
NSG 555	Advanced Practice in Adult-Gerontology II	3 credits
NSG 506	Advanced Practice in Adult-Gerontology Clinical I	3 credits
NSG 515	Advanced Practice in Adult-Gerontology Clinical II	3 credits

Psychiatric / Mental Health Clinical Nurse Practitioner (18 Credits)

NSG 526	Clinical Modalities in Advanced Psychiatric Mental Health Nursing Practice	3 credits
NSG 527	Psychopathology, Theories, and Advanced Clinical Modalities	3 credits
NSG 535	Advanced Practice in Psychiatric Mental Health Nursing I	3 credits
NSG 536	Advanced Practice in Psychiatric Mental Health Nursing II	3 credits
NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 551	Mental Health Perspectives of Culturally Diverse Rural, and Underserved Populations	2 credits
NSG 552	Psychopharmacology	2 credits

DNP Core (MS-DNP and BS-DNP Students) (30 Credits)

NSG 600	Nursing Informatics	3 credits
NSG 601	Biostatistics	3 credits
NSG 602	Ethical Principles for Advanced Nursing Practice	3 credits
NSG 603	Application of Nursing Research	3 credits
NSG 604	Epidemiology and Environmental Health	3 credits
NSG 605	Collaboration in Health Care Delivery	3 credits
NSG 606	Diversity and Social Issues	3 credits
NSG 607	Leadership in Advanced Nursing Practice	3 credits
NSG 608a	Scholarly Project	3 credits
NSG 608b	Scholarly Project	3 credits

**NSG 608 a and b are completed over the last 2 semesters in the DNP program.*

State Requirements for Online/Distance Education

Authorization requirements for online/distance education vary by state. Wilkes University is currently in the process of pursuing individual state authorizations and approvals, as necessary, for its online course delivery. Wilkes is not required to have state authorization in all 50 states and may choose not to enroll students from states where we are not authorized. Any questions related to the university's approval to offer graduate nursing programs in a specific state should be forwarded to our Graduate Admissions team.

Please note: Since online/distance education requirements vary by state, online students who change their residency to a state in which Wilkes University is not approved to operate may be unable to remain enrolled at Wilkes University or may have their academic progression delayed until proper approvals may be obtained.

Degree Requirements

MS-DNP students who are advanced practice nurses or nurse executives are required to complete the thirty (30) credit DNP core. NS-DNP students who are not advanced practice nurses or nurse executives are evaluated individually and will require an estimated forty-four to fifty-seven (44-57) credits for completion. BS-DNP level candidates must complete sixty-five to seventy (65-70) credits.

Length of DNP Program

Each DNP program academic unit runs for a 12 week period. Courses are offered sequentially with two courses taught in the fall, two in the spring, and one in the summer.

Continuous enrollment is an expectation of the program. The total time taken to complete the doctoral degree may not exceed 6 years for MS-DNP students and 8 years for BS-DNP students.

Residency Requirements

An on-site residency is required for nurse practitioner students only, who are enrolled in NSG 500, Advanced Health Assessment, in order to demonstrate advanced physical assessment skills. In addition, nurse practitioner students in the following clinical courses may be required to complete an on-site residency, based upon the location of the clinical practice site. During residency, direct supervision and evaluation of the student will be completed by nurse practitioner clinical faculty at their designated clinical practice sites. Each course syllabus dictates the terms of the specific course residency.

- [NSG 506](#) – Advanced Practice in Adult-Gerontology Clinical I
- [NSG 515](#) – Advanced Practice in Adult-Gerontology Clinical II
- [NSG 535](#) – Advanced Practice in Psychiatric/Mental Health Nursing I
- [NSG 536](#) – Advanced Practice in Psychiatric/Mental Health Nursing II

Clinical Requirements

The student is responsible for arranging all clinical experiences. A preceptor from a practice setting that promotes attainment of course outcomes is identified by the student. The preceptor must have a graduate degree in the appropriate healthcare discipline. Further details of clinical requirements for each concentration area are provided to students in the SCHOOL OF NURSING GRADUATE PROGRAM STUDENT HANDBOOK and in course syllabi.

The DNP program requires completion of a total of 1000 hours of practice experience beyond the bachelor's level of nursing education. The hours will be conducted in the practicum and scholarly project courses. Advanced practice nursing students (CNS, NP, Midwife, CRNA) and those students who have completed practicum hours to satisfy a nurse executive/management curriculum requirement may be credited with hours from their master's program in nursing. Validation of those hours is required and may be provided by official transcript or a letter verifying the number of practicum hours.

Students in the BS-DNP program complete clinical hours according to the concentration chosen. These clinical hours can be applied towards the 1000 clinical hours required for completion of the DNP.

Scholarly Project

Students in the DNP program are required to complete a Scholarly Project that demonstrates mastery of theoretical content through analysis and synthesis. Scholarly Project oversight is provided by the Scholarly Project Chairperson. The final project is presented to the Scholarly Project Committee via web cam or onsite at the university. Students who are unable to complete their Scholarly Project in the required timeframe must continue to register for 1 billable credit hour per each Fall and Spring semester.

The DNP Scholarly Project validates that candidates have achieved competency in The Essentials of Doctoral Education for Advanced Nursing Practice through the application of research and clinical implementation. The Scholarly Project is 6 credits and completion is over the last 2 semesters of the program.

MASTER OF SCIENCE WITH MAJOR IN NURSING

Master of Science with Major in Nursing

Purpose

The purpose of the Master of Science with Major in Nursing at Wilkes University is to prepare the Nurse Practitioner, Nurse Executive, and Nurse Educator for advancing nursing practice. This multidisciplinary program provides a foundation for further study in nursing and continued professional development. Graduates are eligible for national certification. Each student's program of study is planned to meet individualized personal goals and professional requirements.

Master of Science With Major in Nursing Program Outcomes

The Master of Science with Major in Nursing program at Wilkes University prepares students to:

1. Engage in lifelong learning in a constantly evolving and multicultural world.
2. Demonstrate competence in the development of scientific inquiry relevant to clinical practice, administration, or education.
3. Utilize leadership strategies that foster improvement of patient and population health.
4. Advance nursing practice by translating evidence in a variety of roles and areas of practice.
5. Improve healthcare outcomes through interprofessional collaboration.

Master of Science With Major in Nursing Student Learning Outcomes

Students in the Master of Science with Major in Nursing program at Wilkes University will:

1. Synthesize advanced knowledge of nursing and related disciplines for the development of advanced nursing practice in the roles of the Nurse Practitioner, Nurse Executive, and Nurse Educator.
2. Develop expertise in the Nurse Practitioner, Nurse Executive, and Nurse Educator role to advance nursing practice.
3. Develop skills and abilities to assume leadership roles in advanced nursing practice.
4. Evaluate nursing research for its applicability to advance nursing practice.
5. Evaluate applicable knowledge and concepts in nursing to deal with the complexities of a dynamic society.
6. Participate in lifelong learning as a part of advancing nursing practice.

Admission Requirements

- A baccalaureate nursing degree with a GPA of 3.0 or higher on a 4.0 scale
- Licensure as a Registered Nurse
- A completed admission application
- One year of clinical experience
- Official transcripts from all schools attended

The Curriculum

Graduate Nursing Core (24 Credits)

NSG 500	Advanced Health Assessment	3 credits
NSG 501	Theoretical Foundations of Nursing Science	3 credits
NSG 502	Advanced Nursing Research	3 credits
NSG 504	Advanced Role Development in Nursing	3 credits
NSG 505	Health Care Policy and Models of Care	3 credits
NSG 530	Advanced Pathophysiology	3 credits
NSG 533	Advanced Pharmacology	3 credits
NSG 590*	Scholarly Review	3 credits

**Students in the BS-DNP and Post Graduate Certificate Programs have an option to complete (1) credit of national certification preparation.*

Concentrations

Nurse Practitioner Student learning outcomes

Students in the Nurse Practitioner program at Wilkes University will:

1. Synthesize theoretical, scientific, and clinical knowledge in providing comprehensive, evidence-based care.
2. Perform comprehensive health history and physical examination to diagnose health conditions involving critical analysis, differential diagnosis, and data interpretation.
3. Assume leadership roles in collaboration with other health professionals to achieve optimum patient health.
4. Integrate health care policy as it impacts the decision-making ability to provide quality patient care.
5. Negotiate healthcare delivery systems to promote quality health outcomes for individuals, communities, and organizational systems.
6. Coordinate care for patients with complex conditions through referrals and collaboration.
7. Participate in life-long learning through higher education, continuing education, certification and evaluation.

Adult - Gerontology Primary Care Nurse Practitioner (16 Credits)

NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 553	Adult Health Perspectives of Culturally Diverse, Rural, and Underserved Populations	2 credits
NSG 554	Advanced Practice in Adult-Gerontology I	3 credits
NSG 555	Advanced Practice in Adult-Gerontology II	3 credits
NSG 506	Advanced Practice in Adult-Gerontology Clinical I	3 credits
NSG 515	Advanced Practice in Adult-Gerontology Clinical II	3 credits

Psychiatric/Mental Health Nurse Practitioner (18 Credits)

NSG 526	Clinical Modalities in Advanced Psychiatric Mental Health Nursing Practice	3 credits
NSG 527	Psychopathology, Theories, and Advanced Modalities	3 credits
NSG 535	Advanced Practice in Psychiatric/Mental Health Nursing I	3 credits
NSG 536	Advanced Practice in Psychiatric/Mental Health Nursing II	3 credits
NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 551	Mental Health Perspectives of Culturally Diverse Rural, and Underserved Populations	2 credits
NSG 552	Psychopharmacology	2 credits

NURSE EXECUTIVE STUDENT LEARNING OUTCOMES

Students in the Nurse Executive program at Wilkes University will:

1. Examine innovations for leadership and management to meet the challenges in delivering quality health care.
2. Critically analyze the challenges and issues facing nurse executives for maintaining healthcare workforces.
3. Discuss the role of the nurse executive as a leader in advancing nursing practice.

4. Apply evidence based practice as an organizational leader in redesigning healthcare delivery systems.

Nurse Executive (15 Credits)*

*Theory courses are 8 weeks and practicum courses are 16 weeks in length.

NSG 560	Healthcare Operations for the Nurse Executive	3 credits
NSG 561	Organizational Leadership for the Nurse Executive	3 credits
NSG 562	Advanced Leadership Topics for the Nurse Executive	3 credits
NSG 563	Nurse Executive Practicum I	3 credits
NSG 564	Nurse Executive Practicum II	3 credits

NURSING EDUCATION STUDENT LEARNING OUTCOMES

Students in the Nursing Education program at Wilkes University will:

1. Analyze theoretical and evidence-based research specific to nursing education.
2. Develop expertise in education assessment, teaching/learning strategies, evaluation and testing.
3. Design a curriculum that addresses a dynamic complex nursing environment.
4. Demonstrate leadership abilities through classroom and clinical teaching in a variety of community agencies.

Nursing Education (15 Credits)*

*All courses are 8 weeks in length.

NSG 540	The Nursing Curriculum: Development and Implementation	3 credits
NSG 541	Teaching Methodologies and Strategies in Nursing	3 credits
NSG 542	Evaluation in Nursing Education	3 credits
NSG 544	Classroom Practicum in Nursing Education	3 credits
NSG 545	Clinical Practicum in Nursing Education	3 credits

State Requirements for Online/Distance Education

Authorization requirements for online/distance education vary by state. Wilkes University is currently in the process of pursuing individual state authorizations and approvals, as necessary, for its online course delivery. Wilkes is not required to have state authorization in all 50 states and may choose not to enroll students from states where we are not authorized. Any questions related to the university's approval to offer graduate

Master of Science with Major in Nursing

nursing programs in a specific state should be forwarded to our Graduate Admissions team.

Note: Since online/distance education requirements vary by state, online students who change their residency to a state in which Wilkes University is not approved to operate may be unable to remain enrolled at Wilkes University or may have their academic progression delayed until proper approvals may be obtained.

Length of Program

The total number of credits to complete the Master of Science with Major in Nursing program varies depending on the chosen program concentration. See the individual program descriptions for the specific course credit requirements for each graduate nursing concentration.

Courses for the Nurse Practitioner program are 12 weeks in length. The Nurse Executive sequence is 8 week theory courses and 16 week practicum courses. The Nursing Education sequence is 8 week courses. Students enrolled in the nurse executive and nursing education concentration are unable to take 2 courses concurrently and must take courses according to their graduation plan.

RESIDENCY REQUIREMENTS

An on-site residency is required for nurse practitioner students only, who are enrolled in NSG 500, Advanced Health Assessment, in order to demonstrate advanced physical assessment skills. In addition, nurse practitioner students in the following clinical courses may be required to complete an on-site residency, based upon the location of the clinical practice site. During residency, direct supervision and evaluation of the student will be completed by nurse practitioner clinical faculty at their designated clinical practice sites. Each course syllabus dictates the terms of the specific course residency.

- NSG 506 – Advanced Practice in Adult-Gerontology Clinical I
- NSG 515 – Advanced Practice in Adult-Gerontology Clinical II
- NSG 535 – Advanced Practice in Psychiatric/Mental Health Nursing I
- NSG 536 – Advanced Practice in Psychiatric/Mental Health Nursing II

Clinical Requirements

The student is responsible for arranging all clinical experiences. A preceptor from a practice setting that promotes attainment of course objectives is identified by the student. The preceptor must have a graduate degree in the appropriate healthcare discipline. Further details of clinical requirements for each concentration area are provided to students in the SCHOOL OF NURSING GRADUATE PROGRAM STUDENT HANDBOOK and in course syllabi.

RN-MS Program

Purpose

This accelerated program is designed for the experienced, practicing registered nurse who plans to continue nursing studies through the master's level and does not hold a baccalaureate degree. Adjustments of the undergraduate requirements permit rapid progress into the graduate level. The curriculum for the Master of Science with Major in Nursing program remains intact and prepares the registered nurse for advancing nursing practice. Program plans are individualized for each student. The total time to completion of the program is dependent on the number of transfer credits, as well as the number of credits taken in any semester.

Regular admission to Wilkes University is necessary and will include evaluation of transfer credits.

Admission Requirements

To be considered for admission, the applicant must successfully complete the following minimum requirements:

- A nursing degree with a GPA of 3.0 or higher on a 4.0 scale
- Licensure as a Registered Nurse
- A completed admission application
- One year of clinical experience
- Official transcripts from all schools attended

State Requirements for Online/Distance Education

Authorization requirements for online/distance education vary by state. Wilkes University is currently in the process of pursuing individual state authorizations and approvals, as necessary, for its online course delivery. Wilkes is not required to have state authorization in all 50 states and may choose not to enroll students from states where we are not authorized. Any questions related to the university's approval to offer graduate nursing programs in a specific state should be forwarded to our Graduate Admissions team.

Please note: Since online/distance education requirements vary by state, online students who change their residency to a state in which Wilkes University is not approved to operate may be unable to remain enrolled at Wilkes University or may have their academic progression delayed until proper approvals may be obtained.

Degree Requirements

The total number of credits to complete the RN to MS program varies depending on the courses completed prior to admission. A program plan will be designed for you upon admission.

NURSE EXECUTIVE

NURSE EXECUTIVE STUDENT

LEARNING OUTCOMES

Students in the Nurse Executive program at Wilkes University will:

1. Examine innovations for leadership and management to meet the challenges in delivering quality health care.
2. Critically analyze the challenges and issues facing nurse executives for maintaining healthcare workforces.
3. Discuss the role of the nurse executive as a leader in advancing nursing practice.
4. Apply evidence based practice as an organizational leader in redesigning healthcare delivery systems.

Nurse Executive (15 Credits)

NSG 560	Healthcare Operations for the Nurse Executive	3 credits
NSG 561	Organizational Leadership for the Nurse Executive	3 credits
NSG 562	Advanced Leadership Topics for the Nurse Executive	3 credits
NSG 563	Nurse Executive Practicum I	3 credits
NSG 564	Nurse Executive Practicum II	3 credits

State Requirements for Online/Distance Education

Authorization requirements for online/distance education vary by state. Wilkes University is currently in the process of pursuing individual state authorizations and approvals, as necessary, for its online course delivery. Wilkes is not required to have state authorization in all 50 states and may choose not to enroll students from states where we are not authorized. Any questions related to the university's approval to offer graduate nursing programs in a specific state should be forwarded to our Graduate Admissions team.

Note: Since online/distance education requirements vary by state, online students who change their residency to a state in which Wilkes University is not approved to operate may be unable to remain enrolled at Wilkes University or may have their academic progression delayed until proper approvals may be obtained.

NURSING EDUCATION

Purpose

This program is designed for professional nurses who have earned a Master's or Doctoral Degree in Nursing and seek further education in advanced nursing practice. Concentrations offered are the Adult-Gerontology Primary Care and Psychiatric/ Mental Health Nurse Practitioner; Adult-Gerontology and Psychiatric/ Mental Health Clinical Nurse Specialist; Nurse Executive; and Nursing Education. No degree will be awarded.

Admission Requirements

- Master's or Doctoral degree with a major in nursing from a program approved by either The National League for Nursing (NLN) or The Commission on Collegiate Nursing Education (CCNE.)
- GPA 3.0 on a 4.0 scale
- Current Registered nurse license.
- Two years of recent professional experience in nursing
- Personal interview
- Completed application for admission to graduate Studies, including academic transcripts
- Two letters of reference from health care professionals attesting to the candidate's clinical expertise
- Statement of professional goals

NURSING EDUCATION STUDENT LEARNING OUTCOMES

Students in the Nursing Education program at Wilkes University will:

1. Analyze theoretical and evidence-based research specific to nursing education.
2. Develop expertise in education assessment, teaching/learning strategies, evaluation and testing.
3. Design a curriculum that addresses a dynamic complex nursing environment.
4. Demonstrate leadership abilities through classroom and clinical teaching in a variety of community agencies.

Nursing Education (24 Credits)

NSG 500	Advanced Health Assessment	3 credits
NSG-530	Pathophysiology for Advanced Practice	3 credits
NSG-533	Pharmacotherapeutics for Advanced Practice Nursing	3 credits
NSG-540	The Nursing Curriculum: Development and Implementation	3 credits
NSG-541	Teaching Methodologies and Strategies in Nursing	3 credits
NSG-542	Evaluation in Nursing Education	3 credits
NSG-544	Clinical Practice in Education I	3 credits
NSG-545	Clinical Practice in Education II	3 credits

Students must take N 533 or have completed a 3-credit advanced pharmacotherapeutics course within the past five years.

Required number of credits for each concentration is at the discretion of the Director of Graduate Nursing Programs.

RESIDENCY REQUIREMENTS

An on-site residency is required for students enrolled in NSG500, Advanced Health Assessment, in order to demonstrate advanced physical assessment skills. In addition, students in the following clinical courses are required to complete an on-site

residency. During residency, direct supervision and evaluation of the student will be completed by nurse practitioner faculty at their designated clinical practice sites.

- NSG 506 – Advanced Practice in Adult-Gerontology Clinical I
- NSG 515 – Advanced Practice in Adult-Gerontology Clinical II
- NSG 535 – Advanced Practice in Psychiatric Mental Health Nursing I
- NSG 536 – Advanced Practice in Psychiatric Mental Health Nursing II

Clinical Requirements

The student is responsible for arranging all clinical experiences. A preceptor from a practice setting that promotes attainment of course objectives is identified by the student. The preceptor must have a graduate degree in the appropriate healthcare discipline. Approval of clinical preceptors is granted by Graduate Nursing faculty after completion of a comprehensive vetting process.

It is the student's responsibility to meet any agency requirements related to the practicum experience that exceed those required by the School of Nursing (OSHA, HIPAA, training). Oversight of compliance occurs prior to the beginning of the clinical practice experience. Students are required to utilize the web based program for managing the clinical requirements. Students begin completion of clinical hours after approval is granted by Graduate Nursing faculty. Oversight of the practice experience is conducted by the Graduate Nursing clinical faculty.

State Requirements for Online/Distance Education

Authorization requirements for online/distance education vary by state. Wilkes University is currently in the process of pursuing individual state authorizations and approvals, as necessary, for its online course delivery. Wilkes is not required to have state authorization in all 50 states and may choose not to enroll students from states where we are not authorized. Any questions related to the university's approval to offer graduate nursing programs in a specific state should be forwarded to our Graduate Admissions team.

Note: Since online/distance education requirements vary by state, online students who change their residency to a state in which Wilkes University is not approved to operate may be unable to remain enrolled at Wilkes University or may have their academic progression delayed until proper approvals may be obtained.

POST-GRADUATE CERTIFICATE

Post Graduate Certificate Programs

Purpose

This program is designed for professional nurses who have earned a master's or doctoral degree in Nursing and seek further education in advanced nursing practice. Concentrations offered are the Adult-Gerontology Primary Care and Psychiatric/ Mental Health Nurse Practitioner. No degree will be awarded.

Required number of credits for each concentration is at the discretion of the Director of the Graduate Nursing Program. This will be evaluated individually for each student.

Students must take NSG 533 if they have not completed a 3-credit advanced pharmacology course within the past 5 years.

Admission Requirements

- A master's degree in nursing with a GPA of 3.0 or higher on a 4.0 scale
- Licensure as a Registered Nurse
- A completed admission application
- One year of clinical experience
- Official transcripts from all schools attended

The Curriculum

CONCENTRATIONS

Nurse Practitioner Student learning outcomes

Students in the Nurse Practitioner program at Wilkes University will:

1. Synthesize theoretical, scientific, and clinical knowledge in providing comprehensive, evidence-based care.
2. Perform comprehensive health history and physical examination to diagnose health conditions involving critical analysis, differential diagnosis, and data interpretation.
3. Assume leadership roles in collaboration with other health professionals to achieve optimum patient health.
4. Integrate health care policy as it impacts the decision-making ability to provide quality patient care.
5. Negotiate healthcare delivery systems to promote quality health outcomes for individuals, communities, and organizational systems.
6. Coordinate care for patients with complex conditions through referrals and collaboration.
7. Participate in life-long learning through higher education, continuing education, certification and evaluation.

Adult –Gerontology Primary Care Nurse Practitioner (25 Credits)

NSG 500	Advanced Health Assessment	3 credits
NSG 530	Advanced Pathophysiology	3 credits
NSG 533	Advanced Pharmacology	3 credits
NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 553	Adult Health Perspectives of Culturally Diverse, Rural, and Underserved Populations	2 credits
NSG 554	Advanced Practice in Adult-Gerontology I	3 credits
NSG 555	Advanced Practice in Adult-Gerontology II	3 credits
NSG 506	Advanced Practice in Adult-Gerontology Clinical I	3 credits*
NSG 515	Advanced Practice in Adult-Gerontology Clinical II	3 credits*

Psychiatric/Mental Health Nurse Practitioner (27 Credits)

NSG 500	Advanced Health Assessment	3 credits
NSG 530	Advanced Pathophysiology	3 credits
NSG 533	Advanced Pharmacology	3 credits
NSG 526	Clinical Modalities in Advanced Psychiatric/Mental Health Nursing Practice	3 credits
NSG 527	Psychopathology, Theories, and Advanced Clinical Modalities	3 credits
NSG 535	Advanced Practice in Psychiatric/Mental Health Nursing I	3 credits
NSG 536	Advanced Practice in Psychiatric/Mental Health Nursing II	3 credits
NSG 550	Diagnostic Reasoning for Nurse Practitioners	2 credits
NSG 551	Mental Health Perspectives of Culturally Diverse, Rural, and Underserved Populations	2 credits
NSG 552	Psychopharmacology	2 credits

State Requirements for Online/Distance Education

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Please note: Since online/distance education requirements vary by state, online students who change their residency to a state in which Wilkes University is not approved to operate may be unable to remain enrolled at Wilkes University or may have their academic progression delayed until proper approvals may be obtained.

RESIDENCY REQUIREMENTS

An on-site residency is required for nurse practitioner students only, who are enrolled in NSG 500, Advanced Health Assessment, in order to demonstrate advanced physical assessment skills. In addition, nurse practitioner students in the following clinical courses may be required to complete an on-site residency, based upon the location of the clinical practice site. During residency, direct supervision and evaluation of the student will be completed by nurse practitioner clinical faculty at their

designated clinical practice sites. Each course syllabus dictates the terms of the specific course residency.

- NSG 506 – Advanced Practice in Adult-Gerontology Clinical I
- NSG 515 – Advanced Practice in Adult-Gerontology Clinical II
- NSG 535 – Advanced Practice in Psychiatric Mental Health Nursing I
- NSG 536 – Advanced Practice in Psychiatric Mental Health Nursing II

Clinical Requirements

The student is responsible for arranging all clinical experiences. A preceptor from a practice setting that promotes attainment of course objectives is identified by the student. The preceptor must have a graduate degree in the appropriate healthcare discipline. Further details of clinical requirements for each concentration area are provided to students in the SCHOOL OF NURSING GRADUATE PROGRAM STUDENT HANDBOOK and in course syllabi.

RN-MS PROGRAM

RN-MS Program

Purpose

This accelerated program is designed for the experienced, practicing registered nurse who plans to continue nursing studies through the master's level and does not hold a baccalaureate degree. Adjustments of the undergraduate requirements permit rapid progress into the graduate level. The curriculum for the Master of Science with Major in Nursing program remains intact and prepares the registered nurse for advancing nursing practice. Program plans are individualized for each student. The total time to completion of the program is dependent on the number of transfer credits, as well as the number of credits taken in any semester.

Regular admission to Wilkes University is necessary and will include evaluation of transfer credits.

Admission Requirements

- A nursing degree with a GPA of 3.0 or higher on a 4.0 scale
- Licensure as a Registered Nurse.
- A completed admission application
- One year of clinical experience
- Official transcripts from all schools attended

State Requirements for Online/Distance Education

Authorization requirements for online/distance education vary by state. Wilkes University is currently in the process of pursuing individual state authorizations and approvals, as necessary, for its online course delivery. Wilkes is not required to have state authorization in all 50 states and may choose not to enroll students from states where we are not authorized. Any questions related to the university's approval to offer graduate nursing programs in a specific state should be forwarded to our Graduate Admissions team.

Please note: Since online/distance education requirements vary by state, online students who change their residency to a state in which Wilkes University is not approved to operate may be unable to remain enrolled at Wilkes University or may have their academic progression delayed until proper approvals may be obtained.

Degree Requirements

The total number of credits to complete the RN to MS program varies depending on the courses completed prior to admission. A program plan will be designed for you upon admission.

PHARMACY

Dean: Dr. Bernard W. Graham

Assistant Deans: Dr. Harvey Jacobs & Dr. Adam Welch

Chairperson, Department of Pharmacy Practice: Dr. Edward F. Foote

Chairperson, Department of Pharmaceutical Sciences: Dr. Zbigniew Wiczak

Faculty

Professors: Foote, Graham, Kibbe, Wiczak

Associate Professors: Bohan, Bolesta, J. Ference, Jacobs, Kristeller, Longyhore, Malinowski, McCune, McManus, Olenak, Roke-Thomas, Trombetta, VanWert, Welch, Wright

Assistant Professors: Bommareddy, K. Ference, Franco, Hoot, Manning, Metka,

Instructors: Billek, Holt-Macey,

The School of Pharmacy offers a program of professional study leading to the Doctor of Pharmacy (Pharm.D.) degree. The purpose of the program is to prepare graduates for successful pharmacy practice in the health care environment of the twenty-first century. The U.S. health care system has been undergoing rapid, even dramatic, change. This transformation is expected by most observers to continue for some time. Those individuals and organizations responsible for the delivery of pharmaceutical care have not been and will not be sheltered from the forces of change. It becomes necessary, therefore, to provide new practitioners with the necessary knowledge base and skills required in a transformed health care system.

With the rapid transformation of health care delivery, a strong foundation in the basic sciences (e.g., pharmaceuticals, pharmacology, medicinal chemistry, anatomy and physiology) remains essential while clinical knowledge (e.g., therapeutics, pharmacokinetics, pathophysiology) and skills (e.g. physical assessment, patient counseling, clinical decision-making) become even more important. Successful practice will demand an improved understanding of the social sciences (e.g., psychology, sociology, economics, health policy, management). Most importantly, the future pharmacy practitioner must have outstanding interpersonal skills. Among these are the abilities to communicate effectively and to function in a team environment.

Our Mission

Our mission is to develop pharmacists who will provide high quality health care and to make meaningful contributions to the science and practice of pharmacy.

Our Vision

We will be recognized as an exceptional pharmacy program through innovative education, contemporary practice, and valuable scientific contributions.

Our Values

Teamwork, Professionalism, Lifelong Learning, Cultural Competency, Personalized Attention, Community Engagement

Accreditation

Wilkes University's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60603; 312-664-3575; FAX 312-664-4652; www.acpe-accredit.org.

Professional Program

The Professional Program is four years and leads to the Doctor of Pharmacy (Pharm.D.) degree after successful completion of a pre-professional program of at least two years. Graduates of the program are eligible for state examination to become licensed pharmacists after completing appropriate internship hours. The four years of education consist of three years of in-class (i.e., lecture, laboratory, discussion group) and one year of experiential education.

Admission into the Professional Program (Enrollment limit: 72)

To be admitted into the Professional Program of the School of Pharmacy, a student must have either enrolled in and successfully completed the Prepharmacy Program at Wilkes University or have submitted a successful application to the School of Pharmacy.

Admission through the Application Process

Faculty reserve the right to select from among the applicants who will have the best opportunity to complete the curriculum within four years and have productive professional lives. Admission is based upon the student's academic ability as reflected in grades from pre-pharmacy courses, number of courses repeated, typical course loads, PCAT scores, total academic career, and references, as well as a successful interview. If applicable, the committee will also consider the most recent academic performance for those non-traditional students returning to college life after a hiatus. Each spring, a select group of applicants is invited for an interview, based upon a complete evaluation of all submitted application materials. Any missing documentation will compromise the application.

The number of seats in the professional program available through the application process is dependent on the number of Pre-pharmacy Guaranteed Seat students able to claim a seat. A portion of remaining seats is available on an academically competitive basis to Wilkes students with overall and prerequisite GPAs above a 3.0, and a portion of seats is available to transfer students with overall and prerequisite GPAs above a 3.0 on a competitive basis. To be classified as a Wilkes student, the student 1) must complete and be enrolled at Wilkes University for two full-time consecutive semesters before enrollment in the

Pharmacy

Professional Program, AND 2) must complete 18 credits of prerequisite courses at Wilkes University by the end of the spring semester prior to enrollment in the Professional Program. Failure to meet both of these criteria will result in classification as a "transfer student."

Applicants should review the technical standards set forth by the School of Pharmacy, which are available at:

<http://wilkes.edu/academics/colleges/nesbitt-college-of-pharmacy/index.aspx>

These technical standards describe non-academic abilities that are required for admission to, continuation in, and graduation from the School of Pharmacy to obtain a Pharm.D. degree.

How to Apply

To obtain a School of Pharmacy application, you may call or write:

School of Pharmacy

Wilkes University

Wilkes-Barre, PA 18766

(570) 408-4280

1-800-WILKESU ext. 4280

or download an application from www.wilkes.edu/include/academics/pharmacy/apply.doc

Please note: The School of Pharmacy application is in addition to the Wilkes University application. All applicants must complete the application and return it before **January 15th** for the upcoming fall semester.

Pharmacy Minimum Admission Requirements

To be considered for admission to the Professional Program of the School of Pharmacy, the applicant:

- should complete the Wilkes University General Education Course Requirements or have completed a baccalaureate degree. A maximum of two deficient General Education courses will be considered for admission into the pharmacy program. Students with more than two deficient General Education courses may appeal to the Student Affairs Committee of the School of Pharmacy for consideration.
- must successfully (2.0 or higher) complete the Pharmacy Prerequisite Courses listed below by the end of the spring term prior to fall admission;
- must obtain a minimum overall GPA of 2.50 and a minimum GPA of 2.50 in the Pharmacy Prerequisite Courses listed below (Wilkes student) by the end of the spring semester prior to admission. Preferential consideration will be given to Wilkes students with GPAs of 3.0 or higher.
- must obtain a minimum overall GPA of 3.00 and a minimum GPA of 3.00 in the Pharmacy Prerequisites listed below for preferential consideration (non-Wilkes student) by the end of the spring semester prior to admission.
- obtain a grade of C (2.0) or better in each of the Pharmacy Prerequisite Courses listed below by the end of the spring semester prior to admission;

Prerequisite grades less than 2.0 may be repeated with the higher grade factoring into the GPA. However, applications will be placed at a lower priority if more than 2 grades of less than 2.0 in prerequisite courses are recorded. In addition, repeating courses in which a grade above a 2.0 was earned will not factor into the GPA. However, exceptions to the above rules will be considered on an individual basis and only if students can provide written explanation of extenuating circumstances.

