



The power of independent thinking.®

WILKES UNIVERSITY
WILKES-BARRE, PA 18766
1-800-WILKES-U
www.wilkes.edu



**WILKES
UNIVERSITY**

The power of independent thinking.®

WILKES UNIVERSITY

SPRING 2005

Graduate and Professional Studies
BULLETIN

WILKES UNIVERSITY ACADEMIC CALENDAR

SPRING - SUMMER, 2005

SPRING SEMESTER 2005

Class Commence	Monday, January 17, 2005	8:00 a.m.
Winter Commencement	Sunday, January 23, 2005	2:00 p.m.
Spring Recess	Friday, March 4, 2005	5:00 p.m.
Classes Resume	Monday, March 14, 2005	8:00 a.m.
Holiday Recess Begins	Wednesday, March 23, 2005	10:00 p.m.
Classes Resume	Tuesday, March 29, 2005	8:00 a.m.
Special Note	Tuesday, May 3, 2005 <i>(Follow Thursday Class Schedule)</i>	
Classes End	Wednesday, May 4, 2005	5:00 p.m.
Special Note	Wednesday, May 4, 2005 <i>(Follow Friday Class Schedule)</i>	
Final Examinations Begin	Friday, May 6, 2005	8:00 a.m.
Final Examinations End	Saturday, May 14, 2005	4:30 p.m.
Commencement	Saturday, May 21, 2005	11:00 a.m.

SUMMER 2005 PRE-SESSION

Classes Commence	Monday, May 23, 2005	8:00 a.m.
Classes End	Friday, June 10, 2005	12:00 noon
	<i>(Including Final Examinations)</i>	

FIRST DAY SESSION

Classes Commence	Monday, June 13, 2005	8:00 a.m.
Classes End	Friday, July 15, 2005	12:00 noon
	<i>(Including Final Examinations)</i>	

NINE-WEEK EVENING SESSION

Classes Commence	Monday, June 13, 2005	6:00 p.m.
Classes End	Tuesday, August 16, 2005	10:00 p.m.
	<i>(Including Final Examinations)</i>	

SECOND DAY SESSION

Classes Commence	Monday, July 18, 2005	8:00 a.m.
Classes End	Friday, August 19, 2005	12:00 noon
	<i>(Including Final Examinations)</i>	

MBA WEEKENDER DATES

Spring Session January - April, 2005

January 15, 16
February 5, 6
February 26, 27
March 19, 20
April 9, 10
April 23, 24

(Including Final Examinations)

Summer Session May - August, 2005

May 7, 8
June 4, 5*
June 25, 26
July 16, 17
August 6, 7
August 13, 14

(Including Final Examinations)

* Four-week interval between class meetings



Spring 2005

GRADUATE AND PROFESSIONAL STUDIES BULLETIN

Office of Graduate Studies & Continued Learning

Wilkes-Barre, Pennsylvania 18766

(570) 408-4160

1-800-WILKES U, ext. 4160

(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.

STATEMENT OF NONDISCRIMINATION

Wilkes University does not discriminate on the grounds of race, color, national origin, sex, age, or disability in the administration of or admission to any of its educational programs, activities, or with respect to employment, in compliance with Title VII, Title IX, Section 504, ADA, and the Age Discrimination Act. It is the policy of Wilkes University that no person, on the basis of race, color, religion, national origin or affectional preference, or Vietnam-era veteran status, shall be discriminated against in employment, educational programs and activities, or admissions. Inquiries may be directed to the Dean of Student Affairs or the Affirmative Action Office (Ext. 4500).

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 Department of Public Safety at Wilkes University prepares and distributes the "For Your Safety" annual safety and security 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 Statistics Act, 20 USC §1092(f). This report is available in hard copy format upon request, during normal business hours, at the Department of Public Safety, Bedford Hall, Public Safety Office; the Office of Admissions Chase Hall's Reception Area; and the Office of Student Affairs, Conyngham Hall's Reception Area. Additionally, an electronic copy of this report is available on the University website at: www.wilkes.edu/campuslife/safety/disclose.asp. In addition, daily logs and crime logs are available for review during normal business hours at the Department of Public Safety. Any questions regarding this report and the specific requirements of the Acts that govern its production can be addressed to Matthew Yencha, Manager, Community Relations and Quality Assurance, Department of Public Safety, ext. 4981.

TABLE OF CONTENTS

INTRODUCTION

Wilkes University's Vision and Mission.....	4
Graduate Studies and Continued Learning	4
Accreditation	5
Graduate Admission.....	6
Academic Information	8
General Information	12
Financial Information.....	14
Assistantships and Counselorships	16
Financial Aid.....	16
Graduation	18

GRADUATE AND PROFESSIONAL STUDIES

<i>College of Arts, Humanities, and Social Sciences</i>	21
Master of Arts Degree in Creative Writing	22
Master of Science Degree in Education	25
<i>College of Science and Engineering</i>	33
Graduate courses in Earth and Environmental Sciences	34
Master of Science Degree in Electrical Engineering	34
Master of Science Degree in Mathematics	35
<i>Jay S. Sidhu School of Business and Leadership</i>	38
Master of Business Administration Degree	39
<i>Nesbitt College of Pharmacy and Nursing</i>	43
Master of Science Degree in Nursing	43
Doctor of Pharmacy (Pharm. D.) Degree	48

COURSE DESCRIPTIONS

WILKES UNIVERSITY'S VISION AND MISSION

VISION

Wilkes University will build its future on its historic commitment to students, a belief in the integrity and shared purpose of all who comprise the Wilkes family, and the continuation of its vital relationship with the land and people of Northeastern Pennsylvania.

By 2010, Wilkes University will distinguish itself as an institution that provides a vital, general education core experience for all undergraduate students—a core that combines challenging academics, meaningful co-curricular activities, and experiential learning. All Wilkes students will have the individual attention and support they need to set high educational goals and exceed them—accomplishments that students will be asked to reflect on. Their confident, enterprising spirits, enthusiastic engagement with the challenges of work and life, intellectual resourcefulness, and civic responsibility will distinguish Wilkes students. And they will learn in a rich multicultural environment that reflects the region Wilkes serves. In turn, they graduate ready to take their place as informed citizens in the global community.

Extrapolating its vision for the undergraduate experience into the post-baccalaureate arena, Wilkes seeks to become a regional resource for lifelong learning in the Mid-Atlantic region, delivering its brand of individualized education in highly accessible ways. By developing a strong portfolio of programs for post-baccalaureate students, with a focus on the needs of Wilkes' alumni and based on the University's academic strengths, Wilkes will serve as an intellectual hub, helping people succeed in a changing world and strengthening its own financial position.

MISSION

Wilkes University is an independent institution of higher education dedicated to academic and intellectual excellence in the liberal arts, sciences, and professional programs. The University provides its students with the experience and education necessary for career and intellectual development as well as for personal growth, engenders a sense of values and civic responsibility, and encourages its students to welcome the opportunities and challenges of a diverse and continuously changing world. The University enhances the tradition of strong student-faculty interactions in all its programs, attracts and retains outstanding people in every segment of the University, and fosters a spirit of cooperation, community involvement, and individual respect within the entire University.

GRADUATE STUDIES AND CONTINUED LEARNING

Dean: Dr. Donald Shandler

GRADUATE STUDIES AS A COMPETITIVE ADVANTAGE

In today's knowledge-based global economy, continuous learning has become essential to ensuring a productive, competitive workforce. Old career paths are gone. Individuals must now assume responsibility for the continuous acquisition of new skills as knowledge has become a strategy for maintaining employability. Responsive universities are increasing their offerings of terminal degree and certificate programs that focus on employment opportunities in the workplace. Skills and competencies must be up-to-date, increasingly job relevant, and, in some professions, provide evidence of competence for continued practice. An outcome-based curriculum that is designed to build skills in an academic setting and that will provide results in a business setting is a new requirement of post-baccalaureate education.