(Note: admission into the Pharmacy Program is extremely competitive. Earning the minimum academic criteria necessary to submit an application does not in any way infer or promise an interview or admission into the program.)

- must provide three completed recommendation forms, one of which must be from a pharmacist;
- must successfully complete the interview process;
- must demonstrate acceptable written communication skills; and
- must submit scores on the Pharmacy College Admission Test (PCAT), including the writing sample, by January 15th..

Pharmacy Prerequisites

Two semesters (8 credits) of General Chemistry with labs

Two semesters (8 credits) of Organic Chemistry with labs

Two semesters (8 credits) of General Biology with labs

One semester (4 credits) of Calculus

One semester (3 credits) of Statistics

One semester (4 credits) of General Physics with lab

One semester (3 credits) of Microeconomics

One semester (3 credits) of Oral Communications

Professional Standards

Students enrolled in the program of the School of Pharmacy are expected to endorse professional standards by subscribing to the Oath of the Pharmacist. Students are also expected to abide by the American Pharmacists Association's Code of Ethics of the Profession.

Technical Standards

Students applying to and enrolling in the School of Pharmacy are expected to read, acknowledge, and understand the Technical Standards. These technical standards describe non-academic abilities that are required for admission to, continuation in, and graduation from the School of Pharmacy to obtain a Pharm.D. degree.

A candidate must have abilities and skills in the following five areas: 1) observational skills; 2) communication skills; 3) motor skills; 4) intellectual, conceptual, integrative, and quantitative skills; and 5) behavioral and social skills. Detailed descriptions of the Technical Standards are provided in the School of Pharmacy Application or by contacting the School of Pharmacy Dean's office.

Progression Requirements

All students in the Professional Program of the School of Pharmacy are required to meet minimum standards for progression. Academic progression requirements include a minimum semester and a cumulative pharmacy GPA of 2.0. In addition, no student shall be allowed more than 8.0 credits of less than 2.0 grades in required professional courses both inside and outside of the School. Any course with a grade of 0.0 must be repeated. At the end of each semester the progress of each student in the Professional Program will be reviewed. Students failing to meet minimal academic standards at the end of any semester must petition the Student Review Subcommittee through the Assistant Dean to further progress in the School. More inclusive policies, including but not limited to acceptable classroom and experiential site behavior, alcohol and substance abuse, and other issues impacting the image of the professional program and the student, adopted within these guidelines are distributed to all students in the Nesbitt School of Pharmacy Student Handbook distributed annually. APPE progression is described in the APPE Course Manual.

Experiential Curriculum Component

Experiential learning is a critical component of the curriculum at Wilkes. Before being placed in an experiential setting, all students are required to:

- possess an active Pennsylvania Pharmacy Intern License;
- possess professional liability insurance,
- have documentation of immunizations,
- pass a physical examination,
- be certified in Basic Cardiac Life Support (healthcare provider) and Basic First Aid,
- have a criminal background check completed by an approved provider; and
- complete other site-specific requirements, such as FBI fingerprint check, PA child abuse background check, etc.

These criteria are fully described throughout the curriculum, including deadlines and ramifications of non-compliance.

The Introductory Pharmacy Practice Experience (IPPE) consists of a number of different experiences. During the summer following successful completion of the P-1 year, students will complete a 2-week (80 hour) Introductory Pharmacy Practice Experience (IPPE I). The second professional year (the P-2 year) includes 40 hours of IPPE II during the fall and/or spring semester. In addition, students will complete a 2-week (80 hour) IPPE III during the summer after the P-2 year. In the third professional year (P-3) of the professional program, the curriculum includes a two-semester course in service learning (longitudinal care), and 40 hours of IPPE IV. IPPE V is a self-directed IPPE and consists of 20 hours of independent pharmacy-related, service-oriented learning earned during the P1 through P3 years. IPPE's occur at practice sites and in the community in the Wilkes-Barre/Scranton area, not on campus.

The Advanced Pharmacy Practice Experience (APPE) occurs during the fourth professional year (the P-4 year) of the professional program. Each student will be assigned to 1 six-week rotation, plus 6 five-week rotations, some of which may be at some distance from the Wilkes-Barre area. As much as possible, The School of Pharmacy will assist in locating safe, affordable housing for APPEs. Since patient care is a continuous activity, some experiences may be conducted outside of regular school/business hours. Note also that APPE start and end dates do not adhere to the regular university calendar. The student is responsible for paying all transportation and housing costs for all experiential components of the curriculum, except where noted.

Graduation, Degree and Licensure Requirements

It is the student's responsibility to meet all graduation requirements, and it is expected that all students accepted into the Pharm.D. Program will meet regularly and frequently with their advisors to ensure timely progress toward their Doctor of Pharmacy degree. Graduation is dependent on successful completion of all required and elective course requirements in the School of Pharmacy (see Progression Requirements) AND completion of all General Education Requirements mandated by Wilkes University.

A student entering the Professional Program with a bachelor's degree from a four-year accredited college or university is exempted from the University's General Education Requirements, but is not exempted from the prerequisite entry requirements prescribed by the School of Pharmacy for entry into the Professional Program.

Students applying with degrees or courses from foreign colleges or universities will be evaluated to ensure significant portions of the General Education Requirements are satisfied.

All non-degreed students entering the Professional Programs are encouraged to complete the General Education Requirements prior to beginning the Professional Curriculum. As mentioned, a student may be deficient in two General Education requirements and be granted admission into the program. Student will receive consultation and documentation from their advisor that these courses must be completed prior to graduation. Students with more than two deficient General Education courses may appeal to the Student Affairs Committee of the School of Pharmacy for consideration. This requirement is in place since there is limited room within the professional curriculum, including summers, to complete the courses. As a matter of record, non-degreed students who have successfully completed the second professional year (P-2) in the School of Pharmacy AND completed all General Education Requirements will be awarded a

Pharmacy

generic Bachelor of Science degree. The pass-through B.S. degree does not meet eligibility requirements for licensure as a pharmacist; it is only intended to acknowledge the academic achievement of students completing four years of university-level education.

Pharmacy licensure is governed by state law. All states require graduation from an accredited School or College of Pharmacy. Additional requirements for licensure should be requested from the state in which licensure is sought. It is the student's responsibility to fulfill all requirements for the state in which they seek licensure. Students must contact that State Board of Pharmacy for all appropriate paperwork. For further information, please contact the Dean's Office in the School of Pharmacy.

The School of Pharmacy reserves the right to revise the Pharmacy Curriculum at any time in order to prepare students for future practice roles, meet new accreditation requirements and to incorporate innovations in instruction

ADVANCED PHARMACY PRACTICE EXPERIENCE#

DOCTOR OF PHARMACY

Recommended Course Sequence

P-1 Fall Semester

PHA 301	Found. of Pharm. Practice I	2
PHA 308	Pharm. and Health Care Delivery	3
PHA 311	Pharmaceutics I	4
PHA 313	Pharm. Calculations	1
PHA 327	Medical Microbiology	4
PHA 331	Anatomy/Physiology I	4
Total Credits		18

P-1 Spring Semester

PHA 302	Pharmaceutical Care Lab I	1
PHA 304	Foundations of Pharm. Practice II	2
PHA 310	Clinical Research Design	3
PHA 312	Pharmaceutics II	4
PHA 332	Anatomy & Physiology II	4
PHA 365	Medical Biochemistry	4
Total Credits		18

P-1 Summer

PHA 335	Intro. Pharmacy Practice Exp I (IPPE I)	2
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P-2 Fall Semester

PHA 401	Pharmacy Care Lab II	1
PHA 405	Pharmaceutical Care Systems	2
PHA 411	Biopharm/Clinical Kinetics	4
PHA 421	Pharmacotherapeutics I	2
PHA 423	Pharmacotherapeutics II	2
PHA 425	Pharmacotherapeutics III	3
	Elective	2-3
Total Credits		16-17

P-2 Spring Semester

PHA 410	Biotechnology/Immunology	3
PHA 412	Mgt. of Pharm. Operations	3
PHA 426	Pharmacotherapeutics IV	2
PHA 428	Pharmacotherapeutics V	4
PHA 430	Pharmacotherapeutics VI	2
PHA 440	IPPE II	1
	Elective	2-3
Total Credits		17-18

P-2 Summer

PHA445	Intro. Pharmacy Practice Exp III (IPPE III)	2
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P-3 Fall Semester

PHA 501	Pharmaceutical Care Lab III	1
PHA 503	Longitudinal Care I	1
PHA 505	Pharmacy Law	2
PHA 509	Economic Evaluation of Pharm.	3
PHA 521	Pharmacotherapeutics VII	2
PHA 523	Pharmacotherapeutics VIII	4
PHA 525	Pharmacotherapeutics IX	2
	Elective	2-3
Total Credits		17-18

P-3 Spring Semester

PHA 502	Pharmaceutical Care Lab IV	1
PHA 504	Longitudinal Care II	1
PHA 526	Pharmacotherapeutics X	2
PHA 528	Pharmacotherapeutics XI	2
PHA 530	Pharmacotherapeutics XII	4
PHA 532	Alternative Medicine/ Nutrition	3
PHA 555	IPPE IV	0.5
PHA 560	IPPE V	0.5
	Professional Elective	2-3
Total Credits		16-17

P-4 Advanced Pharmacy Practice Experiential Year

The APPE portion of the curriculum consists of 7 rotations for a total of 35 credit hours in various settings. Rotation #1 is 6 weeks in duration. Rotations #2-7 are 5 weeks in duration.

There are four required APPE rotations. In addition there are three elective APPE rotations. Information will be provided during the P-3 year.

PHA 510	General Medicine
PHA 511	Ambulatory Care
PHA 512	Community Practice
PHA 513	Health System

In addition, there are three elective APPE rotation. Information will be provided during the P-3 year.

INTRODUCTORY PHARMACY EXPERIENCE

PHARMACOTHERAPEUTIC MODULES

(PHA 421, 423, 425, 426, 428 430, 521, 523, 525, 526, 528, and 530) -
A four-semester, twelve-module sequence (three modules per semester)
that integrates pharmacology, medicinal chemistry, pathophysiology, and
pharmacotherapy. This team-taught, interdisciplinary course provides
students with the opportunity to learn and apply concepts from these four
disciplines

PHA 421 Pharmacotherapeutics I: Principles of Pharmacology & Medicinal
Chemistry
Two credits

PHA 423 Pharmacotherapeutics II: Principles of Pharmacotherapeutics
Two credits

Prerequisite: PHA 421.

PHA 425 Pharmacotherapeutics III: Self-Care and Dermatology*
Three credits

PHA 426 Pharmacotherapeutics IV: Gastrointestinal Disorders*
Two credits

PHA 428 Pharmacotherapeutics V: Infectious Diseases*
Four credits

PHA 430 Pharmacotherapeutics VI: Hematology, Joint Disorders, Surgery*
Two credits

PHA 521 Pharmacotherapeutics VII: Pulmonary Disorders*
Two credits

PHA 523 Pharmacotherapeutics VIII: Cardiovascular Disorders*
Four credits

PHA 525 Pharmacotherapeutics IX: Renal Disorders*
Two credits

PHA 526 Pharmacotherapeutics X: Endocrine Disorders & Women's Health
Issues*
Two credits

PHA 528 Pharmacotherapeutics XI: Neoplastic Diseases*
Two credits

PHA 530 Pharmacotherapeutics XII: Central Nervous System Disorders*
Four credits

* PHA 423 is prerequisite to PHA 425-530.

Course Descriptions

AUT. AUTISM

AUT-501. AUTISM DIAGNOSIS AND TREATMENT

Credits: 3

The course will include an historical overview of the diagnosis and treatment of Autism and Autistic Spectrum Disorders. Special education policies, procedures, IEP development, and ethical considerations will be addressed. A review of contemporary diagnostic tools and biological research will be presented. A special emphasis will be given to evidence based treatment protocols as highlighted by the National Autism Standards Project. A 20 hour field experience is required.

AUT-502. APPLIED BEHAVIORAL ANALYSIS AND AUTISM

Credits: 3

This course will introduce the basic principles of Applied Behavior Analysis (ABA) with special consideration given to its applications to ASD and Pervasive Developmental Disorders (PDD). Emphasis will be placed on positive behavioral supports, behavioral intervention plans (BIP), Functional Behavior Analysis (FBA), and error analysis. A review of outcome research in Early Intensive Behavior Intervention will be presented. A 20 hour field experience is required.

AUT-503. AUTISM SCOPE AND SEQUENCE

Credits: 3

This course will present a review of past and present curricular approaches for students with ASD and Pervasive Developmental Disorders (PDD) including Asperger's Syndrome. Particular emphasis will be placed on ABA designs and visually mediated strategies, including ME, ABLLS, and VB-MAPP that address core language deficits and social competence. The role of specific augmentative and alternative communication systems (AAC) will be discussed. A 20 hour field experience is required.

AUT-504. ADVANCED AUTISM INSTRUCTION AND INTERVENTION

Credits: 3

This course will offer an in-depth examination of state-of-the-art instructional techniques and protocols for ASD and Pervasive Developmental Disorders (PDD). Topics will include Functional Behavior Assessment, Positive Behavior Support Plans, Precision Teaching, Instructional Control, Classwide Behavior Plans, FloorTime, Sensory Integrative Approaches, and Direct Instruction. Materials from the statewide Verbal Behavior Project, TEACCH, and Competent Learner Models will be reviewed. A 20 hour field experience is required.

BEGR. BIOENGINEERING

BEGR-401. APPLIED ENGINEERING ANALYSIS

Credits: 3 (Two hours of lecture and two hours of lab per week)

This course is a graduate level course whose focus is to present, illustrate and apply the calculus of single, multivariable and vector-valued functions to a variety of mechanical and electrical engineering and physics topics at an advanced level. Topics include ordinary differential equations, series solutions of ordinary differential equations and special functions, inner product spaces, vector analysis, operator algebra, matrix methods and eigenvalue problems, Fourier series and integrals, complex variables, Sturm-Liouville theory, transform methods and partial differential equations. (Cross-listed with [ME-401](#))

BEGR-408. BIOMEMS

Credits: 3 (Three hours of lecture and three hours of lab per week)

Fees: Lab Fee - \$104

This course is about the basic foundations for the understanding of electrical, mechanical and chemical transducers in biomedical applications through learning fabrication, design and analysis. The course will have lectures to cover the theory and practical applications of imaging. Some of the lectures and assignments will be in our materials fabrication laboratories.

BEGR-409. INTRODUCTION TO BIOENGINEERING

Credits: 3 (Three hours of lecture per week)

This course first covers some essential information of bioengineering and includes the required research ethics curriculum for the program. The course also samples the wide variety of bioengineering options for students who plan to enter one of the degree tracks. The beginning lectures briefly describe the scientific basis for bioengineering both from biological and engineering standpoints. Bioengineering faculty will then describe the bioengineering options in the particular engineering tracks and courses as well as the research conducted by faculty in the department. (Required for all students in Bioengineering)

BEGR-411. INTEGRATED PRODUCT DEVELOPMENT

Credits: 3 (Three hours of lecture per week)

Organizational issues and decision-making for capital investments in new technologies. The product development and commercialization process is traced from research and development and marketing activities through the implementation phase involving the manufacturing function. Term project is a commercialization plan for a new manufacturing technology. (Cross-listed with [ME-411](#)) (Required for all students in Bioengineering)

BEGR-415. 3-D MODELING IN HUMAN ANATOMY AND PHYSIOLOGY

Credits: 3 (Two hours of lecture and three hours of lab per week)

Fees: Lab Fee - \$104

This is a one-semester course that will provide a foundation in Human Anatomy and Physiology for Graduate Engineering students in preparation for the design and evaluation of biomedical devices. Topics to be covered include: anatomical terminology; cell, tissue and organ structure; as well functional anatomy of muscles, joints, nervous, cardiovascular, respiratory, digestive, and urinary systems. Laboratory exercises will include 3D modeling of these systems and physiological recording of muscle contraction, action potentials, EEG, ECG, heat rate, pulse, and respiratory movements.

BEGR-421. BIOFLUIDICS AND MICROFLUIDICS

Credits: 3 (Three hours of lecture and three hours of lab per week)

Fees: Lab Fee - \$104

Students learn how to mathematically and quantitatively describe fluid flow throughout organ systems and biomedical devices. Other topics covered include how flow correlates with diseases.

BEGR-424. MOLECULAR BIOLOGY

Credits: 3 (Three hours of lecture and three hours of lab per week)

Fees: Lab Fee - \$104

An introduction to molecular biology and how it is studied. Topics covered include genome structure, transcription, translation, chromatin structure and its role in gene expression, and techniques for studying gene expression and for genetic engineering. The goal is to learn enough molecular biology to figure out how to identify target genes or combinations of genes and how they might be engineered to produce desired products or to engineer organisms with desired capabilities. (Cross-listed with [BIO-324](#))

BEGR-426. IMMUNOLOGY AND IMMUNOCHEMISTRY**Credits:** 3 (Three hours of lecture and three hours of lab per week)**Fees:** Lab Fee - \$104

Immunology and Immunochemistry provides an introduction to mammalian host defense. The molecular mechanisms that account for the antigen-antibody interaction are explored, as are ways in which this interaction influences the evolution of lymphocyte populations. Mechanisms of acquired immunity, including interactions among lymphocyte subpopulations, are discussed. Lymphocyte differentiation is addressed as a developmental problem, and defense against infection is approached as an integrated response. (Cross-listed with [BIO-326](#))

BEGR-427. MEDICAL MICROBIOLOGY**Credits:** 3 (Three hours of lecture and three hours of lab per week)**Fees:** Lab Fee - \$104

Medical Microbiology provides a professional-level introduction to microbiology that is focused on application of microbiology to the study of infectious disease. Principles of molecular cell biology and biochemistry are applied to an understanding of factors influencing interactions between microbial pathogens and their hosts. Adaptations that have evolved in vertebrate hosts to limit infection are considered along with parasite adaptations that have evolved to overcome such defenses. Infection control strategies - epidemiological and chemical - are also introduced. (Cross-listed with [BIO-327](#))

BEGR-429. VIROLOGY**Credits:** 3 (Three hours of lecture per week)

Virology provides an introduction to the biology of viruses and virus-like agents. A consideration of viruses in terms of their molecular architecture and genome organization is followed by a survey of strategies employed for reproductive success of viruses, focused on the traditional 'stages' of attachment, entry, transcription, translation, genome replication, assembly and release. The course provides an overview of the major groups in the Baltimore classification, and introduces topics in host interaction and control. (Cross-listed with [BIO-329](#))

BEGR-430. BIOINFORMATICS**Credits:** 3 (Online course; Three hours of lecture per week)

An introduction to the ways computers are used to make sense of biological information, especially the data generated by genome projects. Topics covered include databases and data mining, pair-wise and multiple sequence alignment, molecular phylogeny, finding genes in raw DNA sequences, predicting protein and RNA secondary and tertiary structures, generating and analyzing microarray data, generating and analyzing high-throughput sequencing data, DNA fingerprinting, rational drug design and metabolic simulation. (Cross-listed with [BIO-330](#))

BEGR-451. MECHATRONICS/BIOINSTRUMENTATION**Credits:** 3 (Two hours of lecture and one hour of lab per week)**Fees:** Lab Fee - \$104

Mechatronics is a multidiscipline technical area defined as the synergistic integration of mechanical engineering with electronic and intelligent computer control in the design and manufacture of industrial products and processes. This course covers topics such as actuators and drive systems, sensors, programmable controllers, microcontroller programming and interfacing, and automation systems integration. (Cross-listed with [ME-451](#))

BEGR-452. NANOTECHNOLOGY**Credits:** 3 (Two hours of lecture and three hours of lab per week)**Fees:** Lab Fee - \$104

This course explores the fundamentals of nanotechnology and its applications for colloidal suspension, Electrophoretic deposition and nano-sensing by understanding materials properties, micro-machining, sensor and actuator principles. Two hours of lecture and three hours of lab per week. (Cross-listed with [ME-452](#))

BEGR-465. BIOCHEMISTRY**Credits:** 3 (Three hours of lecture per week)

An introduction to metabolism and how it is studied together with an introduction to the physical and chemical properties of macromolecules and their precursors. The goal is to learn enough biochemistry and metabolism to figure out how to identify target pathways and how they might be engineered to produce desired products or to engineer organisms with desired capabilities. (Cross-listed with [CHM-365](#))

BEGR-474. IMAGING IN BIOMEDICINE**Credits:** 3 (Three hours of lecture and three hours of lab per week)**Fees:** Lab Fee - \$104

Biological and medicinal imaging techniques. This course will cover different aspects of imaging important to biomedicine including optical, scanning probe, ultrasound, X-ray and nuclear radiation techniques. The course will have lectures to cover the theory and practical applications of imaging. Some of the lectures and assignments will be in our imaging laboratories both at Wilkes and/or at our partner institutions.

BEGR-477. CELLULAR BIOPHYSICS**Credits:** 3 (Three hours of lecture per week)

Cells are complex micron-sized machines that may best be understood by reverse systems engineering, which means that the understanding originated from detailed analysis of cellular functions and how they were optimized. This course focuses on a quantitative understanding of cellular processes. It is designed for students who feel comfortable with and are interested in analytical and quantitative approaches to cell biology and cell physiology.

BEGR-488. BIOMEDICAL DEVICES AND DESIGN**Credits:** 3 (Two hours of lecture and one hour of lab per week)**Fees:** Lab Fee - \$104

This course discusses the design development and evaluation of medical devices. The goal is to develop the thinking and research tools that will enable students to understand medical devices as products as commercially available technological solutions to medical needs. This total understanding is based upon the coordinate separated understandings of: 1) underlying medical science and clinical practice; 2) underlying technologies and the potential choices between available technologies; 3) engineering design; and 4) technological and business direction of companies.

BEGR-498. BIOMECHANICS – MUSCULAR-SKELETON MECHANICS**Credits:** 3 (Three hours of lecture and three hours of lab per week)**Fees:** Lab Fee - \$104

Instruction will be given towards the mechanical structure of humans and vertebrates, including the concerted motion of bone, muscles and joints as well as the stress and strain of human movements and motion. One example practical outcome of the course is towards the design of prosthetics.

Course Descriptions

BEGR-501. BIOENGINEERING EXPERIMENTATION AND ANALYSIS

Credits: 3 (Three hours of lecture and three hours of lab per week)

Fees: Lab Fee - \$104

This course will provide a hands-on introduction to bioengineering. Students will use molecular techniques to genetically engineer an organism, and then evaluate how the modified organism performs using techniques for studying gene expression, biochemistry and cell physiology. They will also learn statistical procedures for evaluating the significance of their findings.

BEGR-502. MOLECULAR AND CELLULAR BIOENGINEERING

Credits: 3 (Three hours of lecture and three hours of lab per week)

Fees: Lab Fee - \$104

This course will introduce students to modern concepts and techniques in bioengineering through a genuine research experience in bioengineering. Rather than following a set series of lectures, we will pick a bioengineering project and see where it leads us. We will use the information given in lectures and reading assignments to design a project, and then evaluate progress and solve problems.

BEGR-599. THESIS/PROJECT

Credits: 3-6 (Three to six credits of research, proposal writing, presentation, and thesis per week)

Students have the option of selecting up to six credits- hours of thesis or three credit hour of project under guidance of a thesis/project advisor. The thesis will have a committee of three members; at least two members (including the advisor) must be Wilkes faculty members. The thesis/project should be presented in an open forum.

BIO. BIOLOGY

BIO-406. INVERTEBRATE BIOLOGY

Credits: 4

A study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology and ecology. Lecture, three hours a week, laboratory, three hours a week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-411. COMPARATIVE PHYSIOLOGY

Credits: 4

Comparative physiology encompasses the study of organ functions and organ system functions in different animal groups. Emphasis will be on the systemic physiology of vertebrate animals. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-412. PARASITOLOGY

Credits: 4

Parasitology is the study of organisms that live on or within other organisms and the relationship of these organisms to their hosts. This course deals with the common parasites that infect man and other animals. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-414. COMPARATIVE VERTEBRATE ANATOMY

Credits: 4

This course deals with the evolution and anatomy of the organ systems of vertebrates. Lectures survey the comparative anatomy of the vertebrate classes. Laboratory Dissections include the Lamprey, Shark, Mud Puppy, and Cat in detail. Lecture three hours per week, laboratory three hours per week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122.

BIO-421. MAMMALIAN PHYSIOLOGY

Credits: 4

This course examines the function of mammalian systems with regard to homeostasis, metabolism, growth and reproduction. Normal physiological processes as well as some pathophysiological situations are covered. The emphasis is on human physiology; however, other mammalian systems are discussed to demonstrate physiological adaptability to various environmental situations. Laboratory exercises include physiological experimentation in living systems and in computer simulations. Lecture: three hours; Laboratory: three hours. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 226, or permission of instructor.

BIO-423. FUNCTIONAL HISTOLOGY

Credits: 4

This course emphasizes the microscopic examination of mammalian tissues from morphological and physiological perspectives. Reference is made to organ embryogenesis to support the understanding of organ form and function. Tissue preparation for histological examination is demonstrated. Lecture, three hours; laboratory, three hours per week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-425. ENDOCRINOLOGY

Credits: 4

Fees: \$120

This course will focus on the structure, biochemistry, and function of mammalian hormones and endocrine glands; arian, amphibian and invertebrate hormones will also be discussed, where relevant. Clinical pathologies resulting from excess or insufficient hormones will be discussed, as this is essential to mastering an understanding of Endocrinology. Laboratory exercises include experimentation in living systems and computer simulations. Lecture: three hours per week; Laboratory, three hours per week. Laboratory

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-426. IMMUNOLOGY AND IMMUNOCHEMISTRY**Credits:** 4

This course is concerned with the biologic mechanisms and chemistry of reactants and mediators associated with natural and acquired states of immunity, tissue and blood serum responses to infection and immunization, and related patho-physiologic alterations of hypersensitivity phenomena in vertebrate animals and man. A background in microbiology, physiology, and biochemistry is advisable. Lecture, three hours a week; laboratory three hours a week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-427. MEDICAL MICROBIOLOGY**Credits:** 4

Medical Microbiology provides a professional-level introduction to microbiology that is focused on application of microbiology to the study of infectious disease etiology and epidemiology. The laboratory covers techniques used in isolation and identification of microorganisms. Lecture: three hours a week; Laboratory: three hours per week. Laboratory fee: \$120.

Pre-Requisites

Biology 121-122, Chemistry 231-232.

BIO-428. DEVELOPMENTAL BIOLOGY**Credits:** 4

A course dealing with the principles of animal development from descriptive, experimental, and evolutionary perspectives. Laboratory work includes both descriptive and experimental embryology as well as more molecular techniques. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-429. VIROLOGY**Credits:** 3

Virology provides an introduction to the biology of animal viruses. Description of viral molecular architecture and genome organization is followed by a survey of strategies employed for multiplication and regulation of gene expression. Pathogenesis of viral infections is considered from perspectives of viral reproduction strategies and host defense.

Pre-Requisites

Biology 121-122, 225-226; Chemistry 231-232, 233-234.

BIO-430. INTRODUCTION TO BIOINFORMATICS**Credits:** 3

An introduction to the ways computers are used to make sense of biological information, especially the data generated by the human genome project. Topics covered include databases and data mining, pair-wise and multiple sequence alignment, molecular phylogeny, finding genes in raw DNA sequences, predicting protein and RNA secondary and tertiary structures, generating and analyzing microarray data, DNA finger-printing, rational drug design, metabolic simulation and artificial intelligence. Offered online alternate spring semesters, with one assignment due each week.

BIO-438. BIOLOGY OF CANCER**Credits:** 3

This lecture course is designed to explore the various concepts and mechanisms associated with the origins, elaborations and future developments in cellular transformation and carcinogenesis. Emphasis is placed on the molecular biology and physiology of these processes; therefore, a solid background in basic biology is required. Oncogenes, tumor suppressor genes and the disruption of homeostasis are covered in detail, while the medical phenomena typically receive a more general level of coverage.

Pre-Requisites

Biology 121-122, 226; [CHM-231-232](#).

BIO-441. FRESHWATER ECOSYSTEMS**Credits:** 3

A study of the chemical, physical, and biological aspects of fresh water systems. Laboratory investigations will consist of in-depth analysis of local lakes and streams. Lecture, two hours a week; laboratory three hours a week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-443. MARINE ECOLOGY**Credits:** 3

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, EES 230, or permission of instructor.

BIO-444. ECOLOGY**Credits:** 4

Ecology examines contemporary ecological thinking as it pertains to the interrelationship of organisms and their environments. Interactions at the population and community levels are emphasized. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$90. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-445. GENETICS**Credits:** 4

Genetics will present treatment of genetics beyond the introductory level with particular emphasis on populational and molecular aspects of heredity. Topics will include plant and human genetics. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$120. Offered every fall.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

Course Descriptions

BIO-446. ANIMAL BEHAVIOR

Credits: 4

This course emphasizes behavior as the response of an organism to physical and social environmental change, and covers the processes that determine when changes in behavior occur and what form they will take. Laboratories, using living local fauna, will demonstrate principles discussed in lecture. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$120. Offered in alternate years.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-461. PLANT FORM AND FUNCTION

Credits: 4

An introduction to the morphology, anatomy, cytology, and physiology of plants, with emphasis on the vascular plants. Structural and functional aspects of plants will be interpreted in relation to each other and within ecological and evolutionary contexts. Lecture, three hours per week; laboratory, three hours per week. Laboratory fee: \$120. Offered every fall.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-462. PLANT DIVERSITY

Credits: 4

A comprehensive survey of bryophytes, vascular plants and plantlike organisms (fungi and algae) emphasizing their structure, reproductive biology, natural history, evolution, and importance to humans. Lecture, three hours per week; laboratory, three hours per week. Laboratory fee: \$120. Offered every spring.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

BIO-466. FIELD BOTANY

Credits: 3

This is a specialized summertime field course which emphasizes a taxonomic, phylogenetic, and ecological survey of higher plants indigenous to Northeastern Pennsylvania.

Pre-Requisites

Biology 121-122, or permission of instructor. Offered in alternate years.

BIO-468. MEDICAL BOTANY

Credits: 3

A specialized course that provides a scientifically based overview of the ways that plants affect human health. Topics include cultural and historical perspectives of plants and medicine, plants that cause human ailments, plants that cure human ailments, and psychoactive plants. Lecture, two hours per day for five weeks in alternate summers.

Pre-Requisites

Biology 121-122, 225, [CHM-232](#), or permission of instructor.

BIO-498. TOPICS

Credits: variable

A study of topics of special interest not extensively treated in regularly offered courses.

Pre-Requisites

Biology 121-122, 225-226, or permission of instructor.

CHM. CHEMISTRY

CHM-421. ADVANCED INORGANIC CHEMISTRY

Credits: 3

Introduction to ligand field theory; chemistry of the first transition series, organometallic, and pi acceptor compounds; mechanisms of inorganic reactions. Class three hours a week.

Pre-Requisites

[CHM-222](#) and 252

CHM-423. ADVANCED INORGANIC CHEMISTRY LABORATORY

Credits: 1

Synthesis of coordination and organometallic compounds, and spectroscopic characterization of the products using modern laboratory techniques. Fee \$110.

Pre-Requisites

[CHM-232](#)

CHM-461. BIOCHEMISTRY I

Credits: 3

This course is a study of the physical and chemical properties of proteins, nucleic acids, fatty acids and carbohydrates emphasizing the relationship between the chemical structure and the biological function. The course includes the physical methods of biochemistry, enzyme kinetics, bioenergetics and nucleic acid transcription and translation.

Pre-Requisites

[CHM-232](#)

CHM-462. BIOCHEMISTRY II

Credits: 3

This course is a study of the catabolism and anabolism of carbohydrates, fatty acids and amino acids. The course emphasizes the regulation and integration of major metabolic pathways, including glycolysis, the Krebs cycle, electron transport, gluconeogenesis, pentose phosphate, fatty acid metabolism and amino acid metabolism.

Pre-Requisites

[CHM-232](#)

CHM-463. BIOCHEMISTRY LABORATORY

Credits: 1

Laboratory experiments that emphasize biochemical techniques used in isolation and characterization of macromolecules. Included in the course are various chromatographic techniques, electrophoresis, spectrophotometry and classic biochemical methods. Laboratory three hours a week. Pre-lab, one hour per week. Fee \$110.

Pre-Requisites

[CHM-461](#) or permission of instructor

CHM-498. TOPICS

Credits: 3

A study of topics of special interest not extensively treated in regularly offered courses.

Pre-Requisites

Permission of the instructor

CS. COMPUTER SCIENCE

CS-419. PRINCIPLES OF PROGRAMMING LANGUAGES

Credits: 3

A study of the principles that govern the design and implementation of programming languages. Topics include language structure, data types, and control structures. Programming projects will familiarize students with the features of programming languages through their implementation in interpreters.

Pre-Requisites

CS-226 or equivalent

CS-421. SIMULATION AND DATA ANALYSIS

Credits: 3

Methods of handling large databases including statistical analysis and computer simulations. The emphasis will be upon discrete simulation models with a discussion of relevant computer languages, SLAM, GPSS, and/or SIMSCRIPT.

Pre-Requisites

CS-125 (or the equivalent programming experience) and one semester of calculus.

CS-423. THEORY OF COMPUTATION

Credits: 3

This course formalizes many topics encountered in previous computing courses. Topics include: languages, grammars, finite automata, regular expressions and grammars, context-free languages, push-down automata, Turing machines and computability.

Pre-Requisites

MTH-231 (Discrete Mathematics) and CS-126 (or the equivalent programming experience).

CS-424. SYSTEMS ANALYSIS

Credits: 3

A study of the design and implementation of large computer projects. Special emphasis is placed on applications to business systems. Students will use a CASE tool for automated systems analysis and design.

Pre-Requisites

CS-226 or equivalent

CS-425. DATABASE MANAGEMENT

Credits: 3

Practical experience in solving a large-scale computer problem including determination of data requirements, appropriate data organization, data manipulation procedures, implementation, testing and documentation.

Pre-Requisites

CS-126 or permission of the instructor.

CS-426. OPERATING SYSTEM PRINCIPLES

Credits: 3

Analysis of the computer operating systems including Batch, Timesharing, and Realtime systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices.

Pre-Requisites

CS-226 or equivalent

CS-427. COMPILER DESIGN

Credits: 3

A study of compiler design including language definition, syntactic analysis, lexical analysis, storage allocation, error detection and recovery, code generation and optimization problems.

Pre-Requisites

CS-226 or equivalent

CS-428. ALGORITHMS

Credits: 3

Theoretical analysis of various algorithms. Topics are chosen from sorting, searching, selection, matrix multiplication and multiplication of real numbers, and various combinational algorithms.

Pre-Requisites

CS-226 or equivalent and MTH-202 (Set Theory and Logic).

CS-430. COMPUTER ARCHITECTURE

Credits: 3

A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest 'supercomputers.'

Pre-Requisites

CS-226 or equivalent

CS-434. SOFTWARE ENGINEERING

Credits: 3

A course in 'programming in the large.' Topics include software design, implementation, validation, maintenance and documentation. There will be one or more team projects. Prerequisite CS-226 or equivalent

CS-435. ADVANCED DATABASE CONCEPTS

Credits: 3

A continuation of CS-425. Concentration on the design of a large-scale database system, current special hardware and software, and the role of a DBMS in an organization.

Pre-Requisites

CS-325 (Database Management).

CS-440. ARTIFICIAL INTELLIGENCE

Credits: 3

This course will provide an overview of artificial intelligence (AI) application areas and hands-on experience with some common AI computational tools. Topics include search, natural language processing, theorem proving, planning, machine learning, robotics, vision, knowledge-based systems (expert systems), and neural networks.

Pre-Requisites

CS-126 (Unix) and equivalent programming experience in a high-level language.

CS-450. OBJECT-ORIENTED PROGRAMMING

Credits: 3

Object-oriented concepts and their application to human-computer interaction. Concepts to be covered include objects, classes, inheritance, polymorphism, design patterns, GUI interface guidelines and design of interfaces. There will be programming projects in object-oriented languages.

Pre-Requisites

CS-226 or equivalent

Course Descriptions

CS-455. COMPUTER NETWORKS

Credits: 3

This course introduces basic concepts, architecture, and widely used protocols of computer networks. Topics include the Open System Interconnection (OSI) model consisting of physical link layer, data layer, network layer, transport layer, session layer, presentation layer, and application layer, medium access sublayer and LAN; various routing protocols; Transmission Control Protocol (TCP) and Internet Protocol (IP) for internetworking.

Pre-Requisites

Either [CS-225](#) or [CS-126](#) and [CS-224](#) or equivalent

CS-460. LINEAR PROGRAMMING

Credits: 3

Graphical linear programming, simplex algorithm and sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with [MTH-460](#))

Pre-Requisites

Programming experience in a high-level language and completion of one semester of calculus..

CS-463. OPERATIONS RESEARCH

Credits: 3

A survey of operations research topics such as decision analysis, inventory models, queueing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with [MTH-463](#))

Pre-Requisites

Programming experience in a high-level language and completion of one semester of calculus.

CS-464. NUMERICAL ANALYSIS

Credits: 3

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science, and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with [MTH-464](#))

Pre-Requisites

Programming experience in a high-level language and completion of a one-year calculus sequence.

CS-467. COMPUTER GRAPHICS

Credits: 3

Introduction to equipment and techniques used to generate graphical representations by computer. Discussion of the mathematical techniques necessary to draw objects in two and three-dimensional space. Emphasis on application programming and the use of a high-resolution color raster display.

Pre-Requisites

[CS-226](#) or equivalent

CS-483. WEB DEVELOPMENT

Credits: 3

An introduction to the development of dynamic, database-driven sites, including active server pages, PHP, authentication, session tracking and security, and the development of shopping cart and portal systems.

Pre-Requisites

[CS-283](#) (Web Development I) and [CS-325](#) (Database Management).

CS-498. TOPICS IN COMPUTER SCIENCE

Credits: variable

Variable credit study of one or more special topics in computer science. May be repeated for credit provided a different topic is selected.

CW. CREATIVE WRITING

CW-502. WRITING FICTION

Credits: 3

This is an intermediate course in writing fiction. Students will study, explore, and practice the process, form, and discipline of writing fiction. Students will write and analyze a variety of short fiction samples that demonstrates their understanding of basic fiction elements, point of view, and narrative style.

CW-503. WRITING POETRY

Credits: 3

This is an intermediate course in writing poetry. Students will study, explore, and practice the process, form, and discipline of writing poetry. Students will write and analyze a variety of poems that demonstrate their understanding of basic poetic elements, diverse forms, and poetic style.

CW-504. WRITING SCREENPLAYS

Credits: 3

This is an intermediate course in writing screenplays. Students will study, explore, and practice the process, form, and discipline of writing screenplays. Students will write and analyze a variety of scenes that demonstrate your understanding of basic film design, diverse forms, and cinematic styles.

CW-505. WRITING PLAYS

Credits: 3

An intermediate level course in writing plays. Students will explore, study and practice the process, forms, and discipline of writing all forms of stage plays. Students will write and analyze a variety of scenes and short plays that demonstrate their understanding of the basic stage elements, theatrical conversations, and dramatic forms.

CW-506. WRITING CREATIVE NON-FICTION

Credits: 3

This is an intermediate level course in writing creative nonfiction. Students will explore, study and practice the process, forms, and discipline of writing all forms of creative nonfiction. Students will write and analyze a variety of scenes and short plays that demonstrate their understanding of basic narrative elements, point of view, factual research, and narrative prose styles.

CW-530. CONTINUOUS REGISTRATION

Credits: 1-6

This course allows students to continually register where needed for further revision in preparation of their final project. Students must continually register until revisions are complete or they complete the required capstone.

CW-614. REVISION TERM**Credits:** 3

Students will have the opportunity to continue to work with a faculty mentor to revise their creative thesis and prepare it for publication/production OR begin a new project, built upon the strengths of the Master of Arts thesis.

CW-630. CONTINUOUS REGISTRATION**Credits:** 1-6

This course allows students to continually register where needed for further revision in preparation of their final project. Students must continually register until revisions are complete or they complete the required capstone.

EDAM. EDAM**EDAM-5001. EARLY LITERACY: GUIDING PRINCIPLES AND LANGUAGE DEVELOPMENT (K-3)****Credits:** 3

This course will set the stage for the entire Comprehensive Early Literacy Series. It begins by introducing Scientifically-Based Reading Research, and what it means regarding teaching students to read. Comprehensive Literacy Instruction and the principles that guide it will be covered. The Gradual Release of Responsibility Model will be introduced as a strategy for moving students to independent learning. Finally, the importance of language development instruction and how it relates to guiding principles will be connected. Prerequisite course for the MS in Education with a major in Early Childhood Literacy program.

EDAM-5002. WORD STUDY K-3: PRINT AWARENESS, LETTER KNOWLEDGE, PHONICS, AND HIGH FREQUENCY WORDS**Credits:** 3

The course begins with a look at the core beliefs about teaching and learning and a review of the Gradual Release of Responsibility Model. The learner will then consider what comprehensive early literacy is and how the Gradual Release of Responsibility Model is applied to it, as well as how to develop a comprehensive early literacy assessment system. The learner will also examine phonological awareness, the five components of word study, and the role of accuracy in comprehensive early literacy.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5003. FLUENCY AND VOCABULARY DEVELOPMENT (K-3)**Credits:** 3

Assessing and improving oral reading fluency are explored, as well as vocabulary development activities in the context of five research-based methods for a teaching vocabulary.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5004. DEVELOPING COMPREHENSION, PART I (K-3)**Credits:** 3

The course begins with a review of the core beliefs about teaching and learning, the Guiding Principles, and the Gradual Release of Responsibility Model. The learner will then understand what comprehension is and why it should be studied, including the role of oral language, phonics, fluency, and vocabulary development. This will be followed by an introduction to literary genres and elements and structures of text. The learner will then consider comprehension strategies, as well as how comprehension can be assessed.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5005. DEVELOPING COMPREHENSION, PART II (K-1)**Credits:** 3

The course begins with a review of the core beliefs about teaching and learning, the Guiding Principles, and the Gradual Release of Responsibility Model. The learner will review what comprehension is and why it should be studied. This will be followed by modeling of comprehension strategies used individually. The learner will also examine tools to support comprehension instruction strategies. Next, the learner will examine techniques known as interactive read alouds/think alouds and shared reading and see modeling of comprehension strategies used with these techniques. Finally, the course will show how comprehension can be assessed.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3) [EDAM-5004](#) Developing Comprehension Part I (K-3)

EDAM-5006. DEVELOPING COMPREHENSION, PART II (2-3)**Credits:** 3

The course begins with a review of the core beliefs about teaching and learning, the Guiding Principles, and the Gradual Release of Responsibility Model. The learner will review what comprehension is and why it should be studied. This will be followed by modeling of comprehension strategies used individually. The learner will also examine tools to support comprehension instruction strategies. Next, the learner will examine techniques known as interactive read alouds/think alouds and shared reading and see modeling of comprehension strategies used with these techniques. Finally, the course will show how comprehension can be assessed.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3) [EDAM-5004](#) Developing Comprehension Part I (K-3)

Course Descriptions

EDAM-5007. DIFFERENTIATED SMALL GROUP INSTRUCTION (K-1)

Credits: 3

The course begins with a review of the core beliefs about teaching and learning, the Guiding Principles and the Gradual Release of Responsibility Model. The course covers what differentiated small group instruction is, why it is used, and how the Guiding Principles apply to it. This will be followed by considering the developmental stages of learning to read and the teaching emphasis at each stage. The course will then cover how to use assessment data to group and regroup students for differentiated instruction. Then, the learner will consider differentiated systematic and explicit instruction and learn what the lesson components are, how to plan the lesson, and how to manage the classroom. Finally, the course will cover how to create a partnership with parents and how to communicate with them.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5008. DIFFERENTIATED SMALL GROUP INSTRUCTION (2-3)

Credits: 3

The course begins with a review of the core beliefs about teaching and learning, the Guiding Principles and the Gradual Release of Responsibility Model. The course covers what differentiated small group instruction is, why it is used, and how the Guiding Principles apply to it. This will be followed by considering the developmental stages of learning to read and the teaching emphasis at each stage. The course will then cover how to use assessment data to group and regroup students for differentiated instruction. Then, the learner will consider differentiated systematic and explicit instruction and learn what the lesson components are, how to plan the lesson, and how to manage the classroom. Finally, the course will cover how to create a partnership with parents and how to communicate with them.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5009. DEVELOPING INDEPENDENT READERS (K-3)

Credits: 3

The course begins with a review of the core beliefs about teaching and learning, the Guiding Principles, and the Gradual Release of Responsibility Model. The learner will explore the how, what, and why of independent reading and how it relates to the 7 Guiding Principles. The learner will consider the classroom environment and methods they can use to promote independent reading. The course will also explore the implementation and management of independent reading as well as how to create partnerships to support it.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5010. CONNECTING READING AND WRITING (K-1)

Credits: 3

In this course, learners will understand how the reciprocal processes of connecting reading and writing accelerate student learning in both areas. This course will provide the research, the continuum of development, and resources for instructional techniques, assessment and record keeping. The learner will apply learned concepts and focus on student achievement.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5011. CONNECTING READING AND WRITING (2-3)

Credits: 3

In this course, learners will understand how the reciprocal processes of connecting reading and writing accelerate student learning in both areas. This course will provide the research, the continuum of development, and resources for instructional techniques, assessment and record keeping. The learner will apply learned concepts and focus on student achievement.

Pre-Requisites

[EDAM-5001](#) Early Literacy Guiding Principles and Language Development (K-3)

EDAM-5012. MASTER TEACHER PRACTICUM: APPLYING ACTION RESEARCH TO DEVELOP A RESULTS-DRIVEN EARLY LITERACY CLASSROOM

Credits: 6

Pre-Requisites

[EDAM-5001](#), [EDAM-5002](#), [EDAM-5003](#), [EDAM-5004](#), [EDAM-5005](#), [EDAM-5006](#), [EDAM 5007](#), [EDAM-5008](#), [EDAM-5009](#), [EDAM-5010](#), [EDAM-5011](#), [EDAM-5013](#)

EDAM-5013. TEACHER LEADERSHIP

Credits: 3

After understanding the meaning of teacher leadership, learners will explore their own school's culture, their impact on learning, and the power of reflective practice. Teacher leaders are needed in order to facilitate effective change in school culture and student achievement. The course begins with a review of the core beliefs and guiding principles about teacher leadership and explores how schools are rapidly changing and the complexity of the change. Learners will experience various tools of reflection throughout the course, explore the impact of school culture on learning, and understand the behaviors and attitudes of teacher leaders.

Pre-Requisites

None

EDAM-5020. INSTRUCTIONAL COACHING I

Credits: 3

Instructional Coaching I defines instructional coaching and provides depth on initial coaching strategies used by new coaches as they develop their role within a school.

Pre-Requisites

[EDAM-5013](#) Teacher Leadership

EDAM-5021. INSTRUCTIONAL COACHING II**Credits:** 3

Instructional Coaching II provides additional coaching strategies used after the role has been established and provides depth on evaluating program success using student assessment results.

Pre-Requisites

[EDAM-5020](#) Instructional Coaching I

EDAM-5022. PROBLEM-BASED APPROACH TO INSTRUCTIONAL COACHING**Credits:** 3

This is a comprehensive instructional coaching course designed to address a range of grade levels and content areas. It provides examples through a case study approach of dealing with content areas and grade levels that span K-12 and are unique to specific certification areas and the teaching dilemmas and situations that are encountered when coaching K-12 teachers. Issues arising with special education, racial and socio-economic diversity are also addressed.

Pre-Requisites

[EDAM-5013](#) Teacher Leadership

EDAM-5023. PROBLEM-BASED APPROACH TO K-3 LITERACY COACHING**Credits:** 3

This course is specific to the intended content area. It provides specific examples through case study approach of dealing with both the content area and grade range unique to the intended certification and the teaching dilemmas and situations that are encountered when coaching teachers. Issues arising with special education, racial and socio-economic diversity are also addressed.

Pre-Requisites

[EDAM-5013](#) Teacher Leadership

EDAM-5030. TEACHING IN THE 21ST CENTURY**Credits:** 3

This course lays the foundation by answering the question, "Why do I need to change my instruction?" Through this course, many learners will understand that student disinterest and poor achievement can be linked to the use of 20th century teaching strategies being used on 21st century minds. This course will allow learners to reflect on their current instruction in light of what 21st century students need. It will provide a systems view of what needs to change in the classroom and in the school system. The online learner will assess these needs and be introduced to the pedagogical strategies used, including inquiry, project-based learning, and differentiated instruction. Prerequisite course to all other courses in the MS in 21st Century Teaching & Learning.

EDAM-5031. ACTION RESEARCH FOR EDUCATIONAL CHANGE**Credits:** 3

Action research is applied research educators can do within the school to improve practice, from instruction to learning. Knowledge and skill will be in designing action research, using both quantitative and qualitative data collection methods, to inform and improve practice.

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

EDAM-5032. USING ASSESSMENT TO GUIDE INSTRUCTION**Credits:** 3

Using data-driven instruction to guide teaching and learning is critical in the attainment of student learning outcomes. Educators will learn to use assessments to plan, modify, and differentiate instruction, as well as to assess mastery of content and academic standards through the selection of appropriate content and the design of varied assessments to lead to the interpretation and application of data from multiple assessment sources. (cross-listed with [ED-520](#)).

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

EDAM-5033. DEVELOPING READING & WRITING ACROSS THE CURRICULUM**Credits:** 3

This course lays the foundation by answering the question, "Why do I need to change my instruction?" Through this course, many learners will understand that student disinterest and poor achievement can be linked to the use of 20th century teaching strategies being used on 21st century minds. This course will allow learners to reflect on their current instruction in light of what 21st century students need. It will provide a systems view of what needs to change in the classroom and in the school system. The online learner will assess these needs and be introduced to the pedagogical strategies used, including inquiry, project-based learning, and differentiated instruction.

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

EDAM-5034. APPLYING ADVANCED TECHNOLOGY TO SUPPORT STANDARDS-BASED INSTRUCTION**Credits:** 3

This course introduces students to advanced instructional technologies, currently available to educators, and the ways they can be used to support standards-based instruction. Ubiquitous use of technology will be emphasized to create enriched, motivating and authentic learning experiences for students.

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

EDAM-5035. TEACHING AUTHENTIC CONTENT IN THE 21ST CENTURY**Credits:** 3

This course shows teachers of specific subject areas how to provide an authentic experience or their students by using the previously learned methods to transform their teaching into having students engage in learning and activities as people actually would in the real world.

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

EDAM-5036. DIFFERENTIATED INSTRUCTION TO MEET THE NEEDS OF ALL LEARNERS**Credits:** 3

This course will explain how learners can determine the needs and learning styles of their students in order to differentiate instruction so that the needs and learning styles of students are met.

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

Course Descriptions

EDAM-5037. INQUIRY-BASED LEARNING IN THE 21ST CENTURY

Credits: 3

This course explains that inquiry-based learning helps students 'learn how to learn' through observation, reason, critical thinking, and the ability to justify or question knowledge. This course also allow learners to understand that inquiry-based learning helps students learn more by asking questions and doing investigations in order to learn, with the teacher acting more as a consultant.

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

EDAM-5038. PROJECT-BASED LEARNING IN THE 21ST CENTURY

Credits: 3

This course will explain how project-based learning addresses learning though completing projects that foster skills in communication, collaboration, networking research using technology, and critical thinking.

Pre-Requisites

[EDAM-5030](#) Teaching in the 21st Century

EDAM-5039. APPLYING 21ST CENTURY TEACHING TO EDUCATIONAL PRACTICE

Credits: 3

This capstone course requires secondary educators to transfer the knowledge and skills attained in this program to practice through authentic teaching and learning experiences. Projects that demonstrate the mastery of program goals and objectives will be planned, implemented, and reflected upon in a cumulative experience that enables educators to demonstrate their mastery of 21st century pedagogy.

Pre-Requisites

[EDAM-5030](#), [EDAM-5031](#), [EDAM-5032](#), [EDAM-5033](#), [EDAM-5034](#), [EDAM-5035](#), [EDAM-5036](#), [EDAM-5037](#), [EDAM-5038](#)

EDAM-5040. FOUNDATIONS OF THE ART AND SCIENCE OF TEACHING

Credits: 3

This course introduces learners to the work of Dr. Robert Marzano and his meta-analysis of the research regarding effective teaching practices conducted over the last 35 years in the field of education. Throughout this course learners will review research on effective teaching, develop a framework for designing units, and be introduced to a research based observation and feedback protocol. This course will also lay the foundation for the core courses in this degree program by presenting learners with Dr. Marzano's 10 instructional design questions.

Pre-Requisites

None

EDAM-5041. ESTABLISHING LEARNING GOALS TO SUPPORT LEARNING & INSTRUCTIONAL DESIGN

Credits: 3

This course provides an in-depth exploration to the importance of learning goals that address various levels of cognitive processing. Learners in this course will develop learning goals to address high levels of learning for the students in their classroom. Additionally learners will facilitate the development of learning goals with their students.

Pre-Requisites

[EDAM-5040](#) Foundations of the Art & Science of Teaching

EDAM-5042. MONITORING & MEASURING STUDENT PROGRESS

Credits: 3

This course defines standards-based systems and standards-referenced systems. Learners in this course will differentiate between the two systems and develop a system for tracking student progress towards learning. Learners in this course will also use summative and formative assessments that will allow them to report student progress and measure student achievement.

Pre-Requisites

[EDAM-5040](#) Foundations of the Art & Science of Teaching and [EDAM-5041](#) Establishing Learning Goals to Support Learning & Instructional Design

EDAM-5043. ACTIVELY PROCESSING NEW CONTENT

Credits: 3

This course focuses on developing a comprehensive approach to introducing new content, which will provide learners with the tools to support student construction of meaning through active interaction with content. Learners in this course will acquire the skills needed to introduce new knowledge through critical input experiences using active processing strategies that will allow students in their classroom to achieve their learning goals.

Pre-Requisites

[EDAM-5040](#) Foundations of the Art & Science of Teaching

EDAM-5044. EXTENDING STUDENT LEARNING

Credits: 3

In this course learners will gain the knowledge and skills needed to provide their students with opportunities to generate and test hypotheses by applying new information with relevant content. Learners in this course will engage in activities that apply evidence-based methods in the classroom for long-term retention of knowledge and use of content to move beyond levels of knowing.

Pre-Requisites

[EDAM-5040](#) Foundations of the Art & Science of Teaching

EDAM-5045. DESIGNING INSTRUCTION FOR STUDENT ENGAGEMENT

Credits: 3

This course examines research findings around theory and practice on student engagement. Learners in this course will be provided with methods to motivate and engage students in ways that enhance academic student performance.

Pre-Requisites

[EDAM-5040](#) Foundations of the Art & Science of Teaching

EDAM-5046. CREATING AN EFFECTIVE CLASSROOM ENVIRONMENT

Credits: 3

This course encourages learners to re-examine their current routines and procedures, how they are developed, maintained, and adjusted in order to support a positive classroom climate. Learners will focus on creating the conditions for effective relationships with their students through cooperation, concern, and empathy for students as well as appropriate levels of objectivity, guidance, and control.

Pre-Requisites

[EDAM-5040](#) Foundations of the Art & Science of Teaching

EDAM-5047. DEVELOPING RELATIONSHIPS AND HIGH EXPECTATIONS FOR STUDENT LEARNING**Credits: 3**

The teacher-student relationship provides foundational support for effective instruction. This course enables learners to examine the often hidden dynamic of personal beliefs and expectations and their impact on student achievement.

Pre-Requisites

[EDAM-5040](#) Foundations of the Art & Science of Teaching

EDAM-5048. APPLYING THE ART AND SCIENCE OF TEACHING**Credits: 3****Pre-Requisites**

[EDAM-5040](#) Foundations of the Art & Science of Teaching; [EDAM-5041](#) Establishing Learning Goals to Support Learning & Instructional Design; [EDAM-5042](#) Monitoring & Measuring Student Progress; [EDAM-5043](#) Actively Processing New Content; [EDAM-5044](#) Extending Student Learning; [EDAM-5045](#) Designing Instruction for Student Engagement; [EDAM-5046](#) Creating an Effective Classroom Environment; [EDAM-5047](#) Developing Relationships and High Expectations for Student Learning

EDAM-5049. CONTENT LITERACY**Credits: 3**

This course lays the foundation by answering the question, "Why do I need to change my instruction?" Through this course, many learners will understand that student disinterest and poor achievement can be linked to the use of 20th century teaching strategies being used on 21st century minds. This course will allow learners to reflect on their current instruction in light of what 21st century students need. It will provide a systems view of what needs to change in the classroom and in the school system. The online learner will assess these needs and be introduced to the pedagogical strategies used, including inquiry, project-based learning, and differentiated instruction.

EDAM-5060. FOUNDATIONS OF LITERACY AND LANGUAGE ACQUISITION**Credits: 3**

This course introduces the foundations of language and literacy acquisition focusing on the components of a comprehensive literacy program, early reading skills, and classroom environment. The learner will explore historical perspectives in reading instruction, the importance of developing early reading skills, and best practices for developing a classroom environment that fosters early literacy development.

EDAM-5061. ASSESSING LITERACY**Credits: 3**

This course begins with an introduction to the basic elements of assessing literacy. Learners will explore several areas of assessment related to core competencies in literacy including emergent literacy, oral reading and fluency, comprehension and strategic knowledge, and determining affective factors. Throughout the course, learners will engage in hands-on activities enabling them to practice planning, administering, scoring, and interpreting a variety of literacy assessments. For the culminating activity, learners will select a student who has been struggling with reading using course assessment results to support their selection and develop a reading profile for this student.

EDAM-5062. VOCABULARY AND COMPREHENSION DEVELOPMENT**Credits: 3**

This course focuses on using research-based strategies to develop vocabulary and comprehension. Learners will be introduced to the vocabulary-comprehension connection and how recognizing genre and literary and informational elements of text improves comprehension. During this course, the learner will practice selecting, implementing, and evaluating appropriate strategies for use with text comprehension instruction.

EDAM-5063. DEVELOPING READING THROUGH WRITING**Credits: 3**

This course focuses on using research-based strategies to develop vocabulary and comprehension. Learners will be introduced to the vocabulary-comprehension connection and how recognizing genre and literary and informational elements of text improves comprehension. During this course, the learner will practice selecting, implementing, and evaluating appropriate strategies for use with text comprehension instruction.

EDAM-5064. INSTRUCTIONAL STRATEGIES TO SUPPORT INDEPENDENT READERS**Credits: 3**

In this course, teachers will develop an understanding of instructional practices for supporting their students as independent readers. Learners will practice applying knowledge in the following areas: Guided Reading, Matching Texts with Readers, Independent Reading, and Literature Study. During the culminating activity, learners will synthesize their learning by developing a comprehensive weekly schedule incorporating the key components of a reading block.

EDAM-5065. LITERACY LEADERSHIP AND COACHING**Credits: 3**

In this course learners will explore the three areas of expertise required of all 21st century reading specialists: instruction, leadership, and assessment. Learners will study and practice leadership principles related to conducting meetings, providing professional development, and literacy coaching. In addition, learners will investigate the responsibilities of the reading specialist in writing proposals, developing external partnerships, and becoming an agent of change for the school's literacy program.

EDAM-5066. ACCOMMODATIONS AND ADAPTATIONS IN LITERACY FOR DIVERSE LEARNERS**Credits: 3**

In this course students will learn the dimensions of literacy and the analytic process to prepare for differentiation of instruction so that all children can access literacy instruction. The student will learn a problem-solving model guided by inquiry and resulting in learning activities that will address a child's specific literacy needs. Teachers will expand their repertoire for supporting students as literacy learners. They will learn to gather and interpret relevant information to differentiate instruction for diverse learners. These techniques will help teachers to provide instruction to a wide range of talents and abilities in the classrooms of today.

EDAM-5067. READING SPECIALIST INTERNSHIP**Credits: 6**

This culminating experience prepares students for the role of reading specialist while working in an instructional setting under the supervision of a licensed reading specialist. Interns will implement reading programs, plan interventions, and apply a range of reading assessments and instructional strategies in the diagnosis and remediation of reading problems. Interns will demonstrate the ability to manage the instructional environment and effectively communicate to promote the development of literacy.

Course Descriptions

EDAM-5068. EMERGENT LITERACY

Credits: 3

This course provides an in-depth examination of reading development from birth to kindergarten as well as child development as it relates to emergent literacy. This course is based on the combination of the scientifically based reading research approach to literacy instruction as well as the emergent literacy perspective, which creates a "value-added" or blended approach to language and literacy teaching and learning. Research literature will be reviewed as it pertains to children's literacy development and best practice instructional methodologies. Students will develop instruction based on the foundation of reading that includes oral language, phonemic and phonological awareness, as well as alphabet knowledge, vocabulary and comprehension.

EDAM-5069. DIAGNOSTIC ASSESSMENT & INTERVENTION IN LITERACY

Credits: 3

This course is designed to advance the knowledge of the participants to refine and expand the diagnostic and assessment process in determining reading difficulties and interventions. Research based strategies for the assessment and instruction of diverse learners will be examined.

EDIL. EDIL

EDIL-5001. VISION AND MISSION TO GUIDE INTERNATIONAL SCHOOLS

Credits: 3

Vision and Mission to Guide International Schools: This course enables participants to examine the importance of a school's vision and mission and identify methods to create a vision and mission that provide guiding principles for school direction. Students will explore processes to implement the vision and mission within a school and recognize how it should be regularly reviewed for its success and/or continuing appropriateness.

EDIL-5002. LEADING FOR STAFF AND STUDENT LEARNING IN INTERNATIONAL SCHOOLS

Credits: 3

This course equips future international school leaders with the knowledge and skills to develop and implement appropriate curriculum across grade levels. Students will learn how to make strong instructional decisions that are based on data as various approaches are taken to meet students' needs and support life-long learning.

EDIL-5003. GOVERNANCE IN INTERNATIONAL SCHOOLS

Credits: 3

This course equips students with the knowledge and skills to effectively govern a school board, as positive relationships are built with members, guidance in decision-making is provided, and each member is assisted to define their individual role and responsibilities. Participants will recognize the importance of a partnership that is exemplified by effective communication with the board in formal meetings, written reports, development plans, and professional dialogue. Participants will demonstrate their ability to successfully direct a board by creating an action plan.

EDIL-5004. INTERNATIONAL SCHOOL MANAGEMENT AND LEADERSHIP

Credits: 3

This course focuses on the many and varied responsibilities that a school leader takes on. These include that the mission and vision are clearly communicated to the school community and that they guide managerial and leadership decisions. Participants will demonstrate the importance of creating and maintaining systems and procedures through the use of technology to ensure the efficient and cost effective implementation of the educational program. Participants will identify a variety of leadership and management styles, explore examples of processes and procedures for school management, and investigate how to efficiently manage resources within a school.

EDIL-5005. BUILDING AND SUSTAINING A HEALTHY INTERNATIONAL SCHOOL CULTURE

Credits: 3

This course examines how school leaders can exercise effective cross-cultural communication to the wider school community and local communities as diversity is embraced and celebrated. Participants will learn how to promote cultural awareness as well as how to rectify conflicts and provide support while being sensitive to multi-national groups of students, families, and staff.

EDIL-5006. ETHICAL LEADERSHIP IN INTERNATIONAL SCHOOLS

Credits: 3

This course enables participants to examine how to exercise leadership practices and high-principled beliefs and values in the daily operations of a school. Participants will apply laws, regulations, and procedures wisely and deeply investigate the role of ethical leadership.

EDIL-5007. SITUATIONAL AWARENESS AND DIPLOMACY IN INTERNATIONAL SCHOOLS

Credits: 3

This course introduces students to the complexity of the legal and cultural situations within which they will be leading and managing. Participants will examine the importance of establishing a positive relationship with the school's local community, as its beliefs and values are recognized.

EDIL-5008. CONTINUOUS PROFESSIONAL GROWTH FOR INTERNATIONAL SCHOOL LEADERS

Credits: 3

This course is designed to provide students with a mentor with whom they can engage in conversations, participate in a PLC, and work together to complete the required assignments for the digital portfolio.