A CONTINUUM OF POST-BACCALAUREATE OFFERINGS

Wilkes University has a rich tradition of responding to the changing educational needs of both workplace and students. Graduate programs were established in 1959 when the Board of Trustees authorized graduate study in the departments of chemistry and physics. The first master's degrees were conferred in 1965. The School of Pharmacy was established in 1995; the first Doctor of Pharmacy (Pharm. D.) degrees were awarded in 2000.

Graduate and post-baccalaureate programs have historically been positioned to respond to the changing needs of our students. An examination of the offerings in this bulletin will reveal a continuum of credit and post-baccalaureate programs including a Master of Arts Degree in Creative Writing, Master of Science degrees in Education, Electrical Engineering, Nursing, Mathematics and a Master of Business Administration. In addition, the continuum of offerings also includes a Post-Baccalaureate Certificate in BioInformatics, a R.N. to M.S. in Nursing, Post-Master's Certificates in Adult Psychiatric-Mental Health, Gerontological or Management in Nursing and a Doctorate in Pharmacy.

Graduate programs are designed to provide the opportunity for completion of a master's degree in one or two years of full-time study. Cycling of graduate courses allows a full-time student to plan for continuous progress in the program.

The graduate programs also allow businesspersons, scientists, teachers, and others employed in the region to continue their studies without interrupting their employment. To permit a combination of work and study, many graduate classes are scheduled to meet during late afternoon and early evening hours.

RESPONDING AND EVOLVING

Changing jobs and the need to integrate new technologies into the workplace have given post-baccalaureate learning a particular urgency. In addition to traditional classroom instruction Wilkes University is responding to increased demand for jobsite education, (Graduate Teacher Education 35 sites) internet-based learning, low-residency (Masters in Creative Writing), and other means of technology delivered instruction. Most importantly, post-baccalaureate education aims to ensure consistent, high-quality programs and student services regardless of the mode of delivery. Students are encouraged to consider Wilkes University their "partner in education" as they become lifelong learners.

THE CENTER FOR CONTINUED LEARNING

The Center for Continued Learning is your partner as you consider and explore non-credit training, 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 community with their search for the newest approaches, technologies and skills needed to remain competitive. We provide relevant assistance by assessing the objectives of your business and matching your needs with highly skilled instructors, thereby guaranteeing successful business outcomes. Information regarding our upcoming Open House sessions, personal tours or customized training is available at The Center for Continued Learning.

ASSOCIATION MEMBERSHIP

Wilkes University is an active member of the graduate school and post-baccalaureate community. University academic administrators and faculty participate in the following organizations.

- Council of Graduate Schools
- Pennsylvania Association of Graduate Schools
- North American Association of Summer Schools
- University Continuing Education Association
- Association for Continuing Higher Education

Graduate programs are described in the next several pages of this bulletin. The professional program in Pharmacy is described separately under the header "School of Pharmacy" later in the bulletin.

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 Association of Collegiate Business Schools and Programs, 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 the Doctor of Pharmacy (Pharm. D.) program full accreditation.

GRADUATE ADMISSION

For admission to graduate studies an applicant must have received a baccalaureate degree from an accredited institution. Ordinarily, an entering student must have completed satisfactorily a minimum of course work in designated areas, the specific courses and amount of work depending upon the field of advanced study.

Although no minimum undergraduate grade point average is a requirement for admission, it is expected that candidates for admission shall have maintained good or above-average performance during their undergraduate years and shall exhibit evidence of intellectual and temperamental fitness for graduate study.

Specific requirements established for each graduate program are to be found below. Each prospective applicant should consult these requirements prior to filing an application. 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 in person, through the mail, or on-line at www.wilkes.edu/admission/application/default.asp. The Graduate Studies Office is located in Max Roth Hall, Room 33. You may contact the office to obtain the forms and information needed to proceed with the application process. All students, degree-seeking or not, must fill out an "Application for Graduate Admission" form and pay the one-time application fee. For degree-seeking students, official transcripts (signed, sealed and coming directly from other institutions) of all previous college and/or university work must be submitted. Students applying for Graduate Teacher Education programs must submit a copy of their teaching certificate. All degree-seeking programs require letters of recommendation and some require test scores for admission. For information on testing, contact the Educational Testing Service, Box 955, Princeton, NJ 08540.

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 applications. 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.

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 the Graduate Studies Office.

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

DEGREE-SEEKING STUDENTS

Regular admission is granted to students who have completed the application process and who have demonstrated an acceptable level of academic work in their undergraduate program and are prepared for work at the graduate level in their field of specialization.

Provisional admission is granted to students who satisfy general admission requirements but who have undergraduate deficiencies. Typically, the deficiencies are undergraduate prerequisites that are required and completed prior to beginning graduate courses. Some graduate programs may allow a provisionally admitted student to begin graduate work before, or simultaneously with, the completion of undergraduate prerequisites. A student granted provisional admission will be permitted to take a maximum of 12 graduate credits in this admission category. Upon the completion of 12 graduate credits, a provisionally admitted student will either be granted regular admission or denied admission into the graduate program. Under extraordinary circumstances, a student may petition the Graduate Dean for an extension.

Conditional admission is granted to students who meet general admission requirements but who have a marginal undergraduate record. A student granted conditional admission will be permitted to take a maximum of 6 graduate credits in this admission category. Upon completion of 6 graduate credits, a conditionally admitted student will either be admitted or denied admission into the graduate program. Under extraordinary circumstances, a student may petition the Graduate Dean for an extension.

It should be noted that individual graduate programs retain the right to impose more rigorous conditions on students who have been admitted either provisionally or conditionally. Such conditions, if imposed, will be spelled out in the letter of admission to students in either of these admission categories.

SPECIAL NON-DEGREE STUDENTS

Students may apply for admission and register as special non-degree students. They must complete the Application for Admission form, check status desired (special non-degree) and pay the application fee. Special non-degree students are allowed to accumulate up to six credits only. Upon the completion of six credits, they must declare their intention to change their status to degree candidate status or their right to register for courses may be revoked. Exceptions to this policy must be approved by the Chairperson of the Department in which the student seeks to take additional courses as a special non-degree student. This option is not available to international students.

PROFESSIONAL DEVELOPMENT FOR TEACHERS

Teachers wishing to take graduate courses for professional development are allowed to register as special non-degree students. They must complete the Application for Admission form, 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 Graduate Teacher Education in order to determine which courses are required for a specific M.S. in Education degree program at Wilkes.

INTERNATIONAL STUDENTS

International students, applying for an F-1 visa, 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. They must submit two certified English translations of all academic records.

All applicants whose native language is not English and who hail from non-English speaking countries must take the TOEFL (Test of English as a Foreign Language) and submit the results of this test with the application for admission or provide proof that their language of instruction was English. A student must present a minimum TOEFL score of 550

(203, computer based) to be considered for admission.

It is required that each international student submit 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 expenses in the United States.

The Immigration and Naturalization Service of the United States Department of Justice 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.

International students 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.

All international students should register their names with the International Student Advisor as soon as they arrive. The International Student Advisor, second floor, Conyngham Hall, serves as advisor on non-academic matters to all international students. Services provided include counseling on housing, visa problems and other difficulties in adjusting to life in the United States.