EDIM. EDIM

EDIM-501. COGNITION & TECHNOLOGY: ALIGNING BRAIN BASED RESEARCH & TECHNOLOGY INTEGRATION

Credits: 3

This course provides in-depth study of the processes required for students to process information, including perception, attention, memory, encoding, retrieval, problem solving, and the information processing requirements of reading and writing. How brain-based theory can be incorporated in the classroom using technology will be covered.

EDIM-502. PROJECT BASED LEARNING**Credits: 3**

This course will demonstrate to educators the benefits of project-based learning in the instructional environment. Strategies to transform learning into a more active, student-driven experience using technology tools for collaboration and connection to the world outside the traditional classroom will be explored.

EDIM-503. DIFFERENTIATION SUPPORTED BY TECHNOLOGY**Credits: 3**

This course will provide educators with techniques for using technology to help create a stimulating, effective classroom for all students including English language learners, special education students and students with a variety of learning styles. Specific challenges and processes for managing a differentiated instructional setting with accommodations for alternative teaching, learning and assessment will be discussed and researched. Students will explore the use of various technological tools to differentiate assessment of students' understanding and learning by using various assessment strategies such as instructional rubrics, student reflections and portfolios. Using technology to manage ongoing assessment for diverse learners will be explored.

EDIM-504. DIGITAL STORYTELLING**Credits: 3**

This course will demonstrate how audio, video, and interactive elements can complement and enhance classroom instruction. Students will understand the principles of digital storytelling and how this process can be used in the classroom. Students will develop storyboards and create rubrics for evaluating digital stories. Various software used for digital storytelling will also be explored.

EDIM-507. GLOBALIZATION AND ADVOCACY**Credits: 3**

This course examines the impact globalization and technologies have on education and the need for educators to adapt to the changing needs of a global society. In addition, the importance of advocacy and how it can affect change will be examined.

EDIM-508. DIGITAL MEDIA IN THE CLASSROOM**Credits: 3**

This course is designed to help educators integrate digital media tools with core academic content. Teachers will learn how to transform their classrooms into 21st century learning centers with cutting-edge, standards-based, and hands-on digital media projects that incorporate technologies like video on-demand from Discovery Education streaming, podcasting/vodcasting and shared-screen presentations. Imaginative ways to visualize ideas and concepts through the acquisition and manipulation of digital images will be explored.

EDIM-510. WEB 2.0: IMPACTING LEARNING ENVIRONMENTS**Credits: 3**

Students learn the core concepts of Web 2.0 and how it is impacting learning environments. The course focuses on Web 2.0 technologies and how these tools are shaping education by allowing users to publish and interact in new and different ways. Topics include social networking technology and online collaborative tools such as blogs, wikis, etc.

EDIM-511. PORTABLE VIDEO PRODUCTION & APPLICATION**Credits: 3**

This course provides a comprehensive introduction to the use of portable video recording and editing devices. Students will learn camera techniques and terminology. Applications for classroom integration will also be explored.

EDIM-513. INQUIRY BASED LEARNING**Credits: 3**

Inquiry-based instruction is a powerful way for students to learn through active engagement with their environment. Teachers who engage in this form of instruction orchestrate a learning environment that allows students to develop deep understanding and enriched knowledge about selected topics. Inquiry should be one of the methodologies that teachers employ in meeting the challenges of today's academic expectations. We live in an era of rapidly expanding knowledge, which highlights the need for students to be lifelong learners. Inquiry skills support students' abilities to question and methodically investigate a wide range of subject matter. This course will explore Inquiry as a teaching technique, utilizing technology to support the various stages of the process.

EDIM-514. INTERNET TOOLS FOR TEACHING**Credits: 3**

The course will explore an array of powerful tools and standards-based resources that will help educators move their students to proficiency and beyond. Tools that make the development of high quality lesson-plans, assignments, writing prompts, quizzes, and surveys easier for educators will be presented. Topics will also include the exploration of resources like classroom uses of the high-speed data transfer provided by Internet2 and the educational opportunities of virtual field trips.

EDIM-516. SUSTAINING DIGITAL LITERACY**Credits: 3**

This course will examine current issues and trends in educational technology. Topics will focus on skills pertinent to maintaining digital literacy, including use of communication and collaboration tools, analysis and digital curation of information, and evaluation of technological trends and associated pedagogy. Students will understand the importance of digital citizenship as it relates to the application of new technologies in the classroom environment and in education as a whole.

EDML. EDML**EDML-5000. FOUNDATIONS OF THE EDUCATION PROFESSION****Credits: 3**

Students are oriented to the education profession through foundational knowledge and field work required of teachers entering the profession. Graduate students seeking initial certification are required to complete this course in their first year of the program upon acceptance. A field experience is required as part of this course. Department permission required.

EDML-5001. TEACHING ADOLESCENT LEARNERS AT THE MIDDLE LEVEL**Credits: 3**

This course builds a deeper understanding of diverse adolescent learners at the middle level. Cognitive, emotional, and social needs of adolescents in middle school that inform innovative curriculum development, research-based instructional strategies, and effective assessment practices will be examined.

Course Descriptions

EDML-5002. MATHEMATICS IN MIDDLE LEVEL INSTRUCTION

Credits: 3

This course consists of an overview of basic concepts pertaining to the study of middle level mathematics (grades 4-8) with developmentally appropriate pedagogy for middle level mathematics instruction. This course is not required for students selecting a middle level mathematics concentration.

EDML-5003. SCIENCE IN MIDDLE LEVEL INSTRUCTION

Credits: 3

This course consists of the basic concepts pertaining to the study of middle level (grades 4-8) science. Topics include the main concepts within science inquiry, physical science, chemistry, earth and space science, and life science with developmentally appropriate pedagogy for middle level science instruction. This course is not required for students selecting a middle level science concentration.

EDML-5004. ENGLISH AND LANGUAGE ARTS IN MIDDLE LEVEL EDUCATION

Credits: 3

This course provides an overview of language arts and reading strategies for use at the middle level (4-8) with emphasis on the following: reading fiction and nonfiction texts, critical literacy, understanding different types of writing, and common approaches to composition. This course is not required for students selecting a middle level English concentration.

EDML-5005. SOCIAL STUDIES IN MIDDLE LEVEL EDUCATION

Credits: 3

This course presents the basic concepts pertaining to instruction of middle level (grades 4-8) social studies. Topics include the main concepts from within the social studies disciplines: U.S. history, world history, geography, government and civics, and economics. This course is not required for students selecting the middle level social studies concentration.

EDML-5007. DEVELOPMENT OF THE ADOLESCENT LEARNER AT THE MIDDLE LEVEL

Credits: 3

This course builds a deeper understanding of early adolescent learners with an emphasis on cognitive, emotional, physical, psychosocial, and abnormal development and how this can impact teaching and learning.

EDML-5008. STUDENT TEACHING INTERNSHIP IN MIDDLE LEVEL EDUCATION

Credits: 6

This is the culminating course for middle level certification (4-8). Students seeking initial Pennsylvania teaching certification will apply their knowledge of middle-level content and research-based practices in the field by working with young adolescents.

Pre-Requisites

Successful completion of all required EDML program coursework.

EDML-5009. INTERNSHIP IN MIDDLE LEVEL EDUCATION

Credits: 3

This is the culminating course for middle level certification (4-8). Students will apply their knowledge of content and research-based practices in the field by working with young adolescents. A 90-hour teaching internship is required for PA certified teachers having no documented evidence of successful teaching at the middle level. For initial certification, 12 weeks of student teaching are required.

Pre-Requisites

Successful completion of all required EDML program coursework.

EDML-5010. NUMBER THEORY FOR MIDDLE LEVEL EDUCATION

Credits: 3

This course examines topics that encompass the three main categories in the Number and Operations strand of Principles and Standards of School Mathematics (NCTM): understanding numbers and number systems, operations with numbers and how they relate to one another, computation and estimation. Also included are content-related pedagogy and best-practice instructional strategies.

EDML-5011. CONCEPTS OF MEASUREMENT FOR MIDDLE LEVEL EDUCATION

Credits: 3

This course explores concepts and procedures for measuring and learning about standard units in the metric and customary systems, the relationships among units, and the approximate nature of measurement. Topics are how measurement can illuminate mathematical concepts such as irrational numbers, properties of circles, and area and volume formulas. Also included are content-related pedagogy and best-practice instructional strategies.

EDML-5012. DATA ANALYSIS, PROBABILITY AND STATISTICS IN MIDDLE LEVEL EDUCATION

Credits: 3

This course introduces statistics as a problem-solving process. Skills are built through investigations of ways to organize and represent data and describe and analyze variation in data. The association between two variables, probability, random sampling, and estimation are covered. Also included are content-related pedagogy and best-practice instructional strategies.

EDML-5013. ALGEBRAIC CONCEPTS IN MIDDLE LEVEL EDUCATION

Credits: 3

This course explores the 'big ideas' in algebraic thinking. Topics include algebraic thinking, patterns in context, functions and algorithms, proportional reasoning, linear functions and slope, solving equations, nonlinear functions, and algebraic structure. Also included are content-related pedagogy and best-practice instructional strategies.

EDML-5014. GEOMETRY ESSENTIALS IN MIDDLE LEVEL EDUCATION

Credits: 3

This course introduces the essentials of geometry as a method for problem solving. Content includes exploring the properties of geometric figures, making constructions using pencil and paper and dynamic software, using mathematical language to express ideas to justify reasoning while exploring the basis of formal mathematical proofs and solid geometry. Also included are content-related pedagogy and best-practice instructional strategies.

EDML-5015. MATHEMATICAL PROBLEM SOLVING IN MIDDLE LEVEL EDUCATION

Credits: 3

This course provides a context for teachers to explore issues about learning and teaching mathematics. Interactions of middle level students engaged in authentic mathematical activities are examined with implications for learning, teaching and assessment. This course is an elective in the middle level mathematics program.

EDML-5020. SCIENTIFIC INQUIRY FOR MIDDLE MIDDLE LEVEL SCIENCE

Credits: 3

This course focuses on addressing the demands required of students to comprehend discipline-specific scientific text. Strategies learned in this course support students in learning how to read a wide range of scientific genres. Students will focus on the implementation of inquiry learning and the positive aspects of this approach as related to various scientific disciplines.

EDML-5021. PHYSICS AND SCIENTIFIC TECHNIQUES FOR MIDDLE LEVEL EDUCATION

Credits: 3

This course presents the basic concepts pertaining to physical and chemical properties of matter. Topics include nuclear and anatomic structure, thermodynamics, heat, energy, matter, laboratory safety procedures, data manipulation, measurement and mathematics, and the methodology and philosophy of science, as well as effective pedagogy to teach these concepts. This course is an elective in the middle level science program.

EDML-5022. BIOLOGY AND LIFE SCIENCES FOR MIDDLE LEVEL EDUCATION

Credits: 3

This course presents the basic concepts pertaining to the study of the biological sciences. Topics include the nature of science, anatomy and physiology of structures associated with life functions of organisms, the cell, evolution, genetics, ecology, as well as effective inquiry-based pedagogy to teach these concepts.

EDML-5023. PHYSICAL SCIENCES FOR MIDDLE LEVEL EDUCATION

Credits: 3

This course presents the basic concepts of physics including: basic relationships between matter and energy, mechanics, electricity, magnetism, and waves. Topics include the conservation of energy, heat and thermal dynamics, atomic and nuclear structure, electricity, and the effective pedagogy to teach these concepts.

EDML-5024. EARTH AND SPACE SCIENCES FOR MIDDLE LEVEL EDUCATION

Credits: 3

This course examines the essential concepts pertaining to the study of the Earth as a constantly changing and dynamic system. Major topics include astronomy, meteorology, oceanography, historical geology and physical geology, as well as effective inquiry-based pedagogy to teach these concepts.

EDML-5025. BASIC CHEMISTRY FOR MIDDLE LEVEL EDUCATION

Credits: 3

This course presents the basic principles of chemistry with an overview of theories and research addressing the chemical and physical properties of matter. Topics covered include atomic and molecular structure, chemical and physical properties, chemical bonding, and the phases of matter, as well as effective pedagogy to teach these concepts at the middle level.

EDML-5030. ADOLESCENT LITERATURE

Credits: 3

This intensive reading course presents major works and authors of adolescent literature explored within historical and cultural contexts. Critical approaches will be used to apply knowledge of various authors, and literary and historical periods.

EDML-5031. LITERARY FORMS & MEDIA LITERACY IN MIDDLE LEVEL EDUCATION

Credits: 3

This course will focus on literary devices, literary forms, and text structures for middle level learners. Media literacy will include common research techniques, appropriate documentation of sources to avoid plagiarism, and locating and evaluating sources including multi-media sources.

EDML-5032. READING STRATEGIES IN MIDDLE LEVEL EDUCATION

Credits: 3

The focus of this course is literacy development as it relates to middle level students, with emphasis on comprehension, fluency, vocabulary, and writing. The course also provides research and practical applications of literacy instructional strategies in the middle level classroom.

EDML-5033. TEACHING AND EVALUATING WRITING I IN MIDDLE SCHOOL

Credits: 3

The focus of this course is writing instruction and evaluation as it relates to middle level students. This course presents the teacher as writer and students will write for a variety of purposes. Elements of grammar are examined. Research on writing instruction, best practices, and assessment of writing will be addressed.

EDML-5034. TEACHING & EVALUATING WRITING II IN MIDDLE LEVEL EDUCATION

Credits: 3

This is the second part of the Teaching and Evaluating Writing series. The focus of this course is writing instruction and evaluation as it relates to middle level students. This course provides an in-depth examination of the traits of writing. Students will develop lessons, assessments, and instructional materials to effectively teach writing to adolescents.

EDML-5040. US HISTORY IN MIDDLE LEVEL EDUCATION

Credits: 3

This course provides knowledge and skills for teaching U.S. History at the middle school level. Chronological accounts of major developments in U.S. History, from colonization through the 20th century, will be explored to understand how major themes have shaped the growth of the United States, its people, and its culture.

Course Descriptions

EDML-5041. TEACHING GEOGRAPHY IN MIDDLE LEVEL EDUCATION

Credits: 3

Geographic literacy, map skills, physical geography, and human geography are explored within the context of middle school geography standards. Skills needed to teach fundamental knowledge related to U.S. and World geography and its relationship to patterns of cultural, governmental, and economic activities will be studied.

EDML-5042. GOVERNMENT AND CIVICS IN MIDDLE LEVEL EDUCATION

Credits: 3

This course provides the foundational knowledge required to teach government and civics at the middle school level. Key concepts include the study of the Constitution, federalism, political parties, and citizenship. International structures and systems will also be explored.

EDML-5043. WORLD HISTORY IN MIDDLE LEVEL EDUCATION

Credits: 3

This course focuses on major developments and themes related to World History. Skills needed to teach early humans and societies to the modern world at the middle school level will be studied, as well as relevant histories, cultures, and societal elements.

EDML-5044. FUNDAMENTALS OF ECONOMICS IN MIDDLE LEVEL EDUCATION

Credits: 3

This course differentiates between microeconomics and macroeconomics and teaches how that knowledge can be applied in the middle level social studies curriculum. Market structures, GDP, unemployment, and inflation are included as well as how government intervention and policy affect the US and global economies.

ENGLISH. ENGLISH

ENGLISH-431. STUDIES IN MEDIEVAL ENGLISH LITERATURE

Credits: 3

A study of English literature to 1500, exclusive of Chaucer.

ENGLISH-432. STUDIES IN SIXTEENTH-CENTURY LITERATURE

Credits: 3

The study of texts produced by the English Renaissance, focused on the evolution of literary, dramatic and cultural works from about 1485 to 1603.

ENGLISH-433. STUDIES IN SEVENTEENTH-CENTURY LITERATURE

Credits: 3

The study of seventeenth-century texts, focused on literary, dramatic, and cultural works from about 1603 to 1660.

ENGLISH-434. STUDIES IN EIGHTEENTH-CENTURY LITERATURE

Credits: 3

Study of eighteenth-century authors and culture.

ENGLISH-435. STUDIES IN ROMANTIC LITERATURE

Credits: 3

Study of the chief poets and prose writers of the Romantic Period.

ENGLISH-436. STUDIES IN VICTORIAN LITERATURE

Credits: 3

Study of major writers, works, and topics of the Victorian era.

ENGLISH-440. STUDIES IN CHAUCER

Credits: 3

A study of selected major and minor works by Chaucer.

ENGLISH-442. STUDIES IN SHAKESPEARE

Credits: 3

A study of selected plays by Shakespeare.

ENGLISH-444. STUDIES IN MILTON

Credits: 3

A study of Milton's selected poetry and prose.

ENGLISH-450. STUDIES IN THE ENGLISH NOVEL

Credits: 3

Study of the novel in English, excluding American writers.

ENGLISH-451. STUDIES IN POSTMODERNISM

Credits: 3

A study of the major postmodern writers from the 1960s to the present.

ENGLISH-452. STUDIES IN THE AMERICAN NOVEL

Credits: 3

Study of the American novel from its eighteenth-century beginnings to the present day.

ENGLISH-453. STUDIES IN POSTCOLONIAL LITERATURE

Credits: 3

Study of colonial and postcolonial literature that examines the effects of British imperial pursuits and provides an overview of major issues within postcolonial studies.

ENGLISH-455. STUDIES IN THE MODERN NOVEL

Credits: 3

Study of twentieth-century texts focused on a particular theme or movement, as determined by instructor.

ENGLISH-458. STUDIES IN CONTEMPORARY FICTION

Credits: 3

A study in fiction, including the novel, short story, and novella, written since World War II. Works from English, American and world literature may be included to reflect the diversity of contemporary literature and the emergence of post-modern themes and forms.

ENGLISH-461. STUDIES IN EARLY ENGLISH DRAMA

Credits: 3

Study of the drama from the tenth century to 1642; reading of plays by medieval and early modern dramatists exclusive of Shakespeare.

ENGLISH-463. RESTORATION AND 18TH CENTURY DRAMA

Credits: 3

Study of the drama from 1660-1780.

ENGLISH-465. STUDIES IN MODERN DRAMA

Credits: 3

Studies in major theatrical genres, themes, and playwrights of modern world drama through the mid-twentieth century.

ENGLISH-466. STUDIES IN AMERICAN OR BRITISH DRAMA

Credits: 3

A study of major American and/or British playwrights and movements, focus to be determined by instructor.

ENGLISH-468. STUDIES IN CONTEMPORARY DRAMA

Credits: 3

A study of major playwrights and theatrical movements in contemporary world drama from the mid-twentieth century to today.

ENGLISH-470. STUDIES IN MODERN BRITISH POETRY

Credits: 3

Study of major British poetry of the twentieth century.

ENGLISH-476. STUDIES IN MODERN AMERICAN POETRY

Credits: 3

Study of major movements and representative figures in modern American poetry.

ENGLISH-494. LITERARY CRITICISM

Credits: 3

A study of literary theory and techniques of analysis.

ENGLISH-497. SEMINAR

Credits: 3

Presentations and discussions of selected topics.

Pre-Requisites

Approval of department chairperson.

ENGLISH-498. TOPICS

Credits: 3

The study of a special topic in language, literature, or criticism.

ESL. ESL

ESL-501. APPROACHES TO TEACHING SECOND LANGUAGES

Credits: 3

This course will survey the field of methodology in second language teaching. Students will examine past and present second language learning and teaching experiences in a variety of contexts. The course does not promote any particular approach to second language teaching but rather presents an overview and examples of some approaches in the field of teaching second and foreign languages. Prerequisite course to all other ESL courses

ESL-502. LANGUAGE CONCEPTS FOR SECOND LANGUAGE LEARNING AND TEACHING

Credits: 3

This course introduces some instrumental concepts of linguistics, examining phonology, morphology, syntax, semantics, and discourse structure, with a focus on their importance to the teaching of foreign or second languages. Students will examine a wide range of concepts and discuss the many different approaches to the study of language, including those which stress the communicative and social aspect.

ESL-503. SECOND LANGUAGE ASSESSMENT

Credits: 3

This course introduces the key concepts of second language assessment, including validity, reliability; standards based instruction, standardized testing, and second language test design and evaluation. Students will participate in a 15 hour field experience culminating in a comprehensive case student of second language assessment policies. Prerequisite course to all other ESL courses

ESL-504. INTERCULTURAL COMMUNICATION FOR LANGUAGE TEACHERS

Credits: 3

This course examines contemporary theories of language and linguistics as they apply to communication. Students will discuss the theoretical aspects of language and culture; communicative competence, intercultural competence, and intercultural contact; issues of diversity and the impact these have on the language classroom and the language teacher. Emphasis will be placed on language and social interaction and pragmatics.

ESL-505. SECOND LANGUAGE

Credits: 3

This course aims to review current topics and research in the field of second language acquisition and to explore relationships between theory and practice. The course covers strategies, and styles of language development and looks at significant linguistic factors that influence the development of language in second language learners. Participants are exposed to the major theoretical issues, the latest areas of research, and the major methodologies in the field.

ESL-507. SOCIOLINGUISTICS AND SECOND LANGUAGE ACQUISITION

Credits: 3

This course examines concepts and issues in the field of sociolinguistics, with the main focus remaining on second language teaching and learning. Topics covered include the sociology of language, the ethnography of communication, pragmatics, and discourse and conversational analysis. Participants will demonstrate their understanding of these issues through discussion, field work exercises, and a final research paper containing a literature review and a design for an action research study that could be conducted in a second language classroom.

ESL-508. SECOND LANGUAGE PROGRAM DEVELOPMENT

Credits: 3

This course will introduce students to the theory and practice required for developing and implementing second language programs. Students will examine language policies and the role of language learning and how it impacts on textbook selection and curricular design. The course provides students the opportunity to explore the intricacies involved in developing and implementing English as a Second Language programs, and raises awareness of the cultural conflicts and biases, both social and linguistic, faced by newcomer, multilingual students. Students will apply their understanding of these issues in field-based assignments and by engaging in a curriculum and assess planning process for a specific context.

Course Descriptions

ESL-509. COMPUTER ASSISTED LANGUAGE LEARNING

Credits: 3

This course focuses on the theory and practical application of Computer-Assisted Language Learning (CALL) in second language teaching. Areas covered in the course include: an analysis of the history of CALL, current approaches used, exposure to various CALL software, and an introduction to on-line language teaching and learning. Students will demonstrate their knowledge of the material covered by developing a CALL project for second language learners.

ESL-512. ESL TEACHING AND EVALUATION FROM THEORY TO PRACTICE

Credits: 3

This capstone course provides practical field experience in lesson planning, L1/L2 research, administration, evaluation of teaching, curriculum and assessment, and the opportunity to reflect on applying theory to practice in the field of TESL. A culminating portfolio documenting evaluation experiences and demonstration of expertise in the field of TESL will be constructed and submitted as evidence of student mastery of TESOL standards.

ED. EDUCATION

EDUCATION-508. INTERCULTURAL COMMUNICATION

Credits: 3

This course examines the ways cultural differences, ethical perspectives, and characteristics of the communication process influence interaction in intercultural settings. The course focuses upon critical issues in intercultural communication. Special emphasis is given to intercultural competence in educational settings.

EDUCATION-510. PSYCHOLOGICAL FOUNDATIONS OF EDUCATION

Credits: 3

A study of human development and learning, application of psychological principles in the practice of education.

EDUCATION-511. PHILOSOPHICAL FOUNDATIONS OF EDUCATION

Credits: 3

An examination of philosophical issues which bear upon American education. The problem of relating theory to practice is considered.

EDUCATION-512. SOCIAL FOUNDATIONS OF EDUCATION

Credits: 3

An introduction to the history, scope, materials and methods of the sociological analysis of education. Instruction includes the concepts of culture, socialization, stratification, social control and change as they relate to formal education.

EDUCATION-513. COMPARATIVE FOUNDATIONS OF EDUCATION

Credits: 3

An analytic study of educational patterns in contemporary societies. Educational policies and institutions are studied in their cultural context. Educational patterns of developed and developing nations are described, analyzed and compared; examples from each pattern are examined.

EDUCATION-514. ISSUES IN EDUCATION

Credits: 3

An examination of contemporary issues in education and their historical perspectives. The development of school organizations and higher education; instructional programs and curricula; and the delivery systems and functions of education are examined in light of contemporary issues. A survey of American education from past to present is presented.

EDUCATION-515. COGNITION

Credits: 3

This course provides in depth study of the processes required for students to process information, including perception, attention, memory, encoding, retrieval, problem solving, and the information processing requirements of reading and writing. Consideration of problem solving in specific subject areas is also covered.

EDUCATION-517. PRINCIPAL AS AN EDUCATIONAL LEADER

Credits: 3

This course will focus on the leadership roles and responsibilities of the principal. Leadership theories, ethics, organizational models, data-driven decision making, managing change and conflict, effective communication, diversity, and community relations are critical areas that will be analyzed, assessed and practiced. This course requires a minimum of 30 hours of field experience. Students are conditionally admitted to the EDLS program until successful completion of this course. Required for K-12 principal certification.

EDUCATION-518. SCHOOL LAW

Credits: 3

An examination of school law at the federal, state and local levels; review, discussion and analysis of court decisions which affect schools.

EDUCATION-519. ISSUES, LAWS AND TRENDS IN EDUCATION

Credits: 3

(Students who have previously taken either [ED-514](#) or [ED-518](#) may not register for [ED-519](#).) This course will focus on an examination of school law at the federal, state and local levels through review, discussion and analysis of court decisions that affect educational institutions. The study of school law and American education will be centered on contemporary issues with consideration given to historical perspectives, accountability issues and future trends. Topics will include legal and ethical issues in instructional delivery systems and the functions of education. Required for the Classroom Technology, Educational Development & Strategies, and Special Education Programs for students beginning courses in Fall 2007.

EDUCATION-520. USING ASSESSMENT TO GUIDE INSTRUCTION

Credits: 3

An examination of various assessment strategies and current methods of assessment, through the study of theory and effective practices in assessment translated into design. The analysis of disaggregated student data to implement effective change in teaching and assessment practices will be explored. Research based strategies for the assessment and instruction of diverse learners will be examined. (Cross listed with [EDAM-5032](#)).

EDUCATION-521. STATISTICS IN EDUCATION

Credits: 3

Correlation and regression through statistical inference.

EDUCATION-522. CURRICULUM AND INSTRUCTION**Credits: 3**

The course will engage students in the study of school curricula in elementary and secondary education. Models and trends in curriculum development will be explored by examining past and present influences on curriculum. The needs of diverse learners will be addressed through a survey of the latest research addressing differentiated instruction and societal factors influencing achievement gaps. Participants will relate this knowledge to their delivery of curriculum to students.

EDUCATION-523. ADMINISTRATIVE LEADERSHIP IN CURRICULUM AND INSTRUCTION**Credits: 3**

This course familiarizes future principals with the nature of curriculum and the impact of national and state standards on the instructional program. The importance of the role of the principal in developing an organizational structure for curricular change to provide the most appropriate instructional environment for all students will be embedded throughout the course. This course requires a 30 hour field experience focusing on school curriculum leadership. Pre-requisite: [ED-517](#) Principal as Educational Leader Required for K-12 principal certification.

EDUCATION-524. ACTION RESEARCH FOR EDUCATIONAL CHANGE**Credits: 3**

Action research is applied research educators can do within the school to improve practice, from instruction to learning. Knowledge and skill will be in designing action research, using both quantitative and qualitative data collection methods, to inform and improve practice. (Cross-listed with [EDAM-5031](#))

EDUCATION-525. INTRODUCTION TO EDUCATIONAL RESEARCH / MASTER'S LEVEL**Credits: 3**

This course is designed to facilitate learning methods and techniques of educational research, critiquing published research and conducting a thorough and professional search for research literature on a selected topic.

ED-526. INTERNET LITERACY FOR EDUCATORS**Credits: 3**

(Previously titled Telecommunications for the 21st Century - do not repeat for additional credit)

This course will explore developmentally appropriate teaching and learning opportunities that are available to classroom teachers via the Internet. Students will learn to use various types of electronic communications including the development of curriculum web sites that address content standards and student technology standards. The use of technology to communicate with peers, parents and the larger community to nurture student learning will be explored. The safe and healthy use of technology resources to facilitate equitable access of resources for all students will be endorsed. Research of best practice regarding online pedagogy will be examined. **Required for Classroom Technology Program.**

ED-527. MULTIMEDIA DESIGN FOR DIGITAL LEARNING**Credits: 3**

(Previously titled Authoring Systems/Instructional Design - do not repeat for additional credit)

This course explores how multimedia is used for teaching and learning. Research-based principles of multimedia design will be explored to enhance competency and skills in multimedia development.

ED-528. PRINT MEDIA IN THE DIGITAL CLASSROOM**Credits: 3**

(Previously titled Using Print Media to Support Education/Desktop Publishing - do not repeat for additional credit)

This course will explore research-based visual design principles for the design and production of print and web-based media utilizing 21st century digital tools for teaching and learning. **Required for Classroom Technology Program.**

ED-529. DISTANCE LEARNING AND EPEDAGOGY**Credits: 3**

This course is designed to guide students through the process of adapting their current teaching materials for TeleTeaching. Educators will learn how to prepare themselves, their students and their materials for this teaching and learning environment.

EDUCATION-529. ADVANCED STUDIES IN TEACHING AND LEARNING**Credits: 3**

This capstone course offers a culminating experience to demonstrate the attainment and integration of program outcomes. Students will be provided an in-depth opportunity to synthesize learning, think critically about their role as life-long learners, and apply new knowledge in creative ways.

Pre-Requisites

Completion of required International Teaching and Learning program coursework. Department permission required.

ED-530. UTILIZING EMERGING TECHNOLOGIES TO IMPROVE LEARNING**Credits: 3**

This course is designed to help students understand different key learning theories and their effective use in the design of accessible learning activities. Students will apply learning theory principles to develop model lessons using emerging technologies. Students will also identify appropriate strategies and technologies to support equitable access and diverse learning styles. Using technology to accomplish data-driven decision-making will be explored. **Required for Classroom Technology Program.**

EDUCATION-531. CHILDREN'S LITERATURE**Credits: 3**

A study of methods and materials appropriate for elementary school instruction in literature.

EDUCATION-536. ELEMENTARY SCHOOL READING INSTRUCTION**Credits: 3**

Lectures and demonstrations cover the psychology of the reading process, appraisal of reading needs, directed reading activities, word recognition and comprehension abilities.

EDUCATION-537. READING DISABILITIES**Credits: 3**

Lectures and demonstrations cover the identification, diagnosis, and classification of individuals with reading problems at all ages and levels of instruction.

Pre-Requisites

[ED-536](#).

Course Descriptions

EDUCATION-540. SPECIAL METHODS IN SECONDARY SCHOOL INSTRUCTION

Credits: 3

Three credits
Section A Biology E History I Social Studies B Chemistry F
Mathematics J Educational Theater C Environmental Science G Physics K
Science D English H Reading

ED-541. DESIGNING MOTIVATION FOR ALL LEARNERS

Credits: 3

Students will design learning experiences and develop effective leadership strategies that promote motivation for all learners. Additionally, they will learn verbal encouragement techniques that motivate by reinforcing student effort and reducing risk and discover how purposeful work and goal achievement can support all types of learners.

ED-542. MEANINGFUL ACTIVITIES TO GENERATE INTERESTING CLASSROOMS (MAGIC)

Credits: 3

A hands-on course which offers students the opportunity to learn a variety of engaging activities to go beyond textbook and workbook instruction. Participation in over 60 activities provides practice in creating, evaluating, and adapting ideas to each participant's specific curriculum.

ED-543. ACHIEVING STUDENT OUTCOMES THROUGH COOPERATIVE LEARNING

Credits: 3

Designed to encourage teachers to use cooperative strategies appropriately in classrooms. Activities include simulations, use of cooperative learning models, and creation of lesson plans.

ED-548. PURPOSEFUL LEARNING THROUGH MULTIPLE INTELLIGENCES

Credits: 3

Based on the research of Howard Gardner, this course focuses on understanding each of the intelligences and identifying them. Discovery centers are used to experience each intelligence and teaching strategies and classroom activities that enhance the intelligences are designed by participants.

ED-552. TEACHING THROUGH LEARNING CHANNELS

Credits: 3

This course utilizes recent brain research, examines individual differences in learning styles, and develops adaptive teaching procedures to accommodate varying cognitive processes.