The International Student Advisor provides immigration and visa information and assistance as well as advice on personal issues. The Advisor also provides orientation to life in the United States and the American educational system; assists students in dealings with U.S. and foreign government agencies, other campus offices and departments, and the community; and serves as advisor to the International Student Organization.

ACADEMIC INFORMATION

DEGREE REQUIREMENTS

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

1. **A completed file** (application, application fee, official transcripts, 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 Graduate Studies Office. The Graduate Dean will review the request and consult with appropriate parties (graduate program director, chairperson, advisor or academic dean) 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.

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.

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.

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 Registrar's Office.

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 Registrar's Office.

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 Graduate Studies Office.

6. Student appeals to any provisions in this policy shall be to the Thesis Advisor, the Department, and finally to the Graduate Advisory Council.

The original and two copies of the thesis must be submitted to the Graduate Studies Office after the thesis has been approved by the Advisory Committee. One copy will be filed in the Library, one in the Graduate Studies Office and one in the appropriate department. If the student desires a personal copy bound, an additional copy should be furnished. For thesis binding fees, see section on Fees and Expenses.

GRADE REGULATIONS

Numerical grades are given for graduate work:

- 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.

APPEAL OF GRADE POLICY

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 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 Graduate Dean. The appeal must be made by the end of the fourth week of the subsequent fall or spring semester. The Graduate Dean will consult with the Department Chairperson and will establish an Appeal Committee of three faculty members - at least two of whom shall be from the department of the faculty member involved, if this is possible. A Committee Chairperson will be appointed by the Graduate Dean. The Committee Chairperson will notify the faculty member of the appeal and the composition of the Committee.

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

The Committee will make a report to the Graduate 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 Graduate 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 regular Application for Admission and pay the application fee. The student receives no credit for courses taken as an auditor and does not complete examinations or turn in written work in these courses. Auditing cost is one-half of total course tuition.

A student enrolled in a course may apply to become an auditor by completing a change-in-class-status form, available at the Registrar's Office, and must obtain approvals from the advisor and course professor. This change of status must be completed before the end of the second week of the class.

REGULATIONS FOR WITHDRAWAL

A student may withdraw from a course during the first three weeks of the semester by informing the instructor, completing a withdrawal form that is co-signed by the student and the student's advisor, and returning the signed form to the Registrar's Office within the first three weeks of the semester. A student may withdraw from a course from the end of the third week through the eighth week only with the approval of both the instructor and the student's advisor. (The completed form must be returned to the Registrar's Office by the end of the eighth 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 and the Graduate Studies Office. A mark of "W" indicates an authorized withdrawal from the course.

It is the student's responsibility to initiate withdrawal from a course by obtaining the withdrawal form from the Registrar's Office, having it signed by the appropriate personnel, and returning it to the Registrar within the three- or eight-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 during the first three weeks reflects a decision on the part of the student, after consultation with the instructor and advisor, not to be enrolled in a course. In those cases in which a student withdraws from one course to add another during the first week of class of the semester, a "W" will not appear on the transcript. A "W" granted during the remainder 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.

ACADEMIC PROBATION AND INELIGIBILITY

A graduate student who accumulates two grades below 3.0 in one or more graduate courses will be placed on probation. A student earning a third grade below 3.0 will be dismissed from the graduate program. A student who is dismissed from the graduate program may request a review of the case by the Faculty Committee on Academic Standards. The request should be submitted in written form to the Graduate Dean.

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 Graduate Dean and the Dean of Student Affairs. Appeals from the decisions of this Committee may be made in written form to the Graduate Dean.

Policies regarding student conduct are published in the Wilkes University Student Handbook, which is available on the web site at www.wilkes.edu.

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)

TRANSFER CREDITS

A maximum of six credits of graduate work done at another accredited university or college may be applied toward the requirements for a master's degree. **There is no exception to this policy.** Acceptance into a graduate program is necessary **before** credits can be transferred.

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 Chairperson of the Department or, in the case of the Graduate Teacher Ed and MBA Programs, the Program Director. Transferred academic work must have been completed within **six years** prior to the date of admission to the graduate program at Wilkes, with a grade of B or better. Pass-Fail grades are not transferable to a degree program unless the "Pass" can be substantiated by the former institution as being a grade of B 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 and transfer the credits back to the University must complete a "Pre-Approval Form." An official transcript must be requested from the other institution as soon as it is available and sent to the Graduate Studies Office. All completed forms for transfer of credits should be submitted to the Graduate Studies Office.

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

CHALLENGE EXAMINATIONS

Students who desire to remove undergraduate deficiencies may do so by formal course work or by challenge examination. Challenge examinations cannot be used to earn credits toward the graduate degree. Arrangements are made by the student directly with the Graduate Program Chairperson/ Director. The fee for each challenge examination is \$80 per credit.

TRANSCRIPTS

Transcripts are provided by the Recorder's Office. They are issued only upon written request by the student and should be requested at least three weeks prior to the date needed. A student requesting a transcript in person must present valid 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.

There is no charge for the first transcript requested from Wilkes. The student will pay \$7 for each additional transcript. Same-day-service transcripts are available for an additional fee of \$10.

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

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 in the Wilkes University Student Handbook, which is available on the web site at www.wilkes.edu.

GENERAL INFORMATION

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 six graduate credits in a semester is considered a half-time student.

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 temporary 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 or temporary 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 property 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. The individual must pay a fee at the University Service Center between 8:00 a.m. and 8:00 p.m. Monday -- Friday. An ID card will be created and issued at that time.

Wilkes University's ID Card Center is located at the University Service Center, 1st Floor, Bedford Hall. The ID Card Center's operating hours are Monday -- Friday 8:00 a.m. to 8:00 p.m. and on the first weekend of each semester for the "Weekender Program" under designated hours established by the Campus Support Services Department.

LIBRARY

The Eugene S. Farley Library, located on the corner of South Franklin and South Streets, is one of the largest resource libraries in the region with more than 200,000 volumes of books and bound journals; over 330 journals and newspaper subscriptions; 10,000 full text journals; 800,000 units in microform; and a growing collection of audio-visual and instructional software. The Library utilizes a variety of parallel and integrated automated systems. Library hours during the academic year are from 8:00 a.m. to 11:45 p.m. Monday through Thursday, with different but fairly extended hours from Friday through Sunday. Library hours during the Summer Sessions and holiday hours, as well as any changes in hours, are posted at the Library.

ROOM AND BOARD

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 Residence Life Office to determine space availability.

The University Dining Hall, in the Student Center, is open to members of the Wilkes community. Resident students are required to be on a meal plan, and other members of the community may purchase meal plans as well. For information on board plans, graduate students should contact the University Service Center in Bedford Hall.

PARKING

Wilkes maintains parking areas on- and off-campus, and use of these facilities on weekdays 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 in Bedford Hall.

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 in Bedford Hall.

BOOKSTORE

The Bookstore, located on the first floor of the Henry Student Center, sells new and used books, stationary and supplies, bottled drinks and snacks, and memorabilia during normal class hours, and it is open for additional hours at the beginning of each term. The bookstore accepts cash, personal checks (with proper identification) and Visa or MasterCard.

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.

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 the Max Roth Center at 215 South Franklin Street.

THE OFFICE OF STUDENT AFFAIRS

The Student Affairs staff works with students in a holistic manner, providing guidance and support in students' pursuit of their educational goals and in their development as persons preparing to assume the responsibilities of maturely educated individuals. Staff members seek to help students resolve personal and academic problems, coordinate emergency situations involving students, and handle referrals from members of the University community. The Vice President for Student Affairs, having familiarity with University resources, serves as an ombudsman as well as a sounding board for student concerns. The Student Affairs staff welcomes the opportunity to acquaint graduate students with the services provided by the University, to discuss campus and community activities, and to assist graduate students in negotiating University policies and procedures. Visit the Deans of Student Affairs in Conyngham Hall.

FINANCIAL INFORMATION

GRADUATE TUITION AND FEES

All payments can be directly mailed to: Wilkes University—Student P.O. Box 8500-54693, Philadelphia, Pa 19178-4693. Visa and MasterCard payments can be made on the Wilkes University web site, www.wilkes.edu, or by calling the Student Accounts Office at 570-408-4658. Any questions concerning charges or payments should be directed to 570-408-4658 or billings@wilkes.edu. Payments can be made in person at the cashier's window, located on the 2nd floor of Passon Hall.

Several plans have been developed to assist students who do not have the cash in hand, and it is suggested that these plans be considered when special assistance is needed. Students may consult with the Financial Aid Director 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 student expenses for the 2004-05 academic year, which officially begins with the Summer Session, 2004.* 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 Financial Services Office.

Tuition:

M.B.A.	\$582 per credit hour
M.S. Ed.*	\$321 per credit hour
M.S., M.S.E.E.	\$676 per credit hour

Fees:

Application Fee	\$35
Audit Fee	One half of tuition cost
Challenge Examination Fee	\$80 per credit hour
General Fee	\$20 per credit hour
Graduation Fee	\$140 (charged to all graduating students in their last semester)

Technology Fee	\$10 per credit hour
Thesis Binding Fee	\$15 per copy
Transcript Fee	The first transcript is free of charge; the fee for the second and subsequent transcripts is \$7 per copy.

* Wilkes University's graduate teacher education courses are offered at the State System of Higher Education tuition rate.

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 Financial Services Office. **These forms must be submitted each semester.**

Note: The Financial Services 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 cash payment is received from their employer.

REFUNDS

Students who withdraw from the University or from specific classes during the semester will be entitled to an adjustment of tuition, fees, and room and board charges according to the refund schedule below. Before a refund will be processed and released by the Financial Services Office, there must be an official withdrawal form or written request on file at the Registrar's Office. The date of official withdrawal will be determined by the date the notification is given to the Registrar.

REFUND SCHEDULE*

Academic Year	Time of withdrawal	Tuition Refund
	First Week	95%
	Second Week	85%
	Third Week	80%
	Fourth Week	75%
	Fifth Week	70%
	Sixth Week	60%
	Seventh Week	55%
	Eighth Week	50%
	Ninth Week	40%
8-week Summer Sessions	First week	50%
	Two weeks of evening sessions	50%
	Second-eighth weeks	No refund
Weekend College	Through second weekend	50%
	After second weekend	No refund

*For graduate students on board plans, in the event of withdrawal at any time during the 15-week semester, meal charges will be refunded on a pro-rated basis from the end of the week during which official withdrawal was recorded in the Registrar's Office.

CREDIT BALANCES

Credit balances in student accounts will not be refunded unless requested from the Financial Services Office. If a student receiving aid withdraws from the University and is otherwise entitled to a refund, those dollars are restored to the financial aid funds according to the appropriate program requirements. See below.

ASSISTANTSHIPS AND COUNSELORSHIPS

The University awards a limited number of graduate assistantships. **Applications for these assistantships must be filed with the Department chairperson/manager no later than March 1 for the following academic year. The graduate assistantship files are then reviewed and approved or denied by the Graduate Dean.**

CRITERIA FOR SELECTING GRADUATE ASSISTANTS

1. Admission to the program and full-time status.
2. Full-time (nine credits per semester) status while holding the assistantship.
3. Minimum 3.0 undergraduate grade point average. Current graduate students may apply for an assistantship after completion of nine semester hours of graduate credit with a cumulative average of 3.0 or higher.
4. Two additional letters of recommendation and submission of personal resumé (character reference), if needed.
5. Successful interview or equivalent assessment of suitability for assistantship.
6. Ability and willingness to perform the duties assigned by the Director of the MBA program or by the department chair and/or the supervisor.

A number of counselorships in undergraduate residence halls are available each year to graduate students. Applications for these positions must be filed with the Director of Housing no later than February 1 to be considered for the academic year beginning in September.

FINANCIAL AID

INSTITUTIONAL AND FINANCIAL ASSISTANCE INFORMATION

The following information concerning student financial assistance may be obtained from the Financial Aid Director, Passan Hall, 267 S. Franklin Street:

1. Financial aid programs available to students who enroll at Wilkes;
2. The method by which such assistance is distributed;
3. The means, including forms, by which application for student financial assistance is made; the requirements for accurately preparing such applications; and the review standards employed to make awards for student financial assistance.

RENEWAL OF FINANCIAL AID

Financial aid is awarded on an annual basis; therefore, students must reapply each year. In addition to showing 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.

LOANS

There are several federal loan programs available to graduate students. While each has its unique characteristics, there are some standardized features that apply to all of the following loans. In order to qualify, a student must be accepted as a degree candidate, must be a U.S. citizen or permanent resident, must be enrolled on at least a half-time basis in eligible graduate-level courses and must be in good academic standing according to the academic progress standard set for receipt of federal aid. Financial aid eligibility for students who are conditionally or provisionally accepted is contingent upon the condition of the acceptance. These individuals should contact the Financial Aid Office to discuss their specific conditions. To determine eligibility, all students must complete the Free Application for Federal Student Aid and a Wilkes University Financial Aid Application. These forms are available at the Financial Aid Office.

In order for enrollment in courses to qualify for federal financial aid eligibility, the site at which they are offered must be approved by the Department of Education if more than 50% of the academic program is available at that site. Since the University seeks flexibility in selecting sites for the off-campus graduate education program, the University has chosen not to request approval of each of these sites. Therefore, students enrolled in

these courses do not qualify for federal financial aid, including the Stafford Loan program. Private loan programs, however, are available to help students enrolled in these courses cover educational expenses. Contact the Financial Aid Office for additional information on these private loans.

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.

FEDERAL STAFFORD LOANS

The subsidized Stafford Loan is a federal program that enables students to borrow money from a bank, credit union, savings and loan, or other participating lenders. It is available to graduate students who are enrolled on at least a half-time basis and who show financial need. The loan is interest-free while the borrower is enrolled at least half-time and for the first six months following termination of such enrollment. Graduate students may apply for \$8,500 per academic year.

Interest begins to accrue the seventh month after the student ceases to be enrolled on at least a half-time basis. Any student who borrowed for the first time after October 1, 1992 has a flexible interest rate.

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

The Unsubsidized Stafford Loan differs from the subsidized Loan in that the student must pay the interest on the loan while enrolled or have the interest capitalized. Under the federal Subsidized Stafford Loan, the government pays interest on the loan while the student is enrolled in graduate school. This loan is for students who do not qualify because of lack of financial need for any or all funds under the Subsidized Stafford Loan program.

A borrower who is eligible for a portion of the Subsidized Stafford Loan may borrow the difference from the Unsubsidized Stafford Loan program. The maximum loan limit includes a combination of the subsidized and unsubsidized loan.

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 flexible interest rate.

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

ADDITIONAL UNSUBSIDIZED STAFFORD LOAN

Graduate students are eligible to apply for additional Unsubsidized Stafford Loan funds which are over and above the Stafford Loan maximums described above. The maximum additional amount is \$10,000 per academic year with an aggregate limit of \$73,000.

This loan carries the same interest rate and repayment obligation as described under the section on Stafford Loans.