ED-553. BRAIN-BASED WAYS WE THINK AND LEARN

Credits: 3

This course will explore the four basic thinking skills of induction, deduction, analysis, and synthesis. Students will experience, model, and internalize specific techniques of brain-based teaching and learning and will integrate thinking processes into real-life applications.

ED-554. SUCCESSFUL TEACHING FOR ACCEPTANCE OF RESPONSIBILITY

Credits: 3

This course is designed to help experienced and beginning K-12 educators create a classroom environment in which responsible behavior is modeled, taught, and supported. Participants will explore the underlying causes of irresponsible behavior and learn specific strategies associated with four instructional approaches that empower students to be self-directed, responsible learners. As participants learn to mentor, model, coach, and facilitate responsible actions in their students, they likewise develop increasing responsibility and personal power in their own professional practice.

ED-555. CLASSROOM MANAGEMENT: ORCHESTRATING A COMMUNITY OF LEARNERS

Credits: 3

This course equips experienced and beginning K-12 educators with current, research-validated concepts and strategies for orchestrating classroom life and learning so that instruction flows smoothly, student misbehavior is minimized, and learning potential is maximized. Participants will learn strategies associated with seven key areas of expertise that collectively contribute to a teacher's classroom management effectiveness.

ED-557. DIFFERENTIATED INSTRUCTION FOR TODAY'S CLASSROOM

Credits: 3

This course equips experienced and beginner educators with the essential knowledge and skills to implement differentiated instruction (DI) successfully in their own classrooms. In a highly interactive learning environment that models the DI principles and processes, class members will gain expertise in understanding and implementing a broad range of strategies associated with the essential, distinguishing components of DI.

ED-559. BEHAVIORAL, ACADEMIC, AND SOCIAL INTERVENTIONS FOR THE CLASSROOM

Credits: 3

This course provides educators with research-based interventions in the behavioral, academic, and social areas of student performance. Through a multitiered response to intervention model, educators implement a solution-seeking cycle for gathering information, identifying issues, and planning and assessing early and effective interventions.

ED-560. BUILDING COMMUNICATION AND TEAMWORK IN THE CLASSROOM

Credits: 3

This course equips experienced and beginner educators with the essential knowledge and skills necessary to foster an emotionally engaging classroom. The selected strategies participants will learn and practice are designed to improve teacher expertise in five specific areas: leadership, communication and listening, positive thinking, student support, and team building.

ED-561. READING ACROSS THE CURRICULUM

Credits: 3

This course provides research-based active reading comprehension strategies that participants can apply to their grade level or content area. By learning how to implement these metacognitive reading strategies, participants will be able to plan lessons more effectively. Emphasis is on learning styles, types of text, notation systems, content-area reading, assessments, fluency, motivation, and grade-level vocabulary.

ED-569. TEACHING DIVERSE LEARNERS USING INCLUSIVE CLASSROOM PRACTICES**Credits:** 3

This course will focus on co-teaching models and differentiated instruction and enable teachers to effectively apply previous learning of content and pedagogy in an inclusive classroom environment to meet the needs of diverse learners.

EDUCATION-570. PROFESSIONAL AWARENESS FOR COOPERATING TEACHERS**Credits:** 3

This course is designed to identify the role of the cooperating teacher concerning the supervision of student teachers. The course presents a formal training program for cooperating teachers including strategies for the effective interaction with student teachers as well as crucial techniques of observation, supervision and evaluation.

Pre-Requisites

Admission to this course approved through application to the Education Department.

EDUCATION-571. SPECIAL EDUCATION PROGRAMMING AND ADMINISTRATION**Credits:** 3

This course will familiarize future principals with methods and strategies to design and implement programs for students with disabilities that are compliant with legal requirements and current research in improving student achievement. The importance of the role of the principal in developing an organizational structure that facilitates the most appropriate teaching and learning environment for students with disabilities will be embedded throughout the course. This course requires a 30 hour field experience focusing on special education administration from the principal's perspective. Pre-requisite: [ED-517](#) Principal as Educational Leader Required for K-12 principal certification.

EDUCATION-572. EXTENDED TEACHING**Credits:** 3

Students with appropriate teaching experience are assigned to a supervised teaching setting.

Pre-Requisites

Approval of education department chairperson.

EDUCATION-573. EVALUATION OF EDUCATIONAL PROGRAMS**Credits:** 3

Students will undertake advanced study in educational assessment strategies and program evaluation with a focus on student learning within the operation of these programs. It will encompass various types of assessment strategies and methods, as well as the analysis of assessment data to guide instruction and curriculum design. Instruction will focus on the principal's role in guiding teachers in the design of effective assessments and alternative assessment strategies, and the use of assessment in program evaluation. Working in collaboration with faculty, colleagues, and a practicing administrator, students will design a leadership plan of study for a topic in this area. The plan of study must directly relate to the role and responsibilities of the principal in this capacity. Sample topics can be drawn from such areas as: student assessment methods, evaluation of special and regular education programs, academic standards and the PA Assessment System or other related topics. Pre-requisite: [ED-517](#) Principal as Educational Leader. Required for K-12 principal certification.

EDUCATION-575. SCHOOL LAW FOR PRINCIPALS**Credits:** 3

This course focuses on current school law at the state and federal levels and its influence on the role and responsibilities of the principal in a K – 12 school system. Law, legislation, and court decisions that affect the principals' dealings with students and employees will be studied and analyzed in light of the historical context and current issues. Emphasis will be given to laws governing the management of special education services and programs and the mandates related to student achievement of state standards. Pre-requisite: [ED-517](#) Principal as Educational Leader. Required for K-12 principal certification.

EDUCATION-576. SCHOOL MANAGEMENT AND COMMUNICATIONS**Credits:** 3

This course focuses on the study of administrative functions in educational institutions. Topics include: school budget planning, facilities management, resource allocation, establishing and maintaining positive school and community relations, and effective communication strategies for principals. Pre-requisite: [ED-517](#) Principal as Educational Leader Required for K-12 principal certification.

ED-577. PRINCIPLES OF INFORMATION SECURITY**Credits:** 3

With focus on the educational environment, this course will discuss the principles of information security, building a clear understanding of the foundations of information security, the principles on which managerial strategy can be formulated and the technical solutions available to technology coordinators. Required for Instructional Technology Program.

Pre-Requisites

[ED-588](#).

EDUCATION-578. STAFF DEVELOPMENT AND SUPERVISION**Credits:** 3

This course focuses on staff development and teacher supervision. Models of supervision, such as clinical supervision and differentiated supervision, are examined. Case studies will be utilized to gain understanding of the teacher evaluation process. Mentoring and new teacher induction programs will be investigated. An overview of the laws and policies, which influence and govern these programs will be included. Pre-requisite: [ED-517](#) Principal as Educational Leader Required for K-12 principal certification.

ED-579. MEDIA DESIGN**Credits:** 3

This course is designed to give specific and realistic examples of how different types of media and instructional technology can complement each other in the computer age classroom. Emphasis will be given to the design and production of instructional materials using text, video, audio, and computer based and photographic formats for use in both distance learning and traditional classrooms. Required for Instructional Technology Program.

ED-580. INTRODUCTION TO EDUCATIONAL COMPUTING**Credits:** 3

The course will provide teachers with basic computer skills and experiences with exemplary courseware and utility software. This introductory course is especially designed for teachers who are computer novices who lack the skills necessary for advanced classroom technology courses.

Course Descriptions

ED-583. COURSEWARE DESIGN AND CONSTRUCTION

Credits: 3

Using state-of-the-art technology to design and construct appropriate courseware support and curricula. Topics include the use of authoring software, optical technologies, ISD (Instructional Systems Design) models and strategies geared towards proper courseware design. Required for Instructional Technology Program.

EDUCATION-585. INTEGRATING TECHNOLOGY INTO THE CURRICULUM

Credits: 3

The course will present models of instructional design to provide a theoretical framework in the application and integration of microcomputer technology into the K-12 curriculum. Participants will develop a portfolio of computer-generated materials for their classroom. Required for the Classroom Technology, Special Education, and Educational Development and Strategies Programs.

ED-587. TECHNOLOGY LEADERSHIP

Credits: 3

This course is designed to develop educational technology leaders who are knowledgeable and skilled in technology leadership practices that improve student learning and school operations in K-12 schools. It addresses skills and competencies necessary for the support and assessment of technology standards and will include issues and trends relevant to the field of educational technology. **Required for Instructional Technology degree and & the master's degree in Educational Leadership.**

ED-588. OPERATING SYSTEMS & NETWORKING

Credits: 3

An exploration into the design of present-day microcomputer systems. Topics include microcomputer architecture and hardware, telecommunications, networking and general operating systems.

Required for Instructional Technology Program.

ED-589. INSTRUCTIONAL TECHNOLOGY: MODELS AND METHODS

Credits: 3

A 'wide area' look into technology integration. An investigation into what the responsibilities of a technology coordinator will be - relating technology and thinking processes, the cognitive effects of technology integration, materials acquisition and placement and general administrative strategies.

Required for Instructional Technology Program.

EDUCATION-590. THESIS

Credits: 3

Three credits

ED-591. INTERNSHIP (INSTRUCTIONAL TECH)

Credits: 3

Participation in field experience to observe the use of technology to support instruction, the management of technology resources in educational settings, and the evaluation of effectiveness of technology resources for teaching and learning; application of technology resources to support instruction in classroom settings. **Required for PA Instructional Technology Specialist Certification.**

Pre-Requisites

[ED-587](#), [ED-588](#), [ED-589](#) (or equivalent) and permission of Director.

EDUCATION-592. K-12 PRINCIPAL INTERNSHIP

Credits: (parts a & b-two semesters at 3

Pre-Requisites

Completion of the 21 credits required for principal certification. Required for K-12 principal certification.

EDUCATION-594. WORKSHOP

Credits: 3

Three credits each semester Provides an opportunity for experienced teachers to develop study programs designed to meet their special needs. Students may receive credit more than once if there is no duplication in subject matter covered.

EDUCATION-597. SEMINAR

Credits: 3

An advanced course dealing with some significant issues selected by the instructor. The seminar technique provides a review of major problems based on the current level of knowledge in the area.

Pre-Requisites

Permission of instructor/department chairperson.

EDUCATION-598. TOPICS

Credits: 3

Advanced study of topics of special interest not extensively treated in regular courses.

EDUCATION-599. SHORT COURSES

Credits: 1-3

One to three credits These courses treat a variety of topics, usually on a condensed schedule basis. Designed to investigate problems in the field, these courses provide an opportunity for practicing professionals to study current issues under qualified leadership. Departmental approval is required if credits are to be applied to meet degree requirements. A maximum of six credits may be used as electives to meet degree requirements. Credit is given at the rate of one-half semester hour for each eight hours of class work.

ED-610. ETHICS FOR EDUCATIONAL LEADERS

Credits: 3

This course focuses on the principles, practices and issues related to ethics in educational leadership within a variety of institutional settings. The ethical dimensions of leadership will be examined through both traditional and nontraditional paradigms. Students will reflect on personal ethical stances, examine the influence of ethics and values on decision-making, and analyze and critique ethical issues in a variety of contexts to frame their professional ethical perspectives.

ED-612. LEADERSHIP, DIVERSITY AND SOCIETAL CHANGE

Credits: 3

This course examines the impact of diversity, culture, ethnic origin and societal change on educational institutions and the emerging leadership styles resulting from these factors. This course is designed to better prepare leaders to meet the challenges of cultural diversity and rapid societal change in organizations. Attention is given as to how language, gender, race, tradition, education, economic structure, societal transitions and global events interact with organizational philosophy to create behavioral norms at all levels. The influence of these factors on leaders' behaviors, as well as their interactions with diverse groups both inside and outside the organization, will be studied.

ED-614. ORGANIZATIONAL AND LEADERSHIP THEORY

Credits: 3

This course focuses on organizational and leadership theories as they relate to K-12 and higher education institutions. The central aim of this course is to enable students to understand the structure and function of organizations and leadership from multiple theoretical perspectives. Through the linking of theory to practice, future educational leaders will be empowered to make conscious, deliberate decisions utilizing multiple, and at times divergent, theoretical frames.

ED-616. PUBLIC RELATIONS: ISSUES AND TRENDS FOR EDUCATIONAL LEADERS

Credits: 3

This course will focus on understanding contemporary public relations issues and trends with emphasis on public relations in educational institutions, changes in society and in educational institutions, public opinions, and political contexts; understanding of public relations relative to public relations' theory and practice, legal and ethical aspects, technology, and public relations in a communication context; learning about educational leadership responsibilities relative to planning in public relations; setting goals and developing strategies, working with the media, responding to crisis, collecting and analyzing decision-oriented data, public relations in a funding campaign, and evaluating public relations programs.

ED-623. EDUCATIONAL TECHNOLOGY LEADERSHIP

Credits: 3

This course will focus on how to organize and provide leadership in instructional technology programs, facilities and resource management, including technological in-service training programs. This course will also include the laws and regulations that govern the selection and utilization of media, sources for funding, and collaboration on development of a grant proposal. Required for K-12 Administration and Educational Technology specialization.

ED-625. PROFESSIONAL DEVELOPMENT & SUPERVISION

Credits: 3

This course concentrates on the development and supervision of faculty and staff. A range of models of supervision that can be applied in all educational institutions, such as clinical and differentiated supervision, will be examined for their effectiveness in improving instructional performance. Case studies will be utilized to gain understanding of supervision and evaluation processes. The management and design of induction and professional development programs will be analyzed. The laws and policies that govern these programs, as well as employee rights and termination procedures, will be studied. Required for Ed.D. program/K-12 Administration specialization.

ED-626. POLITICS AND POLICY FOR EDUCATIONAL LEADERS

Credits: 3

This course will explore the roles of public policy and politics in education at the federal, state, and local levels. through the course students will examine policy models, frameworks, and processes as they relate to policy issues in the k-12 and higher education arenas. A second major area of focus will be the political forces that influence and shape decision-making processes, reform efforts, and community relations.

ED-627. ADVANCED ISSUES IN EDUCATIONAL LAW

Credits: 3

This course focuses on the most current laws at both the state and federal levels and their impact on the operation of educational institutions for leaders. Both state and federal statutes will be examined with a focus on accurate analysis and interpretation of the law through case reviews. Law, legislation and court decisions that may impact the rights and responsibilities of faculty, students and parents will be studied and analyzed. The course is structured to assist educational leaders in acquiring the knowledge and skills necessary to ensure that the management of their educational institution through adherence to the law produces a safe, efficient and effective learning environment for all students. Required for Ed.D. program/K-12 Administration, Curriculum and Instruction, and Higher Education Administration specializations.

ED-628. HUMAN RESOURCE DEVELOPMENT AND LABOR NEGOTIATIONS

Credits: 3

This course examines the influences of major theories of personnel leadership on public and private education. Students will learn about the use of resource management, including labor laws, labor negotiation protocols, recruitment, personnel assistance and development, and evaluation procedures. Also, students will learn to develop and implement professional development programs that reflect teacher/faculty development research and strategies that include technology utilization, simulations of various HRD functions such as labor negotiations focusing on differing perspectives that impinge on the process of creating agreement, living with the agreement, and seeking a successor agreement. Require for Ed.D. program/K-12 Administration and Higher Education specializations.

ED-629. STRATEGIC PLANNING FOR PUBLIC AND NON-PROFIT ORGANIZATIONS

Credits: 3

Students will learn about a variety of planning models, including the Pennsylvania Department of Education's Strategic Planning Model and the Strategy Change Cycle - a proven planning process used by a large number of organizations throughout the United States. Students will be provided detailed guidance on implementing the planning process and will acquire specific knowledge and skills to make the planning process work successfully in any organization. In addition, new information will be provided to students on creating public value, stakeholder analysis, strategy mapping, balanced scorecards, and collaboration. Finally, case study analysis and field assignments will serve as important component in this course. Required for Ed.D. program/K-12 Administration and Higher Education Administration specializations.

ED-632. COGNITION AND LEARNING

Credits: 3

This course covers the fundamentals of perception, memory, thinking, and emotion that collectively comprise human learning. This foundation of learning is what instruction, administration, and technology must support to promote student achievement. The last twenty-five years of brain research into learning styles, motivation, and learning science will be used to deduce sound learning and teaching practices.

ED-633. MEDIA DESIGN FOR INSTRUCTION

Credits: 3

This course will explore design and production of instructional materials using text, video, audio and photographic formats for use in both distance learning and traditional classrooms instruction. . Required for Educational Technology specialization.

Course Descriptions

ED-635. INTEGRATING TECHNOLOGY FOR DIVERSE LEARNERS

Credits: 3

The course will examine best practices for integrating technology into curricular planning and present models of instructional design for all learners. Required for Educational Technology specialization.

ED-637. SYSTEMS INFRASTRUCTURE & MANAGEMENT

Credits: 3

Students will explore the design of present-day technology infrastructures. Topics include computer hardware, telecommunications, networking and general operating systems. Required for Pennsylvania Instructional Technology Specialist certification.

ED-638. INFORMATION SECURITY

Credits: 3

This course will cover the principles of information security, within the educational environment, the foundations of information security, and the principles on which managerial strategy can be formulated and the technical solutions available to technology coordinators. Required for Pennsylvania Instructional Technology Specialist certification.

Pre-Requisites

[ED-637](#) Systems Infrastructure & Management.

ED-639. INTERNSHIP IN EDUCATION TECHNOLOGY LEADERSHIP

Credits: 3

This course is tailored to meet the needs of students who will work as leaders in technology within educational institutions. The internship is designed to provide experience in the completion of identified tasks related to technology under the guidance of a mentoring administrator. A Leadership Competency Portfolio and internship will provide evidence of the leadership competencies attained.

Pre-Requisites

Completion of the Ed.D. Leadership core and Educational technology courses with the exception of 639. Department permission required.

ED-640. INSTRUCTIONAL DESIGN AND DEVELOPMENT

Credits: 3

In this course students will analyze various theories of instructional design through research and application. Required for Educational Technology specialization.

ED-643. TRENDS AND INNOVATION IN INSTRUCTIONAL TECHNOLOGY

Credits: 3

This course will explore the present trends and future vision of technology as influenced by its foundations. Factors that are likely to influence the future of the instructional technology will be explored, such as distance education and virtual environments. Required for Educational Technology specialization.

ED-644. GRAPHIC DESIGN FOR INSTRUCTION

Credits: 3

This course will focus on the design and production of instructional computer graphics and graphic presentations. Professional, design software will be used for creative and efficient layout, editing, processing and file handling. Fundamental layout organization through the use of grid with emphasis on color, fonts and simple drawing techniques will be incorporated into the course. The value of communication and information design with graphics in the learning process will be presented.

ED-645. TECHNOLOGY SUPPORTED ASSESSMENT

Credits: 3

Students will research and explore traditional methods of educational assessment and consider ways technology can be used to augment assessment to enhance best practices for teaching and learning.

ED-646. ADAPTIVE AND ASSISTIVE TECHNOLOGY IN EDUCATION

Credits: 3

This course will provide an awareness of contemporary adaptive and assistive technologies for students with disabilities in an inclusive setting. Students will explore technology to support the needs of English Language Learners and the acquisition of a second language for all learners. Required for Educational Technology specialization.

ED-647. WEB DESIGN AND DEVELOPMENT FOR LEARNING

Credits: 3

Students will apply the tools and skills of competent designers as they construct web-based learning activities. Topics such as creative applications and project-based learning will be explored. Required for the Educational Technology specialization.

ED-650. CURRICULUM, INSTRUCTION AND ASSESSMENT

Credits: 3

This course will examine cognitive theories of learning for all learners, with a particular focus on research-based practices in instruction for diverse learners in contemporary school settings. Educational leaders will gain a strong background in differentiated modes of instruction, along with the coaching skills needed to work with instructors as they strive to improve and expand their pedagogy to enhance student learning. Current methods of curriculum and program design, development and evaluation will be studied. Implications for supporting and sustaining high-quality instruction and learning will be addressed through the relationships and importance of coherence among curriculum, instruction, and assessment. Required for Ed.D. program/K-12 Administration specialization.

ED-652. SPECIAL EDUCATION ADMINISTRATION

Credits: 3

The content of this course is composed of professional problems; standards and procedures; the history of special education, special education philosophy, legal provisions, rules and regulations; major developments and trends at federal, state and local levels; services of other organizations and agencies. Required for Ed.D. program/K-12 Administration specialization.

ED-654. SCHOOL FINANCE AND FACILITIES ADMINISTRATION

Credits: 3

The content of this course centers on administrative functions related to the management of school finance and facilities in educational institutions. Topics covered are budget planning related to facilities management, as well as resource allocation and scheduling to maximize the use of school facilities; school finance related to sources of revenue for capital projects and the impact of these projects on the allocation of resources, scheduling of programs, and use of personnel will be studied. Additional topics include management techniques, strategic planning approaches, building assessment, energy issues, technology in schools, community development and contract management. Required for Ed.D. program/K-12 Administration specialization.

ED-658. ADVANCED STUDIES IN SCHOOL DISTRICT LEADERSHIP**Credits:** 3

This course will prepare future school district leaders for complex situations and specialized functions that are performed as part of district oversight in the central office. Students will review their prior coursework in K-12 Administration by compiling and informally assessing their Leadership Competency Portfolio, and determine the focus areas to begin the superintendent internship.

Pre-Requisites

Completion of Ed.D. Leadership core and K-12 School Administration courses with the exception of ED-659. Department permission required.

ED-659. SUPERINTENDENT INTERNSHIP (90 HOURS)**Credits:** 3

This course will prepare future school district leaders for complex situations and specialized functions that are performed as part of district-wide oversight in the central office. Students will continue the superintendent internship, review prior learning in K-12 administration using the Leadership Competency Portfolio, and implement and complete the internship project.

Pre-Requisites

Completion of Ed.D. Leadership core and all K-12 School Administration courses. Department permission required.

ED-660. HIGHER EDUCATION INSTITUTIONS AND ADULT LEARNERS**Credits:** 3

This course engages doctoral students in an investigation of the history and development of higher education institutions, with emphasis on the adult learners who attend them. Included in this course is a comparative study of the philosophies, objectives and functions of various types of higher education institutions and the adult learning population in contemporary colleges and universities. The various settings in which adults learn and the variety of objectives adults have for learning are also studied. Required for Ed.D. program/Higher Education Administration specialization.

ED-662. FACULTY AND ACADEMIC GOVERNANCE IN HIGHER EDUCATION**Credits:** 3

The purpose of this course is to provide an intensive introduction to the organization and governance of American colleges and universities. It is designed to familiarize students with the faculty, academic and administrative contexts and organizational cultures within which they may work. The focus of study will include both individuals and groups (organizational behavior) and organizations themselves (organizational theory). Required for Ed.D. program/Higher Education Administration specialization.

ED-663. FACULTY DEVELOPMENT & CURRICULUM MANAGEMENT**Credits:** 3

Three credits This course will focus on faculty development related to scholarship, teaching, and service. The relationship between faculty development and curriculum, instruction, and assessment will be examined. Topics related to curriculum management will include syllabus development and program design, instructional delivery models, and assessment at the program and institutional levels, as well as the relationship of assessment to accreditation. Required for Ed.D. program/Higher Education Administration specialization.

ED-664. FINANCIAL MANAGEMENT IN HIGHER EDUCATION**Credits:** 3

The purpose of this course is to expose students to both theoretical and applied concepts of higher education financial management concepts and practices. Emphasis will be placed on developing familiarity with the financial terminology and competencies that are necessary for successful administrative performance within a higher education institution. Upon completion of the course, students should possess a greater understanding of the subject matter and inherent issues of higher education financial management. Required for Ed.D. program/Higher Education Administration specialization.

ED-665. INSTITUTIONAL ADVANCEMENT IN HIGHER EDUCATION**Credits:** 3

This course enables doctoral students to refine the knowledge, skills and dispositions needed to plan and execute sound and innovative approaches to advance the institution's mission by increasing private and public financial support, promoting awareness of the institution to key publics, and involving constituents in the life of the institution. Students will be involved in problem solving and decision-making related to institutional advancement. Traditional and evolving sources of financial support will be examined with an emphasis on grant writing. Required for Ed.D. program/Higher Education Administration major.

ED-668. STUDENT SERVICES AND ENROLLMENT MANAGEMENT IN HIGHER EDUCATION**Credits:** 3

This course examines the comprehensive nature of student affairs as a vital component in the evolving learner-centered environments of higher education. Theory and effective practice are used to guide the discussion, investigate the issues, and generate solutions. Students investigate and seek potential solutions to authentic problems facing leaders in student affairs, such as those concerning student enrollment management, student diversity, student induction, advising and counseling, placement testing, career development, residential life, food services, health services, student activities, Greek organizations, athletics, security and discipline. Required for Ed.D. program/Higher Education Administration specialization.

ED-669. INTERNSHIP IN HIGHER EDUCATION ADMINISTRATION (90 HOURS)**Credits:** 3

This internship is tailored to address the leadership needs and goals of students in higher education administration. It is designed to provide experience in the completion of identified administrative tasks within an institution of higher education under the guidance of a mentoring administrator. A Leadership Competency Portfolio and internship project will provide evidence of the leadership competencies attained. .

Pre-Requisites

completion of the Ed.D. Leadership core and Higher Education Administration courses. Department permission required.

ED-670. CURRICULUM THEORY**Credits:** 3

This course will focus on the theory of curriculum and its philosophical and historical foundations and the ideologies that influence and shape curriculum. governance, control, and macro and micro perspectives of curriculum will be examined.

Course Descriptions

ED-671. MEASUREMENT AND ASSESSMENT

Credits: 3

This course provides an introduction to issues in educational measurement and assessment with an emphasis on applications in both k-12 and higher education settings. Topics include: types of assessments including standardized tests; portfolios, performance tasks; computer adaptive tests; test development; item writing and analysis; test administration; evaluating tests and items including reliability and validity; and interpreting test results.

ED-672. CURRICULUM DESIGN AND INSTRUCTIONAL MODELS

Credits: 3

This course will engage students in the practical aspects of curriculum design and implementation, its evaluation, and the alignment of curriculum, instruction, and assessment, instructional models appropriate to addressing the needs of diverse learners in varied learning environments and delivery formats will be examined.

Pre-Requisites

[ED-670](#) and [ED-671](#)

ED-673. CONTROVERSIES IN CURRICULUM, INSTRUCTION, AND ASSESSMENT

Credits: 3

This course explores the varying attitudes and beliefs of teaching, learning, and assessment as they relate to present-day curricular controversies. Students will analyze the cultural and social contexts of early childhood education, k-12 schooling, and post-secondary schooling. Specific emphasis will be given to the relevant salience of class, race, age, and gender as they relate to the study of everyday inequities in pre-k-20 education.

ED-679. INTERNSHIP IN CURRICULUM AND INSTRUCTION

Credits: 3

This course is tailored to meet the needs of students who will work as leaders in curriculum and instruction within educational institutions. The internship is designed to provide experience in the completion of identified tasks related to curriculum and instruction under the guidance of a mentoring administrator. A leadership competency portfolio and internship project will provide evidence of the leadership competencies attained.

Pre-Requisites

completion of the Ed.D leadership core and curriculum instruction courses/department permission required.

ED-681. INTRODUCTION TO EDUCATIONAL RESEARCH

Credits: 3

This course is designed to provide foundational knowledge of quantitative and qualitative research methodologies and to develop skills in reading and evaluating the quality of research. Focus is placed on research design factors such as sampling, validity, reliability, statistical methods, and ethical safeguards. Required to be taken in the first year of the Ed.D. program.

ED-682. QUANTITATIVE METHODS FOR EDUCATIONAL RESEARCH I

Credits: 3

This introductory quantitative methods course will provide students with a fundamental understanding of the types of quantitative designs and statistical techniques used in education research. The course will use hands-on activities and emphasize the interpretation of data. Statistical software is used throughout the course.

Pre-Requisites

[ED-681](#) Introduction to Educational Research.

ED-683. QUALITATIVE METHODS IN EDUCATIONAL RESEARCH I

Credits: 3

This course will provide students with a foundational knowledge of qualitative research focusing on designs and methodologies, theoretical and interpretive frameworks, ethical considerations, standards of validation, and introductory data collection, analysis, and reporting.

Pre-Requisites

[ED-681](#) Introduction to Educational Research.

ED-684. SPECIAL TOPICS IN EDUCATIONAL RESEARCH

Credits: 1-3

One-Three Credits This is a one to three credit hour course open to students in the doctoral program in Educational Leadership, but specifically for those who have a background in educational research. Topics are designed to further student's understanding of educational research and can include topics like survey design and analysis, mixed method approaches, qualitative data analysis, or an in-depth look at a particular method of research. Prerequisites: [ED-681](#), [ED-682](#) or equivalent, [ED-683](#) or equivalent. Department permission required.

Pre-Requisites

[ED-681](#), [ED-682](#) or equivalent, [ED-683](#) or equivalent. Department permission required.

ED-685. QUANTITATIVE METHODS FOR EDUCATIONAL RESEARCH II

Credits: 3

This second-level quantitative methods course will provide students with the knowledge and skills necessary for using a variety of statistical methods in the analysis of educational research. This course covers advanced topics in quantitative research designs and statistical techniques. Statistical software is used throughout the course.

Pre-Requisites

[ED-681](#) and [ED-682](#). Department permission required.

ED-686. QUALITATIVE METHODS IN EDUCATIONAL RESEARCH II

Credits: 3

This course is intended for students interested in pursuing qualitative research. It is designed to provide students with an in-depth understanding of qualitative designs and methodologies as well as practice applying these designs and methodologies in original research. Through this course, students will build on the knowledge and skills learned in [ED-683](#), with an increased focus on data collection, analysis, and reporting.

Pre-Requisites

[ED-681](#) and [ED-683](#). Department permission required.

ED-697. DISSERTATION PROPOSAL SEMINAR**Credits:** 3

Doctoral students are required to register for 3 credits of dissertation proposal each semester until the proposal is successfully defended and meets all departmental requirements, at which time 3 credits will be awarded.

Pre-Requisites

Acceptance into the Ed.D. Program and successful completion of doctoral core and major coursework. Department permission required.

ED-698. DISSERTATION PROPOSAL**Credits:** 3

Doctoral students are required to register for 3 credits of dissertation proposal each semester until the proposal is successfully defended and meets all departmental requirements, at which time 3 credits will be awarded.

Pre-Requisites

[ED-697](#) Dissertation Proposal Seminar. Department permission required.

ED-699. DISSERTATION**Credits:** 3

Doctoral students are required to register for 3 credits of dissertation each semester until the dissertation is successfully defended and meets all departmental requirements, at which time 3 credits will be awarded.

Pre-Requisites

Successful completion of the proposal defense in 698. Department permission required.

ED-5001. SOCIAL & ETHICAL ISSUES IN DISTANCE LEARNING (WILKES)**Credits:** 3

This course will lead students through the historical development of online and other forms of distance education and the associated ethical and social issues that have accompanied them. Students will examine issues from multiple perspectives and formulate position statements that can be translated into policy and practice in educational settings.

ED-5002. INSTRUCTIONAL DESIGN FOR ONLINE EDUCATORS™ (PLS)**Credits:** 3

Students will explore instructional design theories and approaches in the e-learning environment in order to understand the basics of instructional design and philosophies of e-learning, as well as gain experience with online delivery and interaction techniques and tools.

ED-5003. FACILITATING ONLINE LEARNING COMMUNITIES™ (PLS)**Credits:** 3

Students will experience the strategies and best practices of successful online facilitation in order to engage diverse learners, support various learning styles, and handle conflict constructively. This course will focus on the practice of skills necessary to nurture a successful online learning community, manage myriad facilitator roles, and communicate positively and effectively.

ED-5004. ACTION RESEARCH IN THE E-LEARNING ENVIRONMENT™ (PLS)**Credits:** 3

Students will employ online data collection techniques, interpret the data to affect change in the online classroom, and develop a research plan that integrates and makes effective use of e-learning technology.

ED-5010. TEACHING 3-D IN A VIRTUAL ENVIRONMENT (WILKES)**Credits:** 3

Students will explore a variety of 3-D virtual worlds, including those designed for children, adolescent, and adult learners. Students will examine research and theory about 3-D and virtual learning and their pedagogical implications, as well as explore the social, interpersonal, cultural, instructional, and technical implications of virtual environments.