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 (Pell Grants, Supplemental Educational Opportunity Grants, Perkins Loans, Nursing Loans, Stafford Loans and PLUS Loans) adjusted based on the percent of the semester completed prior to the withdrawal. That is, students will be entitled to retain the same percent of the federal financial aid received as the percent of the semester completed. This percent is calculated by dividing the number of days in the semester (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 the 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 of 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:

- Unsubsidized Stafford Loans
- Subsidized Stafford Loans
- PLUS Loans
- Perkins Loans
- Pell Grant
- Supplemental Educational Opportunity Grants
- Nursing Loans

Pennsylvania and other state grants will be adjusted in accordance with the agency's stated guidelines. It is expected that PHEAA Grant funds will be reduced by the same percent reduction in tuition received by a student when withdrawing from a course or courses.

Wilkes University grant and scholarship funds will be adjusted based on the percentage of reduction of tuition received by a student when withdrawing from the University.

Please note that students who received a refund of financial aid prior to withdrawing from the University may owe a repayment of federal financial aid fund received. Students will be contacted by the Financial Aid Office 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.

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/\$140.00 graduation fee)** during the beginning of the final term before graduation. If registration is completed, students may call or write to the Graduate Studies Office or Registrar's Office to notify of intent to graduate. 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 three commencement exercises held over the calendar year. These exercises occur in January, May, and September of each year. Diplomas given during September ceremonies will always be dated as the fourth Saturday in August.

Graduate and Professional Studies

The College of Arts, Humanities, and Social Sciences

Master of Arts Degree in Creative Writing

Master of Science Degree in Education

Classroom Technology

Educational Development and

Strategies

Educational Leadership

Instructional Technologies

Secondary Education / Biology

Secondary Education / Chemistry

Secondary Education / English

Secondary Education / History

Secondary Education / Mathematics

Special Education

COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES

Dean: Dr. Darin E. Fields

In the College of Arts, Humanities, and Social Sciences students pursue degrees that develop critical and analytical skills to become creative problem solvers and acquire the necessary attitudes, knowledge, and skills to remain life-long learners in a diverse and changing world.

Our programs in Graduate Teacher Education provide continued learning and professional growth opportunities for teachers in Classroom Technology, Educational Development and Strategies, Educational Leadership, Instructional Technology, and Special Education; Secondary Education / Biology; Secondary Education / Chemistry; Secondary Education / English; Secondary Education / History; Secondary Education / Mathematics. Wilkes University provides three graduate programs with K-12 certification. The Master of Science Degree in Educational Leadership provides principal certification, the Master of Science Degree in Instructional Technology for Pennsylvania Technology Specialist certification, and the Master of Science Degree in Special Education for PDE teacher certification. As part of the graduate education programs, Wilkes University houses a Regional Computer Resource Center (RCRC), which provides microcomputer laboratories as well as an extensive educational software library, used primarily by students in the M.S. in Instructional Technology and Classroom Technology degree programs.

The College of Arts, Humanities, and Social Sciences also houses the newly created Master of Arts in Creative Writing, a thirty-hour, low residency program offering five writing genre choices: fiction, poetry, screenwriting, playwriting, and creative nonfiction. Masters students are required to be on campus two weeks per year, during the summer session and winter intersession. The summer session ends with a one-day Writers Conference that showcases national writers, agents, and editors and is open to the public. The bulk of the Masters coursework is completed during the six-month long project semesters that are delivered on-line and through e-mail exchanges among students and their writer/mentors.

MASTER OF ARTS IN CREATIVE WRITING (LOW RESIDENCY)

Bonnie Culver, Ph. D., Program Co-Director

J. Michael Lennon, Ph. D., Program Co-Director

ACCREDITATION

In October, 2004, the Pennsylvania Department of Education and the Middle States Association of Schools and Universities approved the Wilkes proposal for this program. The University enrolled its first class in January, 2005.

ADMISSION

In addition to the general admission requirements, applicants must possess a B.A. or a B.S. from an accredited institution. Because this is a Master of Arts in Creative Writing, not in English, any bachelor's degree will be accepted. No GREs are required. Applicants must submit the following for consideration:

- Completed Application.
- \$35 non-refundable application fee.
- Official transcript of all college work, undergraduate and graduate.
- Two letters of recommendation, from someone who knows your writing and work ethic.
- 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:
 1. Where are you in time and how did you get there?
 2. What are you going to do in the program?
 3. What will you do with your program accomplishments following graduation?
- Resume, including creative citations.

DEGREE REQUIREMENTS

(30 credit hour minimum)

The Master of Arts in Creative Writing is a 30-credit, low-residency program with five genres: fiction / poetry / screenwriting / playwrighting / creative nonfiction.

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.

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.

Both programs include two components...

Residencies and Project Semesters — which are outlined below. Specific credit requirements for the degree and certificate are listed in the back of the bulletin.

1. **RESIDENCIES** are eight-day-long on-campus courses that are usually team taught and include required and optional 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: ENG 501R, ENG 510, ENG 516, and the capstone, ENG 525R. *Minimum required:* 4, including capstone.

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: ENG 502, ENG 503, ENG 504, ENG 505, ENG 506, ENG 512, ENG 514, and ENG 520. *Minimum project semesters:* 3; Courses delivered online.

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

In the Master of Arts, To graduate, students 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. Students will major in one genre and take a foundation course in a second. Students will train as professional writers in three areas:

The Life, *students will be able to articulate...*

1. 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. the strengths and address the weaknesses of the work of their peers, as well as their own work and their writing process.

Craft, Technique, Analysis, *students will...*

3. describe 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.
4. demonstrate competency in the technology of their major genre area.

Art Delivery Method, *students will...*

5. 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.
6. be able to speak and write to people in professional venues of their genres in a confident manner.

CAPSTONES:

All students must complete a thesis project and capstone, specific to their area:

1. **Poetry.** Poets will present a formal reading from their finished poetry chapbook. The reading will be one-half hour to forty-five minutes in length; some or all work must be recited. Students will be prepared to answer questions about their writing process and individual poems, following the reading. Support materials will include a brief self-analysis of their poetry, a query letter, proposed writing life plan, and jacket blurb for the chapbook.
2. **Fiction.** Writers will present a formal reading from their completed full-length manuscript. The reading will be one-half hour to forty-five minutes in length. Students must be

prepared to answer questions about their craft and writing process, following the reading. Support materials will include a brief self-analysis of their work, a query letter, proposed writing life plan, and jacket blurb for the full-length manuscript that may be a novel or collection of short works.

3. **Plays.** Playwrights will work through the pre-residency with an assigned director to cast and to prepare the play for a formal staged reading. Experienced actors appropriate to the work must be utilized. Playwrights will rehearse with the cast and meet with the director to prepare for the reading. Playwrights will be prepared to answer questions about their work and processes following the staged reading. Finished scripts must adhere to play format. Support materials include a play synopsis, proposed writing life plan, and query letter.

4. **Screenplays.** Screenwriters will work with their writer mentors in the pre-residency to prepare their script for a table reading during their final residency. Readers will include actors, cohort members, and other film professionals. 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. Support materials include a query letter, proposed writing life plan, and film treatment.

5. **Creative Nonfiction.** Writers will present formal readings from their completed full-length manuscripts. The readings will be 30-45 minutes in length. Students must be prepared to answer questions about their craft and writing process, following the reading. Support materials will include a brief self-analysis of their work, a query letter, proposed writing life plan, and jacket blurb for the full-length manuscript that may be a novel or collection of short works.

Capstones for each genre must have both written and spoken components designed specifically for each student’s work to meet specified graduation criteria.