ED-5011. DIGITAL VIDEO IN INSTRUCTIONAL DESIGN AND DELIVERY (WILKES)**Credits:** 3

The course is designed to provide students with opportunities to apply instructional design principles to video production. Instructional strategies for higher order learning will be incorporated into video lessons created by students. Essential camera and editing techniques will be experienced as part of the course.

ED-5012. TRENDS AND INNOVATIONS IN INSTRUCTIONAL TECHNOLOGY (WILKES)**Credits:** 3

Students will explore the implications of current trends and possible innovations in technology related to online teaching and learning. Factors that are likely to affect the future of instructional technology will be examined, including developments of newer technologies, contributions of key leaders, and the effects of social, political, and economic changes on online learning. The value of technology in the improvement and accessibility of education will be explored both now and into the future.

ED-5020. USING ONLINE RESOURCES TO BRING PRIMARY SOURCES TO THE CLASSROOM™ (PLS)**Credits:** 3

Students will learn how to access and analyze primary sources, explore classroom applications, and develop authentic, engaging learning experiences for students. The course will enable students to discover how digital primary source archives can enhance and improve student learning.

ED-5021. BLENDED AND SYNCHRONOUS LEARNING DESIGN™ (PLS)**Credits:** 3

This course focuses on two different formats for online learning environments: blended and synchronous. Students will define these environments, understand the development process each one requires, and conclude with considerations for implementing each.

ED-5022. SIMULATIONS AND GAMING TECHNOLOGIES FOR THE CLASSROOM™ (PLS)**Credits:** 3

Students will examine contemporary gaming technologies, their pedagogical models, and how they may be used for learning. Students will critically evaluate learning games to determine how they relate to academic content and standards and identify how particular game mechanics appeal to diverse learners.

Course Descriptions

ED-5023. BUILDING ONLINE COLLABORATIVE ENVIRONMENTS™ (PLS)

Credits: 3

Students will experience the Web as a means of constructing new knowledge through conversation, networking, and collaboration. This course focuses on currently-available tools, such as blogs, podcasts, and wikis, and their utilization for learner engagement in research, writing, and learning.

ED-5024. EDUCATING THE NET-GENERATION™ (PLS)

Credits: 3

Students will explore the learning styles, expectations, and technical acumen of the Net-Generation and identify this generation's key educational and cultural influences then create pedagogy which meets their needs. Students will apply innovative techniques that today's generation values, including advances in technology, a team approach, and social networking.

ED-5041. COLLABORATIVE INQUIRY FOR STUDENTS: PREPARING MINDS FOR THE FUTURE

Credits: 3

This course provides educators with research-based strategies for designing and implementing collaborative inquiry for students. Collaborative inquiry fosters the skills students need now and in the future to develop a deeper understanding and mastery of content knowledge and skills. Participants will experience and evaluate the collaborative inquiry models of problem-based learning, hypothesis-based learning, project-based learning, Appreciative Inquiry, performance-based learning, and live-event learning. Participants will identify desired results and acceptable evidence by developing standards-based essential questions, topic questions, and assessments. Participants explore the role of the facilitative leader as they learn strategies for teaching collaboration and designing collaborative inquiry experiences.

ED-5042. CULTURAL COMPETENCE: A TRANSFORMATIVE JOURNEY

Credits: 3

This course equips experienced and beginning educators with the knowledge, awareness, and skills they need to work in today's diverse classroom settings for the goal of student success. Participants will have opportunities to critically examine how privilege and power impact educational outcomes and to understand the role of educators as agents of change for social justice. Learners will use the framework "know yourself, your students, and your practice" to better understand their roles in student achievement. By exploring diversity through multiple perspectives, participants will gain insight into how their own cultural lenses impact their relationships with students and families.

ED-5080. TECHNOLOGY FOR ASSESSMENT & ADAPTATION

Credits: 3

Technology for Assessment & Adaptation is designed to provide Instructional Technology Specialists with an understanding of how technology supports various types of educational assessments and the purpose of assessment in the decision-making process. In addition, this course will provide students with an understanding of the multi-disciplinary evaluation process and ability to articulate and analyze the findings presented in an evaluation report. **Required for Instructional Technology Program**

ED-5081. TECHNOLOGY TO SUPPORT ALL LEARNERS

Credits: 3

Technology to Support All Learners is designed to provide Instructional Technology Specialists with an understanding of the varied characteristics of learners with disabilities and identify appropriate instructional strategies and resources to support diverse learners to achieve success within the school culture. **Required for Instructional Technology Program**

ED-5082. TECHNOLOGY TO SUPPORT CURRICULUM & INSTRUCTION

Credits: 3

Technology to Support Curriculum and Instruction is designed to provide Instructional Technology Specialists with the ability to identify instructional technology resources to support diverse learners. The course focuses on specific exceptionalities and requires students to use quantitative reasoning strategies to analyze data and draw conclusions using various forms of school-wide and district-wide data.[Note: * Courses focused on adaptations and accommodations & ELL 9 + 3 requirements of PA §49.13] **Required for Instructional Technology Program**

EE. ELECTRICAL ENGINEERING

EE-403. COMPUTATIONAL TECHNIQUES IN ELECTRICAL ENGINEERING

Credits: 3

Fees: \$100

Application of MATLAB, LabVIEW, and PSPICE to solve problems in electrical engineering topics. Software design, implementation methodologies, software engineering, and procedural and data abstraction. Implementation methodology is based on object-oriented programming techniques using LabWINDOWS CVI (compiler). Students work on real-world design problems of increasing complexity. These will include graphical user interfaces (GUIs), event models, exception handling and multithreading. One Hour lecture and three hour lab per week Lab fee: \$100.

Pre-Requisites

Graduate standing

EE-405. ADVANCED LABORATORY EXPERIENCE FOR GRADUATE STUDENTS

Credits: 3

Laboratory and related analytical experience in different disciplines within electrical engineering, including but not limited to, electrical measurements, mechatronics, digital design, electromagnetics, and communications systems. Real-world design problems will be assigned. Three hour lab per week. Lab fee: \$100.

Pre-Requisites

Graduate standing

EE-410. LINEAR SYSTEM THEORY

Credits: 3

Linear spaces and linear operators; input-output systems and state variables; linear dynamical equations and impulse response matrices; controllability, observability and their applications to minimal realizations; state feedback controllers and observers; multivariable systems.

EE-414. MODERN CONTROL SYSTEMS**Credits:** 3

Mathematical modeling of linear and non-linear systems. Block diagram, signal flow graph, and state-space representation. Time response, stability, and steady-state error analysis. Root-locus and frequency response techniques. Controller and observer design. Optimal and robust control.

Pre-Requisites

Graduate standing

EE-415. DIGITAL CONTROL SYSTEMS DESIGN**Credits:** 3

Review of design and compensation of control systems. State space analysis of continuous-time and discrete-time systems; discrete-time observations, control and feedback; digital regulators design; digital tracking systems design; controlling continuous-time systems.

Pre-Requisites[EE-414](#)**EE-416. ROBOT VISION****Credits:** 3

Image formation and image sensing; binary images; geometrical and topological properties; reflectance map; photometric stereo, shape, and shading; motion field and optical flow; extended Gaussian images; picking parts out of bin.

Pre-Requisites

First course in Robotics

EE-418. CONTROLS AND KINEMATICS IN NAVIGATION**Credits:** 3

Theory of kinematics with application to terrestrial navigation using inertial instrumentation. Accelerometer, gyroscope, stable platform and inertial mechanizations. Space stable, local level and strapdown navigator configurations and error analysis. Integrated navigation using complementary and Kalman filter techniques.

Pre-Requisites[EE-318](#), [EE-460](#)**EE-421. POWER SYSTEM ANALYSIS****Credits:** 3

Review of power generation schemes. Transmission line calculations and power system representation; network solution by matrix transformations; symmetrical components; symmetrical and unsymmetrical fault analysis of power systems; load flow analysis.

Pre-Requisites[EE-321](#)**EE-425. POWER ELECTRONICS****Credits:** 3

SCR characteristics; turn-on and turn-off mechanisms; SCR connections; power and switching devices, including UJT, triac and special devices; AC power control: full-wave control, half-wave control, and phase control; line-commutated converters and inverters; chopper circuits; applications.

Pre-Requisites[EE-252](#), [EE-321](#)**EE-432. ELECTROMAGNETIC FIELDS AND WAVES****Credits:** 3

Maxwell's equations; energy and momentum in the electromagnetic field; plane, cylindrical, and spherical waves; boundary conditions; cylindrical waveguides; cavity resonators; scattering by a sphere and other geometries.

Pre-Requisites[EE-337](#)**EE-435. MICROSTRIP CIRCUIT DESIGN****Credits:** 3

A review of TEM mode transmission line theory. Static TEM parameters and design; discontinuities in microstrip and coupled microstrip lines; design examples of passive microstrip elements; narrowband and wideband microwave amplifiers.

Pre-Requisites[EE-335](#)/[EE 337](#)**EE-436. ANTENNA THEORY AND DESIGN****Credits:** 3

Electromagnetic vector potentials; Green's functions; radiating systems; image theory; reciprocity; directional arrays; linear and broadband antennas; moment method; aperture antennas; microstrip antennas, and antenna synthesis.

Pre-Requisites[EE-337](#)**EE-441. DIGITAL SYSTEMS DESIGN****Credits:** 3

Advanced topics in digital design; combinational and sequential circuit modeling, fault modeling, digital design testing and testability, design to test principles, and basic concepts in fault tolerant design.

Pre-Requisites[EE-241](#)**EE-442. MICROCOMPUTER OPERATION AND DESIGN****Credits:** 3**Fees:** \$100

Microprocessor architecture, microcomputer design, and peripheral interfacing. Microprogramming, software systems, and representative applications. Associated laboratory experiments consider topics such as bus structure, programming, data conversion, interfacing, data acquisition, and computer control. Two hour lecture and one two-hour laboratory a week. (same as [CS-429](#))

Pre-Requisites[EE-345](#)**EE-444. OPERATING SYSTEM PRINCIPLES****Credits:** 3

Analysis of the computer operating systems including Batch, Timesharing, and Realtime systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices. (same as [CS-426](#))

Pre-Requisites[CS-227](#)

Course Descriptions

EE-445. COMPUTER ORGANIZATION

Credits: 3

Number representation, digital storage devices and computational units, bus structures; execution sequences and assembly language concepts; control units with horizontal and vertical microcoding; addressing principles and sequencing; microprocessors; basic input and output devices; interrupts; survey of RISC principles including pipelined execution. (same as [CS-445](#))

Pre-Requisites

[EE-241](#)

EE-446. COMPUTER ARCHITECTURE

Credits: 3

A study of the design, organization, and architecture of computers, ranging from the microprocessors to the latest 'supercomputers.' (same as [CS-430](#))

Pre-Requisites

[EE-242](#) or [EE-342](#)

EE-451. OPTO-ELECTRONICS

Credits: 3

Electromagnetic theory; propagation of rays; propagation of optical beams in homogeneous and guiding media; optical resonators; interaction of radiation and atomic systems; theory of laser oscillators; some specific laser systems; second-harmonic generation and parametric oscillation; electrooptic modulation of lasers; optical radiation interaction of light and sound; propagation, modulation, and oscillation in optical dielectric waveguides; laser applications; fiber optics and couplers.

Pre-Requisites

[EE-337](#)

EE-460. STOCHASTIC PROCESSES IN ENGINEERING

Credits: 3

Review of probability. Random variables and random processes; functions of one and two random variables; expectations; moments and characteristic functions; correlation and power spectra; stationary and nonstationary processes, harmonic analysis of random processes.

EE-461. DIGITAL COMMUNICATIONS

Credits: 3

Sampling theory; analog pulse modulation; time-division multiplexing; baseband digital transmission; bandlimited digital PAM systems; synchronization techniques; PCM, PCM with noise, DPCM and DM; digital multiplexing; error correction and detection; linear block codes; convolutional codes; bandpass digital transmission; coherent and noncoherent binary systems; quadrature carrier and M-ary systems; information theory.

Pre-Requisites

[EE-361](#), [EE-460](#)

EE-465. DIGITAL SIGNAL PROCESSING

Credits: 3

Z transforms; Fourier transforms; discrete Fourier transforms; sampling theorem; analog filter approximations; digital filter realizations and topological properties; analysis and design of recursive (IIR) filters and non-recursive (FIR) filters; fast Fourier transforms.

Pre-Requisites

[EE-252](#)

EE-471. ADVANCED SOLID STATE DEVICES

Credits: 3

Review of semiconductor fundamentals. Physics, fabrication technologies, and operational characteristics of a variety of solid-state structures including p-n junctions, bipolar transistors, thyristors, metal semiconductor contacts, JFET and MESFET, MIS and CCD, MOSFET, microwave and photonic devices including IMPATT, BARITT, TED, LED, semiconductor lasers, photodetectors, and solar cells.

Pre-Requisites

[EE-271](#)

EE-474. INTEGRATED CIRCUIT DESIGN

Credits: 3

Model calculations, transfer characteristics and use of SPICE for MOS devices and circuits; basic logical units; integrated systems fabrication including scaling, channel properties, yield statistics, design rules and choice of technology; data and control flow including clocks, registers and PLA'S; design implementation from circuit topology to patterning geometry and wafer fabrication; CAD; overview of LSI and VLSI systems; architecture and design of system controllers; system timing (SPICE); physical aspects of computational systems; ASICs memories and other logical circuits.

Pre-Requisites

[EE-241](#), [EE-271](#)

EE-481. ADVANCED MICROELECTRONICS LAB

Credits: 3

Fees: \$100

Theoretical and practical aspects of techniques utilized in the fabrication of semiconductor devices. Techniques of wet chemistry; deposition and diffusion; advanced concepts of contamination control; defect-free processing and gathering; complete characterization including junction penetration, resistivity, and oxide thickness. Switching speed, junction characteristics, leakage and gain, ion implantation, and method of fabrication. Extensive use of process simulation programs such as SUPREM.

Pre-Requisites

[EE-271](#)

EE-482. ADVANCED COMMUNICATION AND ANTENNA LAB

Credits: 3

Fees: \$100

Characterization and measurement of microwave devices and systems; emphasis on antenna design and testing; utilization of the network analyzer and spectrum analyzer; antenna pattern measurements; communication link design; computer-aided design of active and passive microwave circuits; touchstone, optical signal generation and modulation.

Pre-Requisites

[EE-335](#)

EE-498. TOPICS IN ELECTRICAL ENGINEERING

Credits: 3

Three credits Selected topics in electrical engineering. These may include one or more of the following: control systems, information theory, signals and noise measurements, communication systems, navigational systems, network design and synthesis, solid state, quantum electronics, magnetic and non-linear circuits, digital and analog systems, computer systems, medical engineering, power systems and generation. May be repeated for credit.

EE-510. OPTIMAL FILTERING THEORY**Credits:** 3

Review of stochastic processes; stochastic integrals and differential equations; Wiener filtering; discrete Kalman filter; applications and additional topics on discrete Kalman filtering; continuous Kalman filter; discrete smoothing and prediction; additional topics on Kalman filtering.

Pre-Requisites

EE-410, EE-460

EE-514. OPTIMAL CONTROL THEORY**Credits:** 3

The calculus of variations and the minimum principle; optimal control of discrete-time systems; optimal control of continuous-time systems; dynamic programming; models of dynamic systems; optimal estimation; stochastic neighboring optimal control.

Pre-Requisites

EE-410

EE-516. ROBOTICS AND ARTIFICIAL INTELLIGENCE**Credits:** 3

Prospects for knowledge-based robots; robots and artificial intelligence; expert systems and knowledge-based languages; production-rule expert systems; search techniques; heuristic graph searching; AND/OR graphs; first order predicate logic; future prospects for knowledge-based robots.

Pre-Requisites

First course in Robotics

EE-521. COMPUTER AIDED ANALYSIS OF POWER SYSTEMS**Credits:** 3

Bus impedance and bus admittance matrices; sparsity programming and triangular factorization. Load-flow studies; Gauss, Gauss-Seidel, Newton-Raphson methods. Approximate, fast and special-purpose load-flow studies. Optimal dispatch: equal incremental cost rule; gradient dispatch; optimal reactive power dispatch methods.

Pre-Requisites

EE-421

EE-535. MICROWAVE CIRCUITS**Credits:** 3

Microwave networks; S-parameters and stability considerations; characterization of transmission line structures and discontinuities; models of microwave solid state devices; measurement techniques for modeling; design synthesis; optimization and analysis of microwave integrated circuits; numerical methods.

Pre-Requisites

EE-435

EE-541. MICROPROCESSOR-BASED SYSTEMS DESIGN**Credits:** 3

Brief review of directions in microprocessor development: single chip microcomputers, Reduced Instruction Set Computers (RISCs), and Multiple Data Stream processors; hardware and software aspects of the design of microprocessor-based systems; architecture and design of multiple computer and parallel processing systems; cache memory techniques and issues; bus standards and interfacing.

Pre-Requisites

EE-342

EE-560. DETECTION AND ESTIMATION THEORY**Credits:** 3

Probabilistic signal detection and parameter estimation theory. Decision criteria, performance, likelihood, Bayes and parameter estimation; random processes, detection and estimation of white and nonwhite Gaussian noise. Kalman and Wiener filters.

Pre-Requisites

EE-460

EE-561. COMPUTER COMMUNICATION NETWORKS**Credits:** 3

Data/computer communication network structures; the structure and function of network protocols; data link control procedures; multiple-access protocols; wideband data transmission media; functions and characteristics of devices used in computer communications; analysis of data/computer networks.

Pre-Requisites

EE-461

EE-562. OPTICAL COMMUNICATION**Credits:** 3

Structure and waveguiding fundamentals of optical fibers; signal degradation in optical fibers; optical sources and their characteristics; power launching and coupling; photodetectors; optical receiver operation; coherent and non-coherent detection; analysis and design of optical transmission links.

Pre-Requisites

EE-432, EE-461

EE-565. DIGITAL IMAGE PROCESSING**Credits:** 3

Scenes, images and digital pictures; linear operations on pictures; discrete picture transforms; random variables and random fields; visual perception. Sampling using array of points and orthonormal functions; quantization; Karhunen-Loeve, Fourier, Hadamard, and cosine compression; predictive block truncation, error-free compression; rate-distortion function. Enhancement: gray scale modification, sharpening and smoothing; restoration: inverse least-squares and recursive filtering, constrained deconvolution.

Pre-Requisites

EE-460

EE-568. MODERN NAVIGATION SYSTEMS**Credits:** 3

Overview of electronic navigation systems: Global Positioning Systems (GPS); application and status; concept and operation; accuracy and propagation consideration; GPS receiver; signal structure, integration principles for navigation systems; Kalman filtering; differential GPS.

Pre-Requisites

EE-418, EE-460

Course Descriptions

EE-571. MODERN SOLID STATE DEVICES AND DESIGN

Credits: 3

Semiconductor fundamentals at an advanced level. Silicon and GaAs, MOS devices; processing details; performance limitations; process design for given device specifications; limitations due to fabrication techniques; quantum phenomena in a variety of modern high performance devices; microwave semiconductor devices; integrated circuit design; VLSI design; computer aids for process and circuit design.

Pre-Requisites

EE-471

EE-590. PROJECT/THESIS

Credits: 1-6

One to six credits Students have the option to select a 6-credit or a 3-credit project to meet the degree requirement. Topics will touch on one or more of the following areas: Communications, Navigational Systems; Computers, Digital Systems; Microelectronics; Microwaves and Antennas; Power, Control Systems; and Software Engineering. Three faculty members constitute a Faculty Committee with the Project/Thesis Advisor as Chair. The project/thesis shall be presented in an open forum.

EE-598. ADVANCED TOPICS IN ELECTRICAL ENGINEERING

Credits: 3

Three credits Advanced topics in electrical engineering. These may include one or more of the following: control systems; navigational systems; information theory; signals and noise measurements; communication systems; network design and synthesis; solid state; quantum electronics; magnetic and non-linear circuits; digital and analog systems; computer systems; medical engineering; power systems and generation. May be repeated for credit.

EGM. ENGINEERING MANAGEMENT

EGM-510. ENGINEERING PROJECT DECISION PROCESSES

Credits: 3

Projects are assessed with respect to uncertainty (revenues, expenses, product/process performance) and risk. Cash flows are evaluated to estimate present values and quantify risks associated with various decision alternatives. Topics include depreciation strategies, make/purchase/rent choices, break-even and benefit/cost assessments, and decision analysis with imperfect information. Required of all students. Three hours lecture per week.

EGM-515. QUALITY PROCESSES FOR DESIGN AND PRODUCTION

Credits: 3

Applicable quality techniques are presented within the context of research, new product development, plant operations, product support, and risk reduction. Students will learn how to articulate objectives, identify desired outcomes and establish suitable metrics for performance management. Required of all students. Three hours lecture per week.

EGM-516. MANAGEMENT SCIENCE

Credits: 3

Students learn how to structure complex problems, analyze available options, obtain information from data, and how to formulate analytical models for making optimal decisions. Topics may include (but are not limited to) regression and correlation analysis, time series analysis, forecasting models, and quality and productivity management. Course activities may include case analyses, research, application of advanced techniques, or and/or utilization of various information technologies. Required of all students. Three lecture hours per week.

EGM-520. OPERATIONS ANALYSIS AND RESOURCE ALLOCATION

Credits: 3

Students will assess production flows and space/equipment/resource utilization for purposes of reducing production bottlenecks while maintaining/increasing facility utilization. Various quantitative analysis and optimization methodologies will be covered for solving linear and nonlinear optimization problems. Simulation and graphical approaches will be utilized to assess solution performance. Required of all students. Three hours lecture per week.

EGM-525. PROJECT ANALYSIS AND RESOURCE ALLOCATION

Credits: 3

A study of critical issues in the management of engineering projects including proposal development, mobilization, scope change, completion and termination. Performance metrics are considered in planning and tracking project cost, schedule, and resource requirements with CPM/PERT algorithms. Case discussions and a term project are included in the course. Required of all students. Three hours lecture per week.

EGM-530. STOCHASTIC MODELS IN ENGINEERING MANAGEMENT

Credits: 3

A review of engineering analytical methods and their application in strategic decision environments. Required case studies will require techniques such as Monte Carlo simulation, risk assessment, and failure modeling as the suitability and application of several engineering analytical approaches to operational analysis of business/industry decision processes. Required of all students. Three hours lecture per week.

EGM-534. MATERIAL & INTELLECTUAL PROPERTY

Credits: 3

A study of the history, fundamental strategies and issues relating to generating and protecting intellectual and material property rights. Topics include the subjects of and the present legal processes to protect trademarks, copyrights, patents, trade secrets, software and other intellectual property rights. Three lecture hours per week.

EGM-536. PRODUCT DESIGN & DEVELOPMENT

Credits: 3

This course focuses on the integration of the design, manufacturing, the ability to coordinate multiple interdisciplinary tasks and marketing functions in the process of creating new products. The course is intended to provide students with the necessary set of tools and methods for new product design and development. Several design frameworks are discussed in order to achieve a common objective. This course will reinforcement students specific knowledge from other courses through practice and reflection in an project-oriented setting. Three lecture hours per week.

EGM-538. AUTOMATION PRODUCTION AND SYSTEMS

Credits: 3

This course focuses on the use of a quantitative approach to simulate, analyze and optimize all engineering aspects of automated production systems. Several modeling frameworks are discussed, such as automata, State-charts, cutting-edge technologies and Petri nets. Solving automation problems is of critical importance to decrease the cost of production systems and increase the throughput and flexibility. This course aims to give the student a basic knowledge of the important results of current research on discrete event systems and how these results can be applied to production systems. Three lecture hours per week.

EGM-540. LEAN SIX SIGMA & LEAN MANUFACTURING

Credits: 3

This course focuses on developing the knowledge and skills of a typical industry based Six Sigma Green Belt candidate. The course includes the descriptive statistics and project management skills necessary to Define, Measure, Analyze, Improve and Control processes. Lecture topics include Six Sigma problem-solving techniques, continuous improvement, mistake proofing, Lean Six Sigma, Lean manufacturing, determining the cost of quality and more. Three lecture hours per week.

EGM-544. EMERGING TECHNOLOGIES

Credits: 3

This course aims to develop students' skills in monitoring emerging new technologies, innovation forecast and technology assessment, with an introduction of data mining tools and exploration of emerging technologies. Students will study new developments in emerging technologies, how to track pertinent developments, and discover what is going on in the research world. The course focuses on developing the capability to be a technology manager and a critical well-informed consumer of such technology. Three lecture hours per week.

EGM-545. APPLIED ENGINEERING ANALYSIS

Credits: 3

This course is intended for all engineering students and it provides a strong background in mathematical modeling of various systems relevant to mechanical, electrical and management problems. Typical topics covered include (but are not limited to) linear algebra, matrix and vector mechanics, eigenvalue problems, ordinary differential equations, Fourier analysis, partial differential equations and optimization. Three lecture hours per week.

EGM-580. GRADUATE PROJECT CONTINUUM

Credits: 1-3

One - Three Credits EGM students may elect a three-credit-hour industry-based project option. The student, working with industry, will select a project topic derived from an existing need/interest in industry under the guidance of a faculty project advisor selected by mutual agreement of the student and faculty member. When the project is completed and approved by the Project Advisor, bound copies of the approved report will be filed in the department office and in Farley Library for record. A grade will be awarded each semester the student is enrolled in EGM-580. At project completion, a completion grade will be awarded by converting one credit-hour of EGM-580 to one credit-hour of EGM-581 (Graduate Project Completion). EGM-580 credit does not apply toward meeting degree requirements until a grade for EGM-581 is recorded. Only two hours of credit for EGM-580 may apply toward degree requirements (although the student may enroll in a total of more than two credit hours of continuum if project completion extends to additional semesters).

EGM-581. GRADUATE PROJECT COMPLETION

Credits: 1

One Credit Recorded with grade by converting one credit-hour of EGM-580. Occurs upon completion of the graduate project, receipt of Project Advisor approval, and submittal of approved copies to the department office and Farley Library for binding and record.

EGM-590. THESIS CONTINUUM

Credits: 1-6

One -Six Credits Students may elect the six-credit-hour thesis option under the guidance of a Thesis Advisor who chairs the Thesis Committee. The Committee is comprised of three members; at least two members (including the Advisor) must be Wilkes faculty members. When the thesis is complete and has been defended with Committee approval in an open forum, bound copies of the approved thesis will be filed in the department office and in Farley Library for record. A continuum grade will be awarded each semester the student is enrolled in Continuum. A completion grade will be awarded by converting one credit-hour of EGM-590 Graduate Thesis Continuum to one credit-hour of EGM-591 Graduate Thesis Completion. EGM-590 credit does not apply toward meeting degree completion until a grade for EGM-591 is recorded. Only five hours of credit for EGM-590 may apply toward Engineering Management degree requirements (although the student may enroll in a total of more than five hours of continuum if thesis completion extends to additional semesters).

EGM-591. GRADUATE PROJECT COMPLETION

Credits: 1

One Credit Recorded with grade by converting one credit-hour of EGM-590. Occurs after successful defense of the Graduate Thesis before a Thesis Committee in an open forum, and after approved copies have been submitted to the department office and Farley Library for binding and record.

HISTORY. HISTORY

HISTORY-421. AMERICAN CULTURAL AND SOCIAL HISTORY

Credits: 3

An examination of differences and divisions within American society through such topics as social movements, demographic trends, gender, ethnicity and class, effect of industrialization and immigration, cultural expressions, religion, and the family.

HISTORY-424. AMERICAN ECONOMIC HISTORY

Credits: 3

A survey of the evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the development of the United States as an industrial world power since about 1850.

HISTORY-425. DIVERSITY IN PENNSYLVANIA HISTORY

Credits: 3

A study of the history of the Commonwealth with particular focus on ethnic and racial diversity.

HISTORY-428. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES

Credits: 3

A selective treatment of major themes in American foreign policy from the founding of the Republic to the present.

Course Descriptions

HISTORY-429. AMERICAN WOMEN'S HISTORY

Credits: 3

A study of the role, status, and culture of women in America beginning with the First Americans and European contact up to the present time.

HISTORY-431. COLONIAL AMERICA

Credits: 3

Discovery, exploration and settlement; development of social, political, religious and intellectual institutions; independence and political reorganization.

HISTORY-432. THE NEW NATION

Credits: 3

A study of America's social, cultural, economic and political development in the first generations of nationhood, 1783-1840.

HISTORY-433. VICTORIAN AMERICA

Credits: 3

A study of the development of the United States from the end of the Civil War through the end of World War I. Special attention will be paid to urbanization and industrialization and their effects on everyday life.

HISTORY-434. THE UNITED STATES, 1900-1945

Credits: 3

The emergence of the United States as a world power and the corresponding development of its political, economic, social, and religious institutions.

HISTORY-435. THE UNITED STATES SINCE 1945

Credits: 3

An examination of the political, social, and economic changes in the United States since World War II. Special attention is paid to America's dominant role in the immediate postwar world and how changing conditions over the past 40 years have altered this role.

HISTORY-445. HISTORY OF NORTHEASTERN EUROPE

Credits: 3

A study of the cultural, political, and intellectual history of the Poles, Czechs, Slovaks, Croats, Slovenes and Hungarians, who occupy the northern tier of Eastern Europe. Special attention is given to the roles of the Habsburg and Russian empires in shaping the historical destinies of these peoples and to the roots and consequences of the forces of nationalism in the region.

HISTORY-446. HISTORY OF THE BALKANS

Credits: 3

A study of the cultural, political and intellectual history of the Bulgarians, Serbs, Croats, Slovenes, Albanians, Greeks, Romanians and Turks, who occupy the southern, or Balkan, tier of Eastern Europe. Special attention is given to the roles of the Ottoman Turkish, Habsburg and Russian empires in shaping the historical destinies of these peoples, and to the roots and consequences in the region of such forces as Christian-Muslim cultural interrelationships and nationalism.

HISTORY-448. HISTORY OF RUSSIA

Credits: 3

A study of the political, social, and intellectual history of Russia. Emphasis is placed upon the emergence of Russia as a major power after 1700.

HISTORY-452. THE RENAISSANCE AND REFORMATION

Credits: 3

Within the political and economic framework of the period, study will be made of the culture of the Renaissance, the religious reform and conflicts resulting from the crisis in the sixteenth century.

HISTORY-453. AGE OF ABSOLUTISM

Credits: 3

The political, social, economic, intellectual, and cultural development of Europe and dependencies from 1600 to ca. 1750.

HISTORY-454. THE ERA OF THE FRENCH REVOLUTION AND NAPOLEON

Credits: 3

A study of the structure of the Ancient Regime and an examination of the causes, events, and consequences of the French Revolution culminating in the Napoleonic Empire.

HISTORY-455. EUROPE IN THE NINETEENTH CENTURY

Credits: 3

A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.

HISTORY-456. WORLD WAR I AND VERSAILLES EUROPE

Credits: 3

Examination of the international causes of World War I, the Treaty of Versailles, and the new Europe that resulted, leading to the outbreak of World War II in 1939.

HISTORY-457. THE WORLD SINCE 1945

Credits: 3

This course examines many important events and developments in the modern world since 1945. It considers incidents of largely historical significance, such as the Cold War between the United States and the Soviet Union, and those of continuing relevance, like the globalization and privatization of the economy.

HISTORY-476. WORLD WAR II

Credits: 3

Consideration of the causes of the war, military strategy and tactics, diplomatic interests of the participants, and resulting Cold War problems.

HISTORY-497. SEMINAR

Credits: 1-3

One to three credits Presentations and discussions of selected topics. (May be repeated for credit) Prerequisite: Approval of the instructor is required.

Pre-Requisites

Approval of the instructor is required.

HISTORY-498. TOPICS

Credits: 3

Special topics in history. This course will be offered from time to time when interest and demand justify it.

MBA. MBA

MBA-501. FOUNDATIONS OF BUSINESS

Credits: 3

This course provides a foundation for all functional areas of business, including accounting, economics, finance, information systems, international business, management, marketing, law, operations management, and statistics.

MBA-505. FOUNDATIONS OF MANAGEMENT**Credits:** 3

This course introduces the distinct objectives of the MBA program. Students will study social responsibility and diversity and how these relate to business ethics for ethical decision-making. Cross-cultural communication as used in a dynamic work environment is investigated from an executive perspective. Students are exposed to the variety of leadership forms in use at work. Professionalism is learned through the lenses of a global marketplace and team performance. Emphasis is placed on analyzing business problems while developing the use of the APA Reference Style.

MBA-512. BUSINESS RESEARCH DESIGN AND METHODS**Credits:** 3

This course presents methodology appropriate for conducting research in business organizations. It includes a brief review of introductory MIS principles, the business research process, and a discussion of ethics in the research process. The course will focus on research design and sampling methods, sources and collection of data, probability and probability distributions, estimation and hypothesis testing, and the presentation of data (both oral and written). The emphasis of the course is on data analysis and spreadsheet use in statistics and management science. Course activities may include case analyses, research, application of advanced techniques, and/or utilization of various information technologies.

Co-Requisites[MBA-501.](#)**MBA-516. TOPICS IN OPERATIONS MANAGEMENT****Credits:** 3

Operations management is an area of business concerned with the production of goods and services, and involves the responsibility of ensuring that business operations are efficient in terms of using as little resources as needed, and effective in terms of meeting customer requirements. This course will address select topics in operations management. The goal of the course is to enhance the student's ability to approach and understand various business-related problems by integrating operations methods and applications.

Pre-Requisites[MBA-512.](#)**MBA-520. MARKETING MANAGEMENT****Credits:** 3

This course presents a strategic foundation for marketing decision-making. It integrates the tactics of information gathering, environment analysis, competitive analysis, product positioning and the implementation of strategic positioning. Emphasis is placed on written and verbal communications skill development.

Co-Requisites[MBA-501.](#)**MBA-526. TOPICS IN MARKETING****Credits:** 3

This course will address select advanced topics in marketing. Topics will include business-to-business marketing, consumer behavior, international marketing, new product development, promotion management, and other current issues.

Pre-Requisites[MBA-520.](#)**MBA-532. MANAGERIAL ECONOMICS****Credits:** 3

Problems of the firm and how to solve them. Price and output determination with analysis of cost and demand functions in markets of various types as well as decision-making under conditions of uncertainty and over time. Emphasis is given to firm's role in the global economy and the theory of international trade. The course will deal with the application of economic theory to business practice.

Co-Requisites[MBA-501.](#)**MBA-536. ADVANCED TOPICS IN INTERNATIONAL BUSINESS****Credits:** 3

This course will deal with how and why the world's countries differ. It will address select topics in International Business. The topics have been chosen to emphasize recent global changes and development. The course will deal with the functions and forms of the international monetary system. It will examine the strategies and structures of international businesses. The implications of international business for International managers, and for their organization's strategy, structure, and functions. Our objective is to acquaint the student with the advanced topics in global environment of international business policy that underlies much business analysis and decision-making.

Pre-Requisites[MBA-501.](#)**MBA-537. GLOBAL BUSINESS EXPERIENCE****Credits:** 3

This course is a combination of readings, research, and direct experience. The course provides an overview of a Western European Society. A ten-day field trip in Western Europe is a major learning experience of the course. Site visits are made in a number of cities in European countries. Site visits include Cities, Regions, and Business and travel centers. Arrangements for travel are made during the summer and fall, and travel in the spring. The purpose of the course is to create a global learning experience using Western Europe as a medium to facilitate the student's understanding of the global business environment.

MBA-540. FINANCIAL MANAGEMENT**Credits:** 3

A survey of the tools and techniques currently employed by financial decision makers when evaluating organizational performance and developing future courses of action. Emphasis will be placed upon working capital management and capital budgeting techniques.

Co-Requisites[MBA-501.](#)**MBA-546. TOPICS IN FINANCE****Credits:** 3

This course will address select advanced topics in finance. Topics include, but are not limited to, financial markets and institutions, the theories and strategies of derivatives, organizational risk management and insurance, and financial modeling.

Pre-Requisites[MBA-540](#)

Course Descriptions

MBA-552. ORGANIZATIONAL BEHAVIOR AND LEADERSHIP

Credits: 3

The purpose of this course is to examine organizational and leadership issues in the private and not-for-profit sectors. The course emphasizes how to become an effective leader by achieving mastery over the noisy, incessant, and rapidly changing environment. The course focuses on three central issues: (1) what makes a person an effective leader; (2) how does a leader encourage high performance and build commitment; and (3) how does a leader translate intention into reality, communicate those intentions, empower others, and stay on course while knowing when to change.

Co-Requisites

[MBA-505.](#)

MBA-555. HUMAN RESOURCES LAW AND COMPENSATION

Credits: 3

This course offers a survey of best practices in the area of human resources, with particular attention toward responding to the legal and financial environments. Students will learn to analyze the impact that statutory, administrative, and case law have upon human resource management. Design, management, and administration of compensation methods, as well as recent developments in benefits packages, are covered.

Pre-Requisites

[MBA-501.](#)

MBA-560. FINANCIAL AND MANAGERIAL ACCOUNTING

Credits: 3

A basic understanding of both internal and external accounting principles and techniques with appropriate application to decision models. Financial and managerial accounting concepts and issues are considered from the viewpoint of the report users.

Co-Requisites

[MBA-501.](#)

MBA-566. TOPICS IN ACCOUNTING

Credits: 3

This course will address select advanced topics in accounting. Topics include corporate financial reporting, financial and tax planning, accounting policies and practices, advanced management accounting, and other current issues.

Pre-Requisites

[MBA-560.](#)

MBA-577. TOPICS IN HEALTH CARE MANAGEMENT

Credits: 3

This course will address select topics in health care management. The purpose of the course is to provide the student with an understanding of how applying managerial techniques can improve the delivery of high quality healthcare. Topics may include (but are not limited to) health law, epidemiology, marketing, finance, comparative health care systems, and public policy. Course assignments may include case studies, research and field interviews of acknowledged experts in the field.

Pre-Requisites

[MBA-501.](#)

MBA-580. BUSINESS AND PUBLIC POLICY

Credits: 3

Three credits This course introduces students to the various public policies that impact directly and indirectly on business policy formation. Included is analysis of the ways in which the interests of the customer/client, the creditor, the shareholder, the employee, the government, and the society interface with optimal decision-making by business organizations. The course utilizes current business issues to provide students with the opportunity to think and write critically and entrepreneurially, while being sensitive to ethical, global, and policy dimensions.

MBA-585. TOPICS IN ENTREPRENEURSHIP

Credits: 3

This course presents an exploration of entrepreneurship in its many forms and manifestations. In addition to entrepreneurship, the course will deal with innovation, venturing, and new product development. Topics will include processes, management practices, organizational culture, current practices and trends, and opportunities within a corporate environment.

Pre-Requisites

[MBA-501.](#)

MBA-591. STRATEGIC MANAGEMENT AND POLICY

Credits: 3

The capstone course integrates a business approach to strategic decision-making which encompasses the business functions of marketing, production, finance, and human resource management. The course will facilitate both conceptual and experiential integration of functional concepts and techniques from the core courses as well as enhance the written and oral communication skills of students.

Co-Requisites

[MBA-512, MBA-520, MBA-532, MBA-540, MBA-552, MBA-560, MBA-580.](#)

MBA-592. ADVANCED PROJECTS IN BUSINESS

Credits: 3

This course requires that students perform advanced research and writing, while developing and honing their professional skills. Topics must be approved by the instructor in advance and research must be based upon (a) Independent Study; (b) Internship/Consulting; (c) Community Service; or (d) Mentorship. It is expected that papers and other course products will meet the quality standards for publication by the Jay S. Sidhu School of Business and Leadership.

Co-Requisites

[MBA-512, MBA-520, MBA-532, MBA-540, MBA-552, MBA-560, MBA-580.](#)

MBA-598. TOPICS

Credits: 3

Special topics in a major field. This course will be offered from time to time as interest and demand justify it.

Pre-Requisites

[MBA-501.](#)

MBA-5032. FOUNDATIONS OF MICROECONOMICS

Credits: 1

A study of the essential foundations of microeconomics. The course will introduce the problem of scarcity and the concept of opportunity cost. Additionally, the course will focus on a variety of topics including the theory of the firm, and the efficiency of resource allocation under various market structures.

MBA-5041. FOUNDATIONS OF STATISTICS**Credits:** 1

This course introduces students to the essential elements of applied statistical analysis appropriate for business organizations. It is intended for students who have never studied business statistics or those wishing to refresh their knowledge of probability theory, descriptive statistics and data relationships. Spreadsheet software will be used extensively; students registering for this course must have basic working knowledge of Microsoft Excel.

MBA-5042. FOUNDATIONS OF OPERATIONS MANAGEMENT**Credits:** 1

This course teaches students how to obtain information from data, and how to build models for making decisions. The goal is to sharpen the student's ability to approach business-related problems by integrating methods and applications.

MBA-5043. FOUNDATIONS OF MIS**Credits:** 1

This course introduces the fundamental concepts underlying the design, implementation, control, and evaluation of business-oriented computer based information systems, office automation, information reporting, and decision-making.

MTH. MATHEMATICS**MTH-150. ELEMENTARY STATISTICS****Credits:** 3**Pre-Requisites**

MTH 94 or two years of high school algebra.

MTH-411. REAL ANALYSIS**Credits:** 4

A rigorous treatment of fundamental concepts in analysis, with emphasis on careful reasoning and proofs. Topics covered include the completeness and order properties of real numbers; limits and continuity; conditions for integrability and differentiability; infinite sequences and series of functions. Basic notions of the topology of the real line are also introduced.

Pre-Requisites

[MTH-202](#) (Set Theory & Logic) or consent of instructor

MTH-413. FUNCTIONS OF SEVERAL VARIABLES**Credits:** 3

A modern treatment of calculus of functions of several real variables. Topics include: Euclidean spaces, differentiation, integration and manifolds leading to the classical theorems of Green and Stokes.

Pre-Requisites

[MTH-214](#) (Linear Algebra) and [MTH-411](#) (Real Analysis) or consent of instructor.

MTH-414. COMPLEX ANALYSIS**Credits:** 3

Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities and residues.

Pre-Requisites

[MTH-212](#) (Multivariable Calculus) or consent of instructor.

MTH-431. ABSTRACT ALGEBRA I**Credits:** 4

A rigorous treatment of fundamental concepts in algebra, with emphasis on careful reasoning and proofs. Topics covered include equivalence relations, binary operations. Integers: divisibility, factorization, integers modulo n , elementary group theory, subgroups, cyclic groups, permutation groups, quotient groups. Homomorphisms and isomorphisms. Introductory topics in ring theory as time permits.

Pre-Requisites

[MTH-202](#) (Set Theory & Logic) or consent of instructor

MTH-432. ABSTRACT ALGEBRA II**Credits:** 3

A continuation of [MTH-431](#). Includes the study of polynomial rings, ideals, field extensions and Galois Theory.

Pre-Requisites

[MTH-431](#) (Abstract Algebra).

MTH-442. TOPOLOGY**Credits:** 3

An introduction to point-set topology, including a study of metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces.

Pre-Requisites

[MTH-411](#) (Real Analysis) or consent of instructor.

MTH-443. GEOMETRY**Credits:** 3

A study of selected topics from Euclidean and non-Euclidean geometry.

Pre-Requisites

[MTH-202](#) (Set Theory & Logic) or consent of instructor

MTH-451. PROBABILITY AND MATHEMATICAL STATISTICS I**Credits:** 3

Random variables, probability distributions, expectation and limit theorems, confidence intervals.

Pre-Requisites

A one-year calculus sequence or consent of instructor.

MTH-452. PROBABILITY AND MATHEMATICAL STATISTICS II**Credits:** 3

Hypothesis testing, non-parametric methods, multivariate distributions, introduction to linear models.

Pre-Requisites

[MTH-451](#) or consent of instructor.

MTH-454. STATISTICAL METHODOLOGY**Credits:** 3

This course emphasizes applications, using statistical computer packages (SPSS, JMP or BMDP) and real data sets from a variety of fields. Topics include estimation and testing; stepwise regression; analysis of variance and covariance; design of experiments; contingency tables; and multivariate techniques, including logistic regression.

Pre-Requisites

[MTH-451](#) or consent of instructor.

Course Descriptions

MTH-460. LINEAR PROGRAMMING

Credits: 3

Graphical linear programming, simplex algorithm and sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with [CS-460](#))

Pre-Requisites

Programming experience in a high-level language and completion of one semester of calculus.

MTH-461. APPLIED MATHEMATICS I

Credits: 3

Topics include inner product spaces, operator algebra, eigenvalue problems, Sturm-Liouville theory, Fourier series and partial differential equations.

Pre-Requisites

[MTH-211](#) (Differential Equations) and [MTH-212](#) (Multivariable Calculus) or consent of instructor.

MTH-462. APPLIED MATHEMATICS II

Credits: 3

Topics include matrices, linear mappings, the Jacobian, change of variables in integrals, the inverse and implicit function theorems, differential operators in rectangular and curvilinear coordinates, line and surface integrals and applications, potential theory, differential forms, and the General Stokes' Theorem.

Pre-Requisites

[MTH-211](#) (Differential Equations) and [MTH-212](#) (Multivariable Calculus) or consent of instructor.

MTH-463. OPERATIONS RESEARCH

Credits: 3

A survey of operations research topics such as decision analysis, inventory models, queueing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with [CS-463](#))

Pre-Requisites

Programming experience in a high-level language and completion of a one-year calculus sequence.

MTH-464. NUMERICAL ANALYSIS

Credits: 3

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science, and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with [CS-464](#))

Pre-Requisites

Programming experience in a high-level language and completion of a one-year calculus sequence.

MTH-465. NUMERICAL LINEAR ALGEBRA

Credits: 3

Direct and iterative methods for the solution of systems of linear equations, matrix decompositions, computation of eigenvalues and eigenvectors, and relaxation techniques. The theoretical basis for error analysis including vector and matrix norms. Applications such as least squares and finite difference methods. Offered spring semester of even-numbered years.

Pre-Requisites

MTH 214 and CS 125 (or equivalent programming experience)

MTH-470. READINGS IN MATHEMATICS

Credits: 3

Pre-Requisites

Consent of Mathematics Department Chairperson May be repeated for credit if a different topic is selected.

MTH-511. MEASURE AND INTEGRATION

Credits: 3

Measures, measurable functions, integration, convergence theorems, product measures, signed measures.

Pre-Requisites

[MTH-442](#) or consent of instructor.

MTH-513. FUNCTIONAL ANALYSIS

Credits: 3

Topics include: Banach spaces, L_p -spaces, Hilbert spaces, topological vector spaces, and Banach algebra.

Pre-Requisites

[MTH-411](#) and a course in linear algebra.

MTH-532. MODERN ALGEBRA

Credits: 3

A study of group theory (including the Sylow Theorems and solvable groups); ring theory (including the Noetherian rings and UFDs); modules, tensor algebra, and semi-simple rings.

Pre-Requisites

[MTH-431](#), and a course in linear algebra or consent of instructor.

MTH-542. ALGEBRAIC TOPOLOGY

Credits: 3

Polyhedra, simplicial homology theory, cohomology rings, and homotopy groups.

Pre-Requisites

[MTH-442](#).

MTH-590. THESIS WRITING

Credits: up-6

Pre-Requisites

Consent of Department Chairperson

ME. MECHANICAL ENGINEERING

ME-401. APPLIED ENGINEERING ANALYSIS

Credits: 3

This course is intended for physical science and engineering students. Topics include inner product spaces, operator algebra, eigenvalue problems, Fourier series, Sturm-Liouville theory, and partial differential equations. Cross list [MTH-461](#)

ME-402. ENGINEERING COMPUTATIONAL ANALYSIS

Credits: 3

This course introduces applications of Matrix algebra (Review only), solution of linear simultaneous equations, solving linear system of equations by iteration methods, roots of algebraic and transcendental equations, interpolation, methods of finding polynomial roots, Eigen values & eigenvectors, numerical integration, numerical differentiation, numerical solution of initial value problems, boundary value problems.

ME-411. PRODUCT DEVELOPMENT

Credits: 3

This course introduces organizational issues and decision-making for capital investments in new technologies. The commercialization process is traced from research and development and marketing activities through the implementation phase involving the manufacturing function. Term project is a commercialization plan for a new manufacturing technology.

ME-418. QUALITY CONTROL ENGINEERING

Credits: 3

This course addresses quality control in the manufacturing environment, statistical methods used in quality assurance, statistical process control.

ME-425. ENERGY SYSTEMS

Credits: 3

Three Credits This course introduces fundamental principals of energy transmission and energy conversion. Comprehension of the physical systems in which the conversion of energy is accomplished. Primary factors necessary in the design and performance analysis of energy systems three credits.

ME-427. TRANSPORT PHENOMENA

Credits: 3

This course introduces theory and applications of heat, mass, and momentum transport. The fluid dynamics topics such as conservation laws, laminar and turbulent flow, Navier Stokes equations of motion and other related topics will be covered. Topics include free and forced convection, boiling and condensation, and the analogy between heat and mass transport. Practical problems of engineering applications in different areas will be discussed.

ME-432. VIBRATION OF DYNAMIC SYSTEMS

Credits: 3

Fees: \$100

This course is an introductory course in mechanical vibration dealing with free and forced vibration of single and multi-degree of freedom for linear systems.

ME-436. SOLID MECHANICS

Credits: 3

This course is an introduction to continuum mechanics, variational methods, including vectors and tensors, state of stress and compatibility equation, plain stress and strain. Energy Principles and virtual work will be discussed.

ME-438. MACHINE DESIGN

Credits: 3

This course introduces design of machine elements and deals with theories of deformation, failure, and fatigue A study of shaft design, fasteners, welds, gears, ball roller bearings, belts, chains, clutches, and brakes.

ME-439. CLASSICAL MECHANICS

Credits: 3

This course is an introduction to classical mechanics. Topics covered include: Newtonian mechanics, oscillations, Lagrangian and Hamilton's principle, Dynamics of a systems of particles and rigid bodies.

ME-442. MATERIAL SCIENCE

Credits: 3

This course introduces advance materials for engineers, emphasizing the fundamentals of manufacturing/structure/property/function relation and applications. Topics include materials selection for machine design component in micro and nano-scales, biomaterials, nano-composites, and optimized materials for nano-sensors & actuator systems.

ME-451. MECHATRONICS

Credits: 3

This course is a multidiscipline technical area defined as the synergistic integration of mechanical engineering with electronic and intelligent computer control in the design and manufacture of industrial products and processes. This course covers topics such as actuators and drive systems, sensors, programmable controllers, microcontroller programming and interfacing, and automation systems integration.

ME-452. NANO-TECHNOLOGY

Credits: 3

This course explores the fundamentals of Nanotechnology and its applications for colloidal suspension, Electrophoretic deposition and nano sensing by understanding materials properties, micro-machining, sensor and actuator principles. Two hours lecture and three hours lab per week.

ME-454. CONTROL SYSTEMS

Credits: 3

Laplace transforms and matrices. Mathematical modeling of physical systems. Block diagram and signal flow graph representation. Time-domain performance specifications. Stability analysis; Ruth-Hurwitz criterion. Steady state error analysis. Root-locus and frequency response techniques. Design and compensation of feedback systems. Introductory State space analysis.

ME-498. ADVANCED TOPICS IN MECHANICAL ENGINEERING

Credits: 1-3

This course includes selected topics in the field of mechanical engineering. These may include one or more of the following: control systems, automation, robotics, manufacturing systems, solid mechanics, energy systems, fluid flow, acoustics, computer systems, bio-mechanics.

ME-501. GRADUATE EDUCATION CONTINUUM

Credits: 3

Three credits Recorded with grade for one credit-hour. Occurs as a continuum bases till successful completion of thesis or project.

Course Descriptions

ME-599. THESIS/PROJECT

Credits: 3-6

Three to Six credits Students have the option of selecting up to six credits-house of thesis or three credit hour of project under guidance of a thesis/project advisor. The thesis will have a committee of three members; at least two members (including the advisor) must be Wilkes faculty members. The thesis/project should be presented in an open forum.

NSG. NURSING

NSG-500. ADVANCED HEALTH ASSESSMENT

Credits: 3

This course presents an overview of the full and comprehensive health assessment of patients across the life span. Emphasis on multiple aspects of assessment including physical, functional, and mental health assessment along with transcultural variations, will prepare the student for advanced nursing practice. (Nurse Practitioner students are required to complete an onsite residency.)

NSG-501. THEORETICAL FOUNDATIONS OF NURSING SCIENCE

Credits: 3

This course emphasizes the systematic process of theory development in nursing. The role of traditional science in relation to other ways of knowing is explored. Students will describe, analyze, and evaluate current theories of nursing. The relationship of research and practice to theory is discussed.

NSG-502. ADVANCED NURSING RESEARCH

Credits: 3

This course builds on knowledge and skills developed in undergraduate research and statistics courses. Skills in the analysis and evaluation of nursing research are further developed. Students analyze the contributions of the empirical approach to the development of nursing science. Selected research designs and methodologies which are used to advance nursing knowledge are examined. Students are given the opportunity to critique and synthesize current research for its application to an identified problem in nursing practice.

NSG-504. ADVANCED ROLE DEVELOPMENT IN NURSING

Credits: 3

Examines the role development process and its applicability to the advanced practice role in nursing. The historical, theoretical, and conceptual basis of role development, advanced practice, and evaluation are explored. A framework for practice, which includes the sub-roles of direct care provider, educator, researcher, manager and consultant, is examined.

NSG-505. HEALTH CARE POLICY AND MODELS OF CARE

Credits: 3

Analysis of issues relative to advanced nursing practice. Assessment of proposed approaches to the resolution of issues, based on current literature and research findings, is done collaboratively in a seminar format.

NSG-506. ADVANCED PRACTICE IN ADULT GERONTOLOGY CLINICAL I

Credits: 3

Advance practice nursing students integrate theories from nursing and other sciences that are evidence-based and sensitive to cultural and ethical issues. Promoting quality outcomes in the adult-gerontology population across the spectrum of young adults, adults, and older adults is the focus of this clinical experience in primary care settings. Advanced health assessment, diagnostic reasoning, and development of therapeutic interventions for self-limiting conditions occurs. Opportunities for interdisciplinary experience and collaborative practice are provided. The seminar component of the course is designed to develop critical-thinking and clinical decision-making skills through case presentations. (Seminar, Residency and 250 clinical practice hours).

Pre-Requisites

NSG-500, 530, 533 and 550

NSG-515. ADVANCED PRACTICE IN ADULT GERONTOLOGY CLINICAL II

Credits: 3

Advanced Practice nursing students integrate theories from nursing and other sciences that are evidence-based and sensitive to cultural and ethical issues. Promoting quality outcomes in the adult and gerontology population across the spectrum of young adults, adults, and older adults is the focus of this clinical experience in primary care settings. Advanced health assessment, diagnostic reasoning and development of therapeutic interventions for complex health conditions occurs. Opportunities for interdisciplinary experience and collaborative practice are provided. The seminar component of the course is designed to develop critical-thinking and clinical decision-making skills through case presentations. (Seminar, Residency and 250 clinical practice hours)

Pre-Requisites

NSG-500, 530, 533 and 550

NSG-526. CLINICAL MODALITIES IN ADVANCED PSYCHIATRIC MENTAL HEALTH NURSING PRACTICE

Credits: 3

This course provides a foundation in the major systems of therapy for individuals and groups used in advanced psychiatric mental health nursing and other disciplines engaged in mental health practice. Focus will be on therapeutic modalities such as brief psychotherapy, group processes and practices, milieu therapy and crisis intervention as they relate to advanced nursing practice in mental health.

NSG-527. PSYCHOPATHOLOGY, THEORIES, AND ADVANCED CLINICAL MODALITIES

Credits: 3

This course focuses on the most frequently observed pathologies in psychiatry and mental health, the various conceptual models and theories related to the practice of psychiatric mental health nursing, and the most advanced clinical modalities congruent with the analysis of the best evidence.

NSG-530. ADVANCED PATHOPHYSIOLOGY**Credits:** 3

This course provides an overview of the normal physiologic and pathologic mechanisms of disease and serves as one primary component of the foundation for clinical assessment, decision-making, and management. The course will prepare the advanced practice nurse for interpreting changes in normal function that results in symptoms indicative of illness in patients across the lifespan.

Pre-Requisites

Graduate standing

NSG-533. ADVANCED PHARMACOLOGY**Credits:** 3

This course provides the basic principles of pharmacodynamics, pharmacokinetics, and pharmacotherapeutics for broad categories of drugs. Purpose of action, common interactions and contraindications of major drug categories are highlighted. Case studies are integrated to provide students the opportunity to demonstrate application of pharmacological theory in advancing nursing practice.

NSG-535. ADVANCED PRACTICE IN PSYCHIATRIC/ MENTAL HEALTH NURSING I**Credits:** 3

This foundational clinical course introduces students to advanced practice psychiatric nursing in a variety of mental health settings. Students acquire skills in completing comprehensive mental health assessments. Students identify and apply concepts, theories, and principles to the practice of individual, family, and group psychotherapy, with emphasis on process dynamics. Considerations and challenges in providing psychotherapy to culturally diverse individuals, families, and groups are explored and discussed. Skills are gained in assessing psychopathological symptoms across the lifespan and in implementing planned interventions. Students integrate theory and practice of the advanced practice psychiatric nurse in a supervised clinical practicum (Total: Residency and 250 practice hours).

Pre-Requisites

NSG-500, 530, 533, NSG 550 and 552

NSG-536. ADVANCED PRACTICE IN PSYCHIATRIC/ MENTAL HEALTH NURSING II**Credits:** 3

This clinical course focuses on refining assessment, diagnosis, and pharmacological and psychosocial management of individuals of all ages with mental illness. Individual, family, and group psychotherapies are refined. Students gain skills in identifying individuals/populations at risk for mental illness and primary prevention in mental health. Mental health needs of culturally diverse, rural, and underserved populations are explored. Leadership and advocacy roles of the advanced practice psychiatric nurse as an agent of healthcare policy change are emphasized. Students integrate theory and practice of the advanced practice psychiatric nurse in a supervised clinical practicum (Total: Residency and 250 practice hours).

Pre-Requisites

NSG-500, 530, 533, 550, and 552

NSG-540. THE NURSING CURRICULUM: DEVELOPMENT AND IMPLEMENTATION**Credits:** 3

This course provides a foundation to understand the core of knowledge of educational processes which undergird nursing education. Competencies needed by nurse educators are explored; principles, philosophies and theories of learning, curriculum development, professional socialization, and accreditation as well as legal requirements for nursing programs are discussed. The relationship between curricular design and accreditation standards is described.

NSG-541. TEACHING METHODOLOGIES AND STRATEGIES IN NURSING**Credits:** 3

Building on knowledge of curriculum and learning, approaches to classroom and clinical teaching are explored. Learning outcomes as they relate to instructional teaching/learning interventions are developed. The use of instructional technology is included.

Pre-Requisites

Graduate standing

NSG-542. EVALUATION IN NURSING EDUCATION**Credits:** 3

Evaluation methodologies from selection of applicants through the meeting of graduation requirements will be explored. Testing strategies and test reliability will be discussed. Classroom and clinical achievement will be included. Faculty evaluation as well as student measurement will be discussed.

NSG-544. CLASSROOM PRACTICUM IN NURSING EDUCATION**Credits:** 3

This practicum provides the student an opportunity to actively participate in a faculty or staff development role within an educational setting. The student is required to obtain a mentor who will provide classroom learning experiences. (100 practicum hours required).

Pre-Requisites

NSG-540, 541, 542

NSG-545. CLINICAL PRACTICUM IN NURSING EDUCATION**Credits:** 3

This practicum provides the student an opportunity to actively participate in a faculty or staff development role within an educational setting. The student is required to obtain a mentor who will provide teaching learning experiences within a clinical environment. (100 practicum hours required).

Pre-Requisites

NSG-544

Course Descriptions

NSG-550. DIAGNOSTIC REASONING FOR NURSE PRACTITIONERS

Credits: 2

The nurse practitioner will develop processes for formulating differential diagnoses of acute and chronic physical and mental illnesses in the primary care setting across the life span. A case-study approach is integrated to prepare students for management of health status of patients through the implementation of strategies specific to the synthesis of data from multiple sources that promote quality of care outcomes for patients.

Pre-Requisites

NSG-500, NSG-530, NSG-533.

NSG-551. MENTAL HEALTH PERSPECTIVES OF CULTURALLY DIVERSE, RURAL, AND UNDERSERVED POPULATIONS

Credits: 2

This course is designed to examine the mental health perspectives of culturally diverse, rural, and underserved populations. Topics include, but are not limited to: cultural competence, cultural bound syndromes, cultural assessment, challenges faced by PMH-NPs in the mental health care of minorities, immigrants, refugees, and other underserved populations, and factors influencing mental health care and services in rural settings. In addition, this course will examine how health care reform will affect diverse individuals with mental illnesses. Knowledge gained from this course can be integrated into clinical practice.

NSG-552. PSYCHOPHARMACOLOGY

Two Credits This course is designed to assist the P-MH nurse practitioner to develop competence in prescribing and monitoring psychopharmacological agents used in the treatment of common psychiatric-mental health disorders across the lifespan. This course will examine the major classes of psychopharmacological agents on neurobiological function with a particular emphasis on the clinical management of target psychiatric symptoms. Drugs of abuse, side effects, issues of polypharmacy, and management of advanced practice prescriptive privileges are also explored.

Pre-Requisites

NSG-533

NSG-553. ADULT HEALTH PERSPECTIVES OF CULTURALLY DIVERSE, RURAL, AND UNDERSERVED POPULATIONS

Credits: 2

The course is designed to introduce the advanced practice nursing student to the issues of culturally diverse, rural and underserved populations. The theory can be integrated into clinical practice for adult-gerontology patients and families to promote understanding of differences and issues that impact comprehensive planning of health care services.

NSG-554. ADVANCED PRACTICE IN ADULT-GERONTOLOGY I

Credits: 3

This course is designed to prepare advanced practice nursing students to provide acute primary health care to the adult-gerontology population. The course integrates nursing theories that are evidence-based with health assessment and diagnostic reasoning of acute primary care health problems. Health promotion, protection and disease prevention interventions are provided with consideration of culturally diverse populations.

Pre-Requisites

NSG-500, 530, 533 and 550

NSG-555. ADVANCED PRACTICE IN ADULT-GERONTOLOGY II

Credits: 3

This course is designed to prepare advanced practice nursing students to provide chronic primary health care to the adult-gerontology population. The course integrates nursing theories that are evidence-based with health assessment and diagnostic reasoning of chronic, primary health care problems. Health promotion, protection and disease prevention interventions are provided with consideration of culturally diverse populations.

Pre-Requisites

NSG-500, 530, 533 and 550

NSG-560. HEALTHCARE OPERATIONS FOR THE NURSE EXECUTIVE

Credits: 3

This course prepares the nursing executive by examining the multiple administrative areas necessary for success at an executive level. The differences between US health care policy and the health care policies of various other countries will be explored. An analysis of select health care administration topics through the use of both individual and collaborative learning will prepare students to succeed in an ever-expanding, constantly changing health care environment.

NSG-561. ORGANIZATIONAL LEADERSHIP FOR THE NURSE EXECUTIVE

Credits: 3

This course examines the executive level leadership skills necessary to excel within the rapidly changing health care environment of the future. Emphasis is placed on understanding how the individualized leadership styles of today's health care executives shape the culture and vision of the organizations of tomorrow. This course also provides an in-depth analysis of how building an autonomous, ethical, and diverse leadership team and workforce assists the executive in developing solutions to complex organizational problems.

Co-Requisites

Taken concurrently with NSG 563 for the first eight weeks.

NSG-562. ADVANCED LEADERSHIP TOPICS FOR THE NURSE EXECUTIVE

Credits: 3

This course synthesizes previously established theory and skill sets to explore select advanced topics in health care leadership. The issues explored will assist the executive nurse in leading a health care organization during times of crisis or conflict as well as prosperity. Emphasis is placed on understanding health care as an intricate, dynamic organism which is in continual need of attention.

Pre-Requisites

NSG-560 and 561

Co-Requisites

Taken concurrently with NSG 564 for the first eight weeks.

NSG-563. NURSE EXECUTIVE PRACTICUM I**Credits:** 3

This practicum course synthesizes previously established theory and skill sets to further develop the student's administrative abilities. By applying theories from other sciences and utilizing interdisciplinary experiences and collaborative opportunities, the student will further enhance the skills necessary to excel as a health care executive in an evidence-based, culturally sensitive environment. The seminar component of this course is designed to supplement previous theoretical applications and stimulate critical-thinking and decision-making. (250 clinical hours)

Pre-Requisites[NSG-560](#)**Co-Requisites**

This 16-week course is taken concurrently with NSG 561 for the first eight weeks.