COURSE SEQUENCE

Degree Requirements | 30 credits (minimum)

First Residency	First Project Semester	
ENG 501R	The Professional Writer	3
<i>Two of the following foundation courses, one for certificate students</i>		
ENG 502	Writing Fiction	3
ENG 503	Writing Poetry	3
ENG 504	Writing Screenplays	3
ENG 505	Writing Stageplays	3
ENG 506	Writing Creative Nonfiction	3
Second Residency		
ENG 510R	Planning the Writing Life	3
Second Project Semester		
ENG 512	Genre & Context	3
ENG 514	Writing Projects	3
Third Residency		
ENG 516R		3
Third Project Semester		
ENG 520	Final Project/Thesis	6
Fourth Residency		
ENG 525R	M.A. capstone	3
ENG 530	Continuous registration to complete thesis project	1-3 credits

EDUCATION

Michael Speziale, Ed. D., Director

Graduate Teacher Education Program

MASTER OF SCIENCE IN EDUCATION

MISSION

The mission of the Graduate Teacher 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 Teacher 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 Classroom Technology, Educational Development and Strategies, Educational Leadership, Instructional Technology and Special Education. In addition, teachers holding secondary certification in a specific content area that want to expand their expertise in that content area can choose to major in one of the Secondary Education programs. These programs are available in Biology, Chemistry, English, History, and Mathematics. All programs lead to a Master of Science in Education degree.

Wilkes University offers three 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 qualifies an individual for Pennsylvania K-12 Instructional Technology Specialist certification. The Master of Science Degree in Special Education qualifies an individual for Pennsylvania 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.

As part of the graduate education programs, Wilkes University houses a Regional Computer Resource Center (RCRC), which provides a computer laboratory, as well as an extensive educational software library. The RCRC is used primarily by students in the M.S. in Instructional Technology and Classroom Technology degree programs, but also serves as a regional center for technology workshops for teachers. Services include:

1. training for K-12 teachers in microcomputer topics via short workshops and seminars; and
2. assistance to school districts in designing computer-oriented curricula.

SPECIAL FEATURES OF THE PROGRAM

The Master of Science in Education degree programs in Classroom Technology, Educational Development and Strategies, Educational Leadership, Instructional Technology and Special Education are offered at off-campus sites as well as on the Wilkes campus. Secondary Education graduate programs are available on-campus only. Graduate Education programs are arranged so that students may pursue the degree on a full or part-time basis. During the academic year, late afternoon and evening classes are offered to enable full-time teachers to take courses toward fulfillment of degree requirements. Credits may also be earned during summer sessions, with many courses being offered during daytime hours. Although Wilkes is not a state university, graduate Education courses only are offered at the State System of Higher Education (SSHE) tuition rate.

On-line formats of many courses are also available. Students may register for on-line sections as long as they do not exceed 50% of the total number of courses in their respective program. On-line sections of courses are published in the Wilkes University Graduate Teacher Education Schedule. Performance Learning Systems also offers on-line courses, which can be found on their schedule.

ADMISSION

For admission to graduate study in education, the applicant must have a baccalaureate degree from an accredited institution, with an appropriate major and a Pennsylvania teaching certificate. Although no minimum undergraduate grade point average is a requirement for admission, it is expected that candidates for admission shall have maintained good or above-average performance during their undergraduate years and shall exhibit evidence of intellectual and temperamental fitness for graduate study. In the Educational Leadership Program, academic performance is a measure of both prior course work and performance on the Miller Analogies. Students deficient in any phase of these requirements may, at the discretion of the academic department, and the Graduate Teacher Education Director, be granted provisional admission. Deficiencies must be made up satisfactorily before full admission to graduate study in education will be granted. **An MS degree-seeking student 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 \$35.00 one-time, non-refundable application fee,
- 3.) Submit two letters of recommendation,
- 4.) Submit a copy of your teaching certificate for all programs except Instructional Technology.
- 5.) Submit official transcripts from all of the undergraduate universities attended while obtaining the bachelor's degree, including teacher certification and, in addition, any master's degrees earned. Also send any recent graduate transcripts you want reviewed for possible transfer credits.

Students applying to the Special Education program are also required to submit a copy of their Pennsylvania Instructional certificate in early childhood, elementary or a secondary area as evidence they are eligible for program entry. Upon receipt of all required documents the Director of the Department will review files for acceptance. Accepted students are assigned an advisor to work with as they progress through the program.

Teachers are allowed to apply for admission as a special non-degree graduate student but must complete the same Wilkes Application for Graduate Admission, pay the required application fee and submit proof of their baccalaureate degree (copy of teaching certificate or undergraduate transcript) with their non-degree application. The University's general rule for non-degree students limits the number of credits a student can take to six. However, teachers can take non-degree courses for professional development to keep abreast of the latest trends in education and for ACT 48 credit with no limit to the number of Education courses they may take. Although non-degree students may change their status to degree-seeking, courses they have taken will only count in the degree if they align with the specific curriculum in the Master's Degree they choose to obtain.

Non-degree students who wish to change their status and enroll in a master's degree program must submit a new, updated Wilkes graduate application form as a "degree-seeking" candidate and then follow the remaining procedure for admissions outlined above, sending in all the appropriate documents. They need not repay the application fee. Students must complete all courses required for the degree as outlined in the Bulletin.

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 the 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.

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. The student is encouraged to contact the 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 commencement ceremony.

TRANSFER CREDITS

Students may transfer a maximum of six graduate credits from an approved and accredited college or university. Transfer credits can be no more than six years old with a grade of B (3.0) or better and must be approved by the Director of Graduate Teacher Education. The Director will make the determination whether transfer credits will count as elective credits or qualify to replace required courses. Students desiring to take courses from another college or university while enrolled in the Wilkes program must submit a pre-approval to transfer graduate credit form prior to registering for such courses. Failure to submit the proper paperwork may result in the inability to transfer those credits. All forms are available on the Graduate Teacher Education web site: www.wilkes.edu/gradteachered under 'transfer 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 a previous master's degree from Wilkes University, or is currently working on a master's from Wilkes, may obtain a second master's degree if the majors, programs and/or options are different. **Up to twelve credits only of previous course work used to satisfy the requirements for the first degree (typically basic requirements from Areas I and II) can be applied to the second.** All other bulletin and course requirements must be fulfilled. A student who opts for a second master's degree must submit a written request to the Director of Graduate Teacher Education along with a new Wilkes graduate application form.

DEGREE REQUIREMENTS

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

MASTER'S DEGREE PROGRAMS

CLASSROOM TECHNOLOGY (CT)

Barbara Moran

CT Program Coordinator

A candidate for the Master of Science in Education degree with an emphasis in Classroom Technology must complete 30 credits with a minimum of two courses (six credits) in Area I Foundations of Education; two courses in Area II Professional Skills (one of which must be ED 522 School Curriculum); four technology courses from Area VI: ED 526, ED 527, ED 528, ED 585 and six elective credits. 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.

Along with the program at Wilkes University, the M.S. in Education with a concentration in Class Technology is offered at the following off-campus sites: Allentown SD, Bethlehem Area SD, Berks IU#14, Blue Ridge SD, Carbon-Lehigh IU#21, Central Columbia SD, Crestwood SD, Delaware Valley SD, Hazleton @ MMI-Freeland, Jim Thorpe SD, Mifflin County SD, Mount Carmel SD, Northeastern Educational IU#19, Manheim Twp SD, Neshaminy SD, Northwest Area SD, Pleasant Valley SD, Pocono Mountain SD, Quakertown Community SD, Schuylkill IU#29, Tunkhannock SD and Wallenpaupack SD.

EDUCATIONAL DEVELOPMENT AND STRATEGIES (EDS)

Renee Kotz

EDS Program Coordinator

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: two courses in Area I Foundations of Education; two courses in Area II Professional Skills (one of which must be ED 522 School Curriculum); four Performance Learning Systems (PLS) courses in Area V: Educational Development and Strategies; and six elective credits. Electives can be any 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.

The EDS degree is designed to meet the needs of practicing teachers by combining effective strategies with theory and research. Off-campus EDS programs are offered in the following areas: Berks County, Bradford County, Chambersburg, Chester County, Garnet Valley SD, Harrisburg, Lancaster, Lehigh Valley, Mifflin County, Mechanicsburg, Milton SD, Quakertown Community SD, Schuylkill IU#29, Williamsport and York, as well as on the main campus.

INSTRUCTIONAL TECHNOLOGY (IT)

Victoria Glod

IT Program Coordinator

A candidate for the Master of Science in Education degree with a concentration in Instructional Technology must complete six credits in Area I Foundations of Education and one course in Area II Professional Skills, either ED 520 or ED 525. Required technology courses are: ED 577, ED 579, ED 583, ED 585, ED 587, ED 588, ED 589, for a total of 30 credits. In addition to these courses, a three-credit internship, ED 591, is required for Pennsylvania Department of Education certification as a K-12 Instructional Technology Specialist (a total of 33 credits for the Master's degree with IT certification). Some core courses may be taken at off-campus sites, but the majority of Instructional Technology courses are offered on the Wilkes campus and at the Bethlehem Area SD site only.

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.

EDUCATIONAL LEADERSHIP (EDLS)Rhoda Tillman, Ph.D.
EDLS Program Coordinator

The graduate program in Educational Leadership consists of 36 credits. A candidate for the EDLS degree, which includes PA Department of Education K-12 Principal Certification, must complete the following “sequence” courses: ED 516, ED 517, ED 576, ED 578, ED 573 and ED 574 prior to registering for ED 592 Administrative Internship and Applied Research Project. However, it is recommended that all 30 course credits be completed before the ED 592 Internship. The “sequence” courses each require a field experience of 35 hours logged outside of class after the first class meeting. Students must also complete ED 514, ED 518, ED 522 and ED 585 to fulfill the remaining degree requirements. The two semester, six-credit internship is required of all candidates for principal certification. Each semester of the internship requires a field experience during which students log 90 hours for a total of 180 hours outside of class. Candidates will be recommended for principal certification upon successful completion of the program course of study, a passing score (159) on the PDE required principal certification exam (SLLA), and five years of professional school experience on the appropriate teaching certificate. Students must follow the program outline above in order to complete all necessary requirements.

A ‘Certification Only’ Option is available for the Educational Leadership program and requires a Wilkes graduate application, application fee, official transcripts and two letters of recommendation. A previous Master’s degree, either from Wilkes or another university, is required for admission as a ‘Certification Only’ student. Wilkes EDLS graduate credits are required for principal certification only, with final determination of the courses needed made by the EDLS program director upon transcript review. If the previous master’s is from Wilkes, there is no need to repay the application fee but a new, updated application form must be submitted.

In addition to the Wilkes campus traditional and weekender formats, off-campus EDLS programs are offered at the Allentown SD, Berks County IU#14, Carbon/Lehigh IU#21, Delaware Valley SD, Mifflin County SD, Northeast Education IU#19, Pleasant Valley SD and Pocono Mountain SD.

Qualifications for Admission to the Educational Leadership Program:

- Successful completion of the general Wilkes University application process.
- The Miller Analogies Test is administered during ED 516. If the MAT has been taken within the past five years, official report must be sent to Wilkes University.
- Written statement from the candidate attesting to interest and motivation to pursue a degree in educational leadership and principal certification.
- Instructional I Teaching Certificate, if seeking principal certification.
- At least three years full-time teaching experience at time of admission, if seeking principal certification. A total of five years is required to apply for certification upon completion of the program.

SPECIAL EDUCATION (EDSP)Michael Speziale, Ed. D.
Director of Graduate Teacher Education

To be eligible for entry into the Special Education Master’s program, applicants **must possess a Pennsylvania Instructional Certificate** in early childhood, elementary or a secondary field of education and want to obtain certification in Special Education and a master’s degree. This program is not for previously certified special education teachers. All secondary certified applicants must show proof of four pre-requisite courses before they complete the program in order to be eligible for certification. These pre-requisite courses are:

- PSY 221 Developmental Psychology
- ED 321 Foundations of Reading with Field Experience
- ED 330 Math in Early Child/Elementary Education
- ED 370 Science in Early Child/Elementary Education

An official transcript must be on file in the Graduate Teacher Education office as evidence that these courses have been satisfactorily completed. Elementary and early childhood certified students are exempt from these pre-requisites.

A candidate for the Master of Science in Education with a concentration in Special Education must complete 30 graduate credits to obtain the degree and certification in Special Education. Core Education requirements are as follows: ED 518 School Law and one additional course from Area I Foundations in Education, ED 522 School Curriculum, ED 585 Integrating Technology in the Curriculum for a total of 12 credits. There are 18 credits of Area VII: Special Education courses required for the degree. They are: EDSP 501 and 502 Special Education Methods I and II with Field Experience, EDSP 503 Behavior Management with Field Experience, EDSP 504 Assessment in Special Education, EDSP 505 Issues and Topics in Special Education and EDSP 506 Internship in Special Education. Permission of the Program Director is required for registration in the Internship course along with completion of all other special education courses. In addition to the prescribed program of study, students must also pass the appropriate PRAXIS exam before they can be eligible for certification.

SECONDARY EDUCATION

Wilkes offers Master's degree programs in Secondary Education in various content areas including Biology, Chemistry, English, History, and Mathematics. Applicants should 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 (three credits of which must be ED 522 School Curriculum). 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. **Secondary Education programs are only available on-campus.**

BIOLOGY/SECONDARY EDUCATION

Michael A. Steele, Ph.D.
Chairperson

MASTER OF SCIENCE IN EDUCATION

ADMISSION

Refer to the general admission requirements above.

DEGREE REQUIREMENTS

Candidates for the degree of Master of Science in Education with a concentration in Secondary Education/Biology must take 18 hours of biology in courses numbered 400 or above. Chemistry 361 and 362 may be taken for credit toward the biology component with the prior approval of the Chairperson of the Biology Department.

Requirements for the education component of the Master of Science degree in Education with a major in biology, are listed under Education above.

Special Notice: Biology courses shown below are only offered during daytime class periods. Biology 466 and 468 are offered in alternate summers.

CHEMISTRY/SECONDARY EDUCATION Michael A. Steele, Ph.D.
Chairperson

MASTER OF SCIENCE IN EDUCATION

ADMISSION

Refer to the general admission requirements above.

The applicant should have a baccalaureate degree from an accredited institution, with a minimum of 35 semester credit hours in chemistry. In addition, a year of physics and a working knowledge of calculus and differential equations are required. Students deficient in any of these areas may, at the discretion of the chemistry faculty, be granted provisional admission.

DEGREE REQUIREMENTS

General requirements for the Master of Science in Education with a program in Secondary Education/Chemistry are listed under Education above. Specific chemistry requirements will be determined with the student's advisor in the chemistry department.

ENGLISH/SECONDARY EDUCATION To Be Announced
Chairperson

MASTER OF SCIENCE IN EDUCATION

ADMISSION

Refer to the general admission requirements above.

DEGREE REQUIREMENTS

Candidates for the degree of Master of Science in Education with a concentration in Secondary Education/English must take 18 hours of English in courses numbered 400 or above.

Requirements for the education component of the Master of Science in Education with a major in English are listed under Education Secondary Education above.

HISTORY/SECONDARY EDUCATION To Be Announced
Chairperson

MASTER OF SCIENCE IN EDUCATION

ADMISSION

Refer to the general admission requirements above.

DEGREE REQUIREMENTS

Candidates for the degree of Master of Science in Education with a concentration in Secondary Education/History must take 18 hours of history in courses numbered 400 or above.

Requirements for the education component of the Master of Science in Education with a major in history are listed under Education above.

MATHEMATICS/SECONDARY EDUCATION

Dr. Louise M. Berard, Ph.D.
Chairperson

MASTER OF SCIENCE IN EDUCATION

For information, see Mathematics section below.

The College of Science and Engineering

Graduate courses in Earth and
Environmental Sciences

Master of Science Degree in Electrical
Engineering

Master of Science Degree in Mathematics

Master of Science Degree in Education
Secondary Education / Biology
Secondary Education / Chemistry
Secondary Education / Mathematics

COLLEGE OF SCIENCE AND ENGINEERING

Dean: Dr. Dale A. Bruns

MISSION

It is the mission of the College of Science and Engineering to provide challenging graduate programs that promote the advanced understanding of principles in basic and applied sciences and mathematics, foster intellectual curiosity and critical thinking, develop further skills in research, information technology, and engineering design, and facilitate student professional growth and development. These College programs cultivate faculty-student mentoring in a graduate environment to promote application of advanced science and engineering concepts to help solve “real-world” problems and to encourage students to participate in leadership roles in their communities and to sustain individual initiative and life-long learning.

VISION

Graduate programs of the College of Science and Engineering will build on historic strengths of a traditional Wilkes education. Programs of the College emphasize experiential “hands-on” learning, teamwork in laboratories and class projects, state-of-the-art technology, individualized teacher-student mentoring, and a graduate research or design project, including educational opportunities in the regional business community of Northeastern Pennsylvania. These practical experiences, integrated with our diverse and innovative curricula, enhance our emphasis on core values of academic excellence and student-centered learning. The College seeks to foster agility and technical innovation in response to a rapidly changing marketplace and global economy, competition for quality students in graduate education, changing population demographics, and increased requirements for employers for science and engineering students with graduate degrees. The College graduate programs will play an integral role in the overall success of the University’s strategic goals and will expand its service sector to the Mid-Atlantic region.

PROGRAMS

Our best students and their professional career achievements illustrate the power of a cooperative and supportive learning environment that cuts across individual courses, programs, departments, and curricula. Individual faculty, departments, and graduate programs of the College have demonstrated academic excellence and success in partnering with industry, working with local community groups and local government, conducting research, serving on national panels and professional organizations, providing student internships, and fostering student-centered research and engineering design projects. The College hosts a number of state-of-the-art laboratory facilities, often equipped through faculty grants and research projects that involve undergraduate students. A strong connection to our region enhances cultural, academic, and industrial opportunities for our students. Various student chapters of professional organizations are active on campus. Our graduate programs offer diverse opportunities for technical careers in education, industry, and government.

The College offers graduate course work in Earth and Environmental Sciences and provides the graduate courses in Biology, Chemistry, and Mathematics to support the Master of Science Degree in Education in these secondary education disciplines.

The College graduate programs (Master of Science) encompass the following academic department and division:

- Division of Engineering and Physics
- Department of Mathematics and Computer Science

The College offers the following graduate degrees (Master of Science):

- Electrical Engineering
- Mathematics

EARTH AND ENVIRONMENTAL SCIENCES

Prahlad Murthy, Ph.D., Chairperson

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.

ELECTRICAL ENGINEERING David J. Wells, Ph.D., Division Director
Thyagarajan Srinivasan, Ph.D., Program Director

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

Courses are available days and evenings.

ADMISSION

In addition to the general admission requirements on page 6, applicants should 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.

DEGREE REQUIREMENTS

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

12 credits EE 410, EE 460, EE 481, and EE 482

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 414, 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).

COURSE DESCRIPTIONS

Students will be advised of the course offerings, sequencing, and prerequisites upon admission. The faculty advisor will be in a position to recommend courses to the student taking into account the time-table and the necessary prerequisites.

The 500-level courses are restricted to students who have achieved candidate status or by written permission of the instructor. All 400-level courses require a background based on 300-level courses or the equivalent of the B.S. degree.

FIVE-YEAR B.S. DEGREE IN ENGINEERING MANAGEMENT/M.B.A.

This program is designed for students who wish to attain a B.S. and an M.B.A. degree at Wilkes in five years. An Engineering Management major may apply for admission to this program during the eighth semester. However, final admission will be based upon successful completion of the B.S. degree in Engineering Management.

MATHEMATICS

Louise M. Berard, Ph.D., Chairperson

MASTER OF SCIENCE IN MATHEMATICS MASTER OF SCIENCE IN EDUCATION

The courses of study are intended for:

1. Those with an undergraduate degree in a traditional mathematics major who wish to make the transition to applied mathematics/computer science. 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 either mathematics or computer science.

ADMISSION

General admission requirements are described above.

1. Master of Science in Mathematics

Applicants are expected to have had undergraduate courses in each of the following three areas: linear algebra or 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 for all undergraduate deficiencies early in their graduate studies.

2. Master of Science in Education

Admission requirements for the Department of Education are described above.

DEGREE REQUIREMENTS

General degree requirements are described above.

1. **Master of Science in Mathematics**

Thirty credits in approved courses offered by the Department of Mathematics/

Computer Science are required, including 6 credits in courses numbered 500 or above.

In addition, there is a thesis option available whereby students can work independently toward the completion of a written thesis under the direction of their faculty advisor. As many as 6 of the required 30 credits may be earned through thesis work. Students electing this option must also satisfy all general thesis requirements as described above.

2. Master of Science in Education

The Department of Education degree requirements are described on above. Of the required 30 credits, 18 must be in approved courses offered by the Department of Mathematics/Computer Science. Up to 9 credits may be taken in Computer Science.

SPECIAL FEATURES OF THE PROGRAM

The department makes every effort to make the programs available to part-time as well as full-time students. Required courses are regularly offered in the late afternoons or the evenings.

The Jay S. Sidhu School of Business and Leadership

Master of Business Administration
Degree

THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

Dean: Dr. Paul C. Browne

The Jay S. Sidhu School of Business and Leadership combines a strong core business education with the development of skills for authentic leadership and ethical business practices. The School offers degree programs for undergraduate and MBA students. In addition, it houses the Sovereign Center for Executive Education to provide leadership and professional development programs for business executives, managers and supervisors throughout the region.

The School bears the name of Jay S. Sidhu, a 1973 graduate of the Wilkes MBA program, a member of the University Board of Trustees, and Chairman, President and Chief Executive Officer of Sovereign Bancorp. Mr. Sidhu and Sovereign Bank, a financial institution based in Reading, Pennsylvania, have provided Wilkes with a major gift to endow the School in Mr. Sidhu's name.

THE MBA PROGRAM

The Sidhu School's Master of Business Administration degree program expands business knowledge, management skill and leadership capability of early and mid-career professionals from many disciplines, functions, and jobs to enhance their success at work, adding value both for the student and for the organizations with which the student is associated. It 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 Association of Collegiate Business Schools and Programs (ACBSP) has accredited the undergraduate and the graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of these programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing business programs at Wilkes.

Closely linked to the Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both units provide academic and experiential opportunities