NSG-564. NURSE EXECUTIVE PRACTICUM II**Credits:** 3

This practicum course synthesizes previously established theory and skill sets to further develop the student's leadership abilities. By applying theories from other sciences and utilizing interdisciplinary experiences and collaborative opportunities, the student will further enhance the skills necessary to excel as a health care executive in an evidence-based, culturally sensitive environment. The completion of an organizational needs assessment within this course is designed to supplement previous theoretical applications and stimulate critical-thinking and decision-making. (250 clinical hours)

Pre-Requisites[NSG-561](#)**Co-Requisites**

This 16-week course is taken concurrently with NSG 562 for the first eight weeks.

NSG-590. SCHOLARLY REVIEW**Credits:** 3

In this course the student will synthesize and review issues relevant to their specialty clinical practice. This course is designed as a review of the required masters level core nursing courses and specialty focused curriculum for advanced nursing practice. This course will provide an overview of both the required core nursing courses as well as each specific specialty course.

Pre-Requisites

Completion of Graduate Nursing Core and Concentration courses. Corequisites are at the discretion of the Director of Graduate Nursing Program.

NSG-600. NURSING INFORMATICS**Credits:** 3

Students use information systems to analyze patient data, perform research, and evaluate project outcomes. The course will include applications in computer-based patient records, data-base management systems, e-health, distance education, and research. Legal and ethical issues associated with computer use are examined.

Pre-Requisites

Doctoral standing.

NSG-601. BIostatISTICS**Credits:** 3

Statistics is the science whereby inferences are made about specific random phenomena on the basis of relatively limited sample material. It is widely used in biological, health, and social sciences, etc. Biostatistics is the branch of applied statistics that applies statistical methods to medical and biological problems.

Pre-Requisites

Doctoral standing.

NSG-602. ETHICAL PRINCIPLES FOR ADVANCED NURSING PRACTICE**Credits:** 3

This course will analyze a broad range of ethical principles that impact the health professions, from euthanasia and abortion to informed consent and behavior control. Examination of the ethical, moral, and legal obligations within selected decision-making frameworks will be completed. Strategies to assist in the resolution of ethical dilemmas will be developed through the application of selected theories and concepts. Interaction between ethical, legal, and political events that affect advanced practice nursing will be explored.

Pre-Requisites

Doctoral standing.

NSG-603. APPLICATION OF NURSING RESEARCH**Credits:** 3

This course analyzes research methods to appraise research literature for application to practice and evaluate practice outcomes in varied settings. Application of relevant research findings are used to generate practice guidelines, design evidence based interventions and examine patterns and predict outcomes. The collaborative role of the DNP in research is discussed.

Pre-Requisites[NSG-601](#)**NSG-604. EPIDEMIOLOGY AND ENVIRONMENTAL HEALTH****Credits:** 3

The purpose of this course is to examine the concepts and methods of epidemiological and environmental health analysis and their application to advanced nursing practice. The student will be able to integrate this knowledge into nursing practice in a variety of health care settings through research, program development, health policy and advocacy.

Pre-Requisites

Doctoral standing

NSG-605. COLLABORATION IN HEALTH CARE DELIVERY**Credits:** 3

This course focused on the knowledge and skills needed to promote collaboration with all members of the interdisciplinary health care team. Content will include exploration of the design, implementation, and evaluation of programs and policies for effective health care delivery.

Pre-Requisites

Doctoral standing

Course Descriptions

NSG-606. DIVERSITY AND SOCIAL ISSUES

Credits: 3

This course focuses on cultural and social issues affecting members of a global society. A critical appraisal of health care disparities is emphasized and strategies for quality improvement are analyzed.

Pre-Requisites

Doctoral standing

NSG-607. LEADERSHIP IN ADVANCED NURSING PRACTICE

Credits: 3

This course provides an opportunity for students to analyze theories of leadership and management as they relate to the multifaceted role in advanced nursing practice. The health care environment, with its ongoing changes in organization and financing, is impacted upon by changes in health policy, regulatory processes, and quality measures. The understanding of this content will prepare the student to provide quality cost-effective care, to participate in the design and implementation of care in a variety of health care systems, and to assume a leadership role in the managing of human, fiscal, and physical care resources.

Pre-Requisites

Doctoral standing.

PHA. PHA

PHA-453-456. NUCLEAR PHARMACY I & II

Credits: 3 each

The scientific principles relating to Nuclear Pharmacy will be discussed. Topics include radioactive decay, the interaction of radiation with matter, production of radionuclides radiation biology, instrumentation, health physics, radiation dosimetry, and laws and regulations. Radiopharmaceutical manufacturing and medical imaging will be introduced. Three hours per week of discussion, laboratory, or recitation.

Pre-Requisites

P-2 or P-3 standing or consent of the instructor.

PHA-421, 423, 425, 426, 428, 430, 521, 523, 525, 526, 528 & 530 PHARMACOTHERAPEUTIC MODULES

Credits: 2 - 4

A four-semester, twelve-module sequence (three modules per semester) that integrates pharmacology, medicinal chemistry, pathophysiology, and pharmacotherapy. This team-taught, interdisciplinary course provides students with the opportunity to learn and apply concepts from these four disciplines.

Pre-Requisites

*PHA 423 is prerequisite to PHA 425-530.

PHA-395-396, 495-496, 595-596. INDEPENDENT STUDY

Credits: 1-6

Independent study and research for advanced students in the field of the major under the direction of a faculty member.

Pre-Requisites

Approval of the department chairperson.

PHA-301. & PHA 304 FOUNDATIONS OF PHARMACY PRACTICE

Credits: 2

The purpose of this course sequence is to provide the student with the foundational concepts and skills needed to practice pharmacy in the 21st century as the role of the pharmacist expands and continues to change. In addition to one's knowledge of the scientific basis of practice, the ability to communicate and be an effective team member is critical to the pharmacist's role as an educator, clinician, and member of the health-care team. As such, the student will experience the processes of self- and group-assessment, team development, and the use of effective communication strategies through discussions, assignments, role-playing, and case studies. A unique feature of this course sequence is the interdisciplinary faculty team. The expertise and perspective of each faculty member contribute to the development and teaching of this course. Furthermore, this approach demonstrates the relevance and importance of other disciplinary subject matter to the development and maturation of a pharmacy practitioner.

Pre-Requisites

P-I standing.

PHA-308. PHARMACEUTICAL AND HEALTH CARE DELIVERY

Credits: 3

Examination of health and pharmaceutical delivery in the U.S. conducted from a societal perspective. Emphasis is on public policy, economic behavior and outcomes. Application will be made to various pharmaceutical sectors (e.g., retail, health systems, manufacturing). Students should gain an understanding of the factors driving transformation of health care delivery and the implications for future pharmacy practice. Lecture: Three hours per week.

Pre-Requisites

P-I standing or consent of the instructor.

PHA-310. CLINICAL RESEARCH AND DESIGN

Credits: 3

Application of research design concepts and statistical techniques to design, critically analyze and interpret preclinical, clinical and economic studies of pharmaceuticals and treatment plans. Lecture: Three hours per week.

Pre-Requisites

[MTH-150](#) or equivalent, P-1 standing or consent of the instructor.

PHA-311. & PHA 312 PHARMACEUTICS I & II

Credits: 4

The study and application of physico-chemical principles that are necessary for the design, development and preparation of pharmaceutical dosage forms. The study of quantitative skills necessary for an understanding of the basic and clinical pharmaceutical sciences, including skills in pharmaceutical calculations and extemporaneous preparation of dosage forms. Lecture: Three hours per week. Laboratory/Recitation: Three hours per week.

Pre-Requisites

P-1 standing or consent of the instructor. [PHA-311](#) is a prerequisite for [PHA-312](#).

PHA-313. PHARMACY CALCULATIONS**Credits:** 1

The common mathematical processes that a pharmacist may encounter in professional practice are covered. Interpretation of the prescription, including Latin abbreviations, will be discussed. Medical terminology and the generic name, trade name, manufacturer and classification of the top 100 drugs will also be presented. Lecture one hour per week.

Pre-Requisites

P-1 standing or consent of the instructor.

PHA-327. MEDICAL MICROBIOLOGY**Credits:** 4

An overview of microbiology with special emphasis on pathogenic microbiology. Lecture: Three hours per week. Laboratory: Three hours per week. Cross listed with [BIO-327](#)

Pre-Requisites

P-1 standing or consent of the instructor.

PHA-331. & PHA 332 MEDICAL ANATOMY & PHYSIOLOGY I & II**Credits:** 4

In-depth principles of human anatomy and physiology as well as an introduction to pathophysiology will be presented. Lecture: Two hours per week. Laboratory/Recitation: Three hours per week. Discussion/Recitation: two hours per week.

Pre-Requisites

P-1 standing or consent of the instructor. [PHA-331](#) is a prerequisite for [PHA-332](#).

PHA-335. INTRODUCTORY PHARMACY EXPERIENCE (IPPE)**Credits:** 2

This course will provide introductory practice experience to students in the community setting. The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to community pharmacy. The student will take an independent learning approach under the supervision of a practicing community pharmacist. The course is two full-time weeks (80 hours) of experience.

Pre-Requisites

Successful completion of P-1 year.

PHA-365. MEDICAL BIOCHEMISTRY**Credits:** 4

Introduction to basic biochemistry concepts, focusing on the structure and function of vitamins, proteins, and lipids as well as bioenergetics and major catabolic pathways. The catabolism of carbohydrates, fats and amino acids will be discussed including reactions and regulation. Common metabolic pathways of drugs, enzyme induction and metabolism down regulation will also be presented. Lecture: Four hours per week. (Cross-listed with [CHM-365](#)).

Pre-Requisites

P-1 standing or consent of instructor.

PHA-405. PHARMACEUTICAL CARE SYSTEMS: DESIGN & CONTROL**Credits:** 2

Examines delivery of pharmaceutical products and services from a systems perspective in a variety of patient care settings. Focus is upon effectiveness, efficiency and quality. Covers design of systems, establishment and monitoring of key indicators, total quality management and quality assurance agencies (e.g., JCAHO, NCQA). Lecture: Two hours per week.

PHA-410. IMMUNOLOGY/BIOTECHNOLOGY**Credits:** 3

A discussion of nonspecific host defense mechanisms and a detailed description of specific immunity. Products that impart artificial active and passive immunity are presented. The concept of biotechnology is discussed together with the currently available products of genetic engineering that relate to immunology. The various immunological disorders and the immunology of cancer and HIV are discussed. Lecture: Three hours per week.

Pre-Requisites

[PHA-331](#), 332, 365 or consent of the instructor.

PHA-411. BIOPHARMACEUTICS & CLINICAL PHARMACOKINETICS**Credits:** 4

The fundamentals of biopharmaceutics and pharmacokinetics are presented. The physical and chemical properties of the drug and dosage form and the impact of the route of administration and patient characteristics and disease state will be related to the absorption, distribution, metabolism and elimination in the body. Individual drugs and patient case histories will be used to familiarize the student to practice. Lecture: Three to four hours per week. Recitation: zero to three hours per week.

Pre-Requisites

[PHA-311](#), [PHA-312](#) or consent of the instructor.

PHA-412. MANAGEMENT OF PHARMACY OPERATIONS**Credits:** 3

The principles of management, including personnel and financial management, will be covered as they apply to management of pharmacy operations in a variety of settings (e.g., community, health system, managed care). Lecture: Three hours per week.

Pre-Requisites

[PHA-308](#) or consent of the instructor.

PHA-421. PHARMACOTHERAPEUTICS I: PRINCIPLES OF PHARMACOLOGY & MEDICINAL CHEMISTRY**Credits:** 2**PHA-423. PHARMACOTHERAPEUTICS II: PRINCIPLES OF PHARMACOTHERAPEUTICS****Credits:** 2**Pre-Requisites**

[PHA-421](#).

PHA-425. PHARMACOTHERAPEUTICS III: SELF-CARE AND DERMATOLOGY***Credits:** 3

Three Credits

Course Descriptions

PHA-426. PHARMACOTHERAPEUTICS IV: GASTROINTESTINAL DISORDERS*

Credits: 2

Two Credits

PHA-428. PHARMACOTHERAPEUTICS V: INFECTIOUS DISEASES*

Credits: 4

Four Credits

PHA-430. PHARMACOTHERAPEUTICS VI: HEMATOLOGY, JOINT DISORDERS, SURGERY*

Credits: 2

Two Credits

PHA-440. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE II

Credits: once

This course will provide introductory practice experience to students in two health care settings: prescriber's clinics and a faculty practice site. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play.

Pre-Requisites

P-2 standing.

PHA-445. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE III

Credits: 2

This course will provide introductory practice experience to students in the health-system setting. The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to this area of practice. The student will take an independent learning approach under the supervision of a practicing pharmacist. The course is two full-time weeks (80 hours) of experience.

Pre-Requisites

Successful completion of P-2 year.

PHA-450. NEUROPHARMACOLOGY OF DRUGS OF ABUSE

Credits: 3

In-depth analysis of drugs of abuse, including pharmacokinetics, pharmacodynamics, tolerance, sensitization, physical dependence, and effects of drug use during pregnancy. Drug testing and substance abuse treatment strategies will also be discussed. Lecture: Three hours.

Pre-Requisites

[PHA-421](#) or consent of the instructor.

PHA-452. EXTEMPORANEOUS COMPOUNDING

Credits: 3

Students will achieve basic and advanced skills in compounding pharmaceutical dosage forms for individualized patient therapy to replace a lack of commercially available products, and enhance therapeutic problem-solving between the pharmacist and physician to enhance patient compliance. Students will work independently on research assignments and compounding preparations. Lecture one hour, laboratory six hours per week.

Pre-Requisites

[PHA-311](#) and [PHA-312](#) or consent of the instructor.

PHA-498. PHARMACY INFORMATICS

Credits: 2

Pharmacy Informatics is concerned with the use of technology to improve patient care as well as increasing patient safety. Informatics deals with data generated by software used in patient care, not only the storage of data but also the retrieval of data as meaningful clinical reports. Lecture: two hours per week.

Pre-Requisites

P-2 standing or consent of the instructor.

PHA-503. AND PHA 504 LONGITUDINAL CARE LAB I & II

Credits: 1

Students will follow a patient or patients over an extended period of time in a medical or home setting. Pharmaceutical knowledge and skills will be applied in communications, health assessment, monitoring of pharmacotherapy, evaluation of both humanistic and clinical outcomes. Issues of health care, cost access and quality as revealed through each patient's interaction with health and pharmaceutical care systems will be addressed. Three hours per week. Students are responsible for transportation to and from all off-campus experiential sites.

Pre-Requisites

[PHA-503](#) is prerequisite to [PHA-504](#).

PHA-505. PHARMACY LAW

Credits: 2

The study of federal and state statutes, regulations and court decisions which control the practice of pharmacy and drug distribution. Civil liability in pharmacy practice and elements of business and contract law will be covered. Lecture: Two hours per week.

PHA-509. ECONOMIC EVALUATION OF PHARMACEUTICAL PRODUCTS & SERVICES

Credits: 3

Introduction to commonly used economic evaluation methods (e.g., cost-minimization, cost-utility, cost-benefit, cost-effectiveness) as applied to pharmaceutical products and services. Quality of life and outcomes research will also be explored. Emphasis is on understanding evaluation methods and research design and interpreting the relevant literature for practice applications. Lecture: Three hours per week.

Pre-Requisites

[PHA-308](#) and [PHA-310](#) or consent of the instructor.

PHA-510. GENERAL MEDICINE ADVANCED PHARMACY PRACTICE EXPERIENCE

Credits: 5-6

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in general medicine practice. Clinical practice: Forty hours per week for a total of five weeks.

Pre-Requisites

P-4 standing.

PHA-511. AMBULATORY CARE ADVANCED PHARMACY PRACTICE EXPERIENCE

Credits: 5-6

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in ambulatory care settings. Clinical practice: Forty hours per week for a total of five weeks.

Pre-Requisites

P-4 standing.

PHA-512. COMMUNITY ADVANCED PHARMACY PRACTICE EXPERIENCE

Credits: 5-6

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in community practice settings. Clinical practice: Forty hours per week for a total of five weeks.

Pre-Requisites

P-4 standing.

PHA-513. HEALTH SYSTEM ADVANCED PHARMACY PRACTICE EXPERIENCE

Credits: 5-6

Integration of advanced pharmacy related concepts to the delivery of pharmaceutical care in the health system setting. Clinical practice: Forty hours per week for five weeks.

Pre-Requisites

P-4 standing.

PHA-521. PHARMACOTHERAPEUTICS VII: PULMONARY DISORDERS*

Credits: 2

Two Credits

PHA-523. PHARMACOTHERAPEUTICS VIII: CARDIOVASCULAR DISORDERS*

Credits: 4

Four Credits

PHA-525. PHARMACOTHERAPEUTICS IX: RENAL DISORDERS*

Credits: 2

Two Credits

PHA-526. PHARMACOTHERAPEUTICS X: ENDOCRINE DISORDERS & WOMEN'S HEALTH ISSUES*

Credits: 2

Two Credits

PHA-528. PHARMACOTHERAPEUTICS XI: NEOPLASTIC DISEASES*

Credits: 2

Two Credits

PHA-530. PHARMACOTHERAPEUTICS XII: CENTRAL NERVOUS SYSTEM DISORDERS*

Credits: 4

*PHA 423 is prerequisite to [PHA-425-530](#).

PHA-532. ALTERNATIVE MEDICINE AND NUTRITION

Credits: 3

This course gives an overview of various alternative/contemporary medicine practices; homeopathy, herbal therapy, chiropractic, acupuncture, acupressure, body massage, ayurvedic, and shamanic practices. This course will also give an overview on the concept and practice of nutrition: parenteral and enteral nutrition. Lecture: Three hours.

Pre-Requisites

[PHA-331](#), 332, 365 or consent of the instructor.

PHA-534. INTRODUCTION TO HOSPITAL PHARMACY PRACTICE

Credits: 2

This course introduces a student to the practice of pharmacy within a hospital setting. The student will be introduced to the history of, management of, clinical services within, and career options in a hospital pharmacy. The student will need to complete a hospital site visit, a formulary evaluation, and a Drug-Use Evaluation (DUE). Didactic and active learning techniques will be employed throughout the course. Lecture two hours per week.

Pre-Requisites

P-2 or P-3 standing or consent of the instructor.

PHA-536. PRINCIPLES OF ADVANCED COMMUNITY PHARMACY MANAGEMENT

Credits: 2

This course is designed to provide a foundation for students interested in pursuing the development and implementation of advanced clinical programs in a community pharmacy. The student will be introduced to principles in pharmacy and fiscal management, professional development, and the management and legal issues relating to clinical pharmacy services. Didactic and active learning techniques will be employed throughout the course and the student will be required to develop a business plan. Lecture two hours per week.

Pre-Requisites

P-2 or P-3 standing or consent of the instructor.

PHA-538. PEDIATRIC PHARMACOTHERAPY

Credits: 2

This course is designed to expand the student's current knowledge base regarding the pediatric population and to introduce the core concepts involved in the care of this special population. The course prepares students to identify and address drug-related problems in pediatric patients and to demonstrate competency within those areas. This will be accomplished by completion of case scenarios, actual patient presentations, and a take-home examination. An on-site visit to the Children's Hospital of Philadelphia (CHOP) is required. Lecture two hours per week.

Pre-Requisites

P-3 standing

PHA-540. COMPREHENSIVE DIABETES MANAGEMENT

Credits: 2

This course provides a multidisciplinary foundation for health professionals in the principles of diabetes management. Students who successfully complete the course will have knowledge and the basic skill set that is needed to begin practicing diabetes management. The majority of this course is independent self-study of online lectures, but there are mandatory on-campus discussions/exams. Lecture two hours per week.

Pre-Requisites

P-3 standing or consent of the instructor.

Course Descriptions

PHA-550. PRINCIPLES OF EXPERIMENTAL PHARMACOLOGY

Credits: 3

This course is designed to increase the student's appreciation of the science of pharmacology. The student will be exposed to principles and theories that are currently used to interpret pharmacological data about new drug products and physiological systems in both humans and animals. A series of articles will be used to demonstrate application of pharmacological techniques, and the student will be asked to suggest additional techniques to further clarify published hypotheses. The student will conduct experiments to apply pharmacological theories and techniques and to use the scientific method to gain data to support a hypothesis. Lecture and laboratory times to be determined by the instructor.

PHA-551. VETERINARY PRODUCTS

Credits: 3

Veterinary Products is designed to introduce pharmacy students to Veterinary Pharmacology and Therapeutics and the role of the pharmacist in the care of animals. The students will evaluate the most commonly used drugs in veterinary care and relate that evaluation to the use of these drugs in humans. The student will learn fundamental concepts that will allow the student to provide pharmaceutical care to animals and assist the veterinarian and owner in the care of pets and domestic animals. There will be a field trip to a zoo on one Saturday during the course. Lecture three hours per week.

Pre-Requisites

PHA-424 and 426.

PHA-552. PRINCIPLES OF BIOORGANIC AND MEDICINAL CHEMISTRY

Credits: 3

This will be an introductory course whose aims are to provide the principles of bioorganic and medical chemistry, including an understanding of drug structure-activity relationships, prediction of the physicochemical properties of a drug, basic knowledge of the major pathways of drug metabolism and factors that can contribute to drug-drug interactions. Lecture three hours per week.

Pre-Requisites

CHEM 231-232, PHA-327, 365.

PHA-555. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE

Credits: 0.5

This course will provide introductory practice experience to students in two health care settings: home health and long-term care. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play.

Pre-Requisites

P-3 standing.

PHA-560. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE

Credits: 0.5

The Self-Directed Introductory Pharmacy Practice Experience (SD-IPPE) course is designed to expose students to various service-learning opportunities throughout their P1 through P3 years. This experience consists of 3 components: participation in and development of service-learning projects, reflection, and self-directed learning. Students may develop their own experiences or participate in opportunities offered by the School or professional organizations.

Requirements for service-learning hours will increase as the student progresses through the curriculum. Each student must complete a minimum of 2, 8, and 10 hours during the P1, P2, and P3 years, respectively (total 20 hours). Additional details are provided in the SDIPPE syllabus conveniently posted in e*value.

PHA-599. A, B, C ELECTIVE ADVANCED PHARMACY PRACTICE EXPERIENCE ROTATIONS

Credits: 5-6

Advanced pharmacy practice experience involved in different aspects of pharmaceutical care. (Courses to be determined.) Clinical practice 40 hours per week for a total of five weeks.

Pre-Requisites

P-4 standing.

SBL. SBL

SBL-501. PUBLIC RELATIONS AND SCHOOL COMMUNICATIONS

Credits: 3

Communications and community relations are the responsibility of all professionals who make up the educational community. Dealing with stakeholders and creating 'buy-in' and support for school-sponsored programs is a critical factor in a formula for educational success. This course is designed to help participants prepare and manage effective communications strategies related to district-wide and other pertinent educational issues. Contents will be geared toward the many constituencies who have a vested interest in the school, including internal, external and media groups. The course will also provide a legal context for release of information. Participants will ultimately design a plan for effective communications related to their respective role in the school.

SBL-502. SCHOOL FACILITY MANAGEMENT

Credits: 3

This course is designed to allow participants to develop competency in facilities management to support an optimal teaching and learning environment. Topics include facilities management concepts and techniques that protect capital investments, insure health and safety of students and staff, enhance day-to-day operations and support educational performance of school programs.

SBL-503. FINANCIAL OPERATIONS OF SCHOOL DISTRICTS

Credits: 3

This course is an examination of financial reporting and audit requirements, internal control; cash management principles; and payroll and benefit management and accounting. Subject areas are approached with an emphasis on practical application in a school district, vocational-technical school, or intermediate unit business office. Course of study involves a core text, independent research, and work-connected projects.

SBL-504. FINANCIAL PLANNING AND MANAGEMENT FOR SCHOOL BUSINESS**Credits:** 3

This course focuses on the study of financial planning and management functions in educational institutions. Topics covered include: public education funding, budgetary planning and reporting using various models, and resource allocation and its impact on students. Revenues and expenditures for schools are examined and forecasted. A communication plan is developed to share the impact of the financial projections to the appropriate stakeholders. This course requires the completion of a rigorous online component of authentic simulations and/or field experience in applying the fundamental concepts of school financial planning and management.

SBL-505. HUMAN RESOURCES IN EDUCATION**Credits:** 3

This course will cover advanced topics in human resources in education. The course will provide practical human resource information for students to use in their current jobs, or to prepare them for a career in human resources in education. Areas to be covered include recruitment, selection, compensation, fringe benefits, performance evaluation, certification, and labor relations.

SBL-506. MATERIALS MANAGEMENT IN SCHOOLS**Credits:** 3

This course will examine various aspects of purchasing, inventory, fixed assets and real estate management in educational settings. Participants will gain practical application experience so that district needs in support of the educational process can be met. Subject areas include, but are not limited to, the preparation and administration of competitive bids, ethical practices in purchasing and contract management, requisitions, management of hazardous materials, and capital assets.

SBL-507. INFORMATION TECHNOLOGY IN EDUCATION**Credits:** 3

This course is designed to inform participants in the various areas of technology planning and implementation in a school district on the information technology and management side of the equation. The course covers topics in areas including: IT systems management, planning, data management, project management, fiscal management and purchasing and staffing / training issues.

SBL-508. STUDENT TRANSPORTATION**Credits:** 3

The purpose of this course is to provide students with the concepts, procedures and tools necessary to manage a student transportation system effectively. By analyzing utilization of resources, personnel and processes students will be introduced to a broad view of school transportation issues. The course will provide students with opportunities for research and discussion on school transportation themes thereby enhancing the student's ability to develop an efficient and safe student transportation system.

SBL-509. FOOD SERVICE IN EDUCATION**Credits:** 3

This course will examine the role of food services in school districts. Participants will study such topics as nutrition and its role in the educational process, food safety, fiscal responsibility, state regulations, managing the bid process and kitchen facilities, marketing and staffing. Subject matter will be approached with an emphasis on practical application either in the student's current position or as preparation to obtain future employment in the field.

SBL-510. LEADERSHIP FOR SCHOOL BUSINESS**Credits:** 3

This capstone course is designed to examine theories of leadership and analyze applications within the school environment. The topics addressed deal with a wide range of school related processes targeted at school improvement and overall student performance. (Taken in the last semester of SBL program coursework. Department permission required.)

SUS. SUS**SUS-501. INTRODUCTION TO SUSTAINABILITY****Credits:** 3

This course serves as an introduction to the concept of sustainability and will investigate why knowledge of sustainability issues and initiatives is an important business management and operational tool. This course is the first in a series of four courses in the Graduate Certificate Program in Sustainability Management. There are no pre-requisites for this course. Upper-level undergraduate students may enroll with permission of the instructor.

SUS-502. METRICS OF SUSTAINABILITY**Credits:** 3

Metrics of sustainability are the tools and procedures that are utilized to measure the impact and progress of a sustainability management program. These metrics are important because they enable goal setting and facilitate the adoption of sustainable practices. In this course current sustainability reporting and tracking systems will be studied. This course is the second in a series of four courses in the Graduate Certificate Program in Sustainability Management. [SUS-501](#) is a pre-requisite for this course.

SUS-503. SUSTAINABILITY IMPLEMENTATION**Credits:** 3

Students will learn about implementing sustainability management systems through an in-depth study of a manufacturing facility. Key topics to be studied include: setting sustainability goals, development of an environmental policy statement, development of sustainability metrics and sustainability reporting. This course is the third in a series of four courses in the Graduate Certificate Program in Sustainability Management. [SUS-501](#) and [SUS-502](#) are pre-requisites for this course.

SUS-504. INDUSTRY-FOCUSED SUSTAINABILITY**Credits:** 3

In this course students will perform an in-depth study of sustainability standards and practices in the context of a specific industry. This course is the last in a series of four courses in the Graduate Certificate Program in Sustainability Management. [SUS-501](#), [SUS-502](#), [SUS 503](#) are pre-requisites for this course.

EDSP. SPECIAL EDUCATION

EDSP-501. SPECIAL EDUCATION METHODOLOGY I WITH FIELD EXPERIENCE

Credits: 3

This course addresses the development, implementation, and monitoring of individualized management, instructional, curricular, and environmental strategies and adaptations for students with special needs. Pedagogical recommendations and research based effective teaching practices are reinforced from prerequisite courses. Emphasis is placed on a needs based model incorporating the cognitive, language, attentional, affective, physical, and sensory needs of higher incident populations (learning disabilities, mild mental retardation, speech disorders, and behavioral challenges) within included settings, resource room, segregated and learning support environment. A 20 hour field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content.

EDSP-502. SPECIAL EDUCATION METHODOLOGY II WITH FIELD EXPERIENCE

Credits: 3

This course addresses the development, implementation, and monitoring of individualized management, instructional, curricular, and environmental strategies and adaptations for students with special needs. Pedagogical recommendations and research based effective teaching practices are reinforced from prerequisite courses. Emphasis is placed on a needs based model incorporating the cognitive, language, attentional, affective, physical, and sensory needs of lower incident populations (multiple disabilities, hearing/vision impairments, orthopedic and health conditions) within included settings, resource room, learning support, and segregated environments. A 20 hour field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to content.

EDSP-503. BEHAVIORAL MANAGEMENT WITH FIELD EXPERIENCE

Credits: 3

This course will assist preservice teachers in developing a working framework of social, behavioral, environmental, individualized, and collective management techniques. Techniques practiced in the course will focus on approaches for classroom organization, constructive discipline, and proactive responses to intervention, including applied behavior analysis and functional behavioral assessments. A 20 hour field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content.

EDSP-504. ASSESSMENT IN SPECIAL EDUCATION

Credits: 3

This course will provide direct experience with selecting, administering, and interpreting formal and informal assessment measures for analysis of student learning profiles. Assessments will include ecological inventories, norm-referenced, performance-based and curriculum-based testing standardized achievement and intelligence measures, and vocation/transition-related evaluations. Cooperative discussions will focus on instructional decision-making based upon student learning profiles.

EDSP-505. EFFECTIVE PRACTICES IN SPECIAL EDUCATION

Credits: 3

This course focuses on models of effective, research-based special education teaching practices in literacy and content areas as well as universal design and differentiation for students with diverse needs and disabilities in a variety of academic settings. Emphasis will be placed on language, literacy, technologies, and transition processes.

EDSP-506. INTERNSHIP IN SPECIAL EDUCATION

Credits: 3

This course is the culminating activity for the Special Education Certification program. In the course, candidates work with a special education certified teacher and their respective professor/supervisor as they experience opportunities to apply knowledge gained in the previous EDSP courses (EDSP 501, [EDSP-502](#), [EDSP-503](#), [EDSP-504](#), and [EDSP-505](#)). The internship requires 100 hours/6 weeks including direct teaching, related meetings, preparation and paperwork as well as designated Wilkes class-time. Examples of activities students will be involved in include (but are not limited to): a needs assessment for special education students, experience with IEPs, construction of an instructional segment, delivery of instruction, parent and staff meetings, conducting classroom based assessments and identification of appropriate instructional materials. Note: The Internship must be taken as the final EDSP course or in conjunction with the final EDSP course.

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The University complies with the Ethnic Intimidation Act of 1982 of the Commonwealth of Pennsylvania which provides additional penalties for the commission of illegal acts of intimidation when such actions are motivated by hatred of the victim's race, color, religion or national origin.

Federal and State Act Compliance

The Office of Public Safety at Wilkes University prepares and distributes the "For Your Safety" annual safety, security and fire report. This document is prepared in compliance with Act 73 of 1988 of the Commonwealth of Pennsylvania and the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime and Fire Statistics Act, 20 USC §1092(f). This report is available in hard copy format upon request, during normal business hours, at the Office of Public Safety, 148 South Main Street, UCOM Garage; the Office of Admissions, Chase Hall's Reception Area; and the Office of Student Affairs, Passan Hall's Reception Area. Additionally, an electronic copy of this report is available on the University website at: . In addition, daily logs and crime logs are available for review during normal business hours at the Office of Public Safety. Any questions regarding this report and the specific requirements of the Acts that govern its production can be addressed to Gerald C. Rebo, Manager, Office of Public Safety, ext. 4984.

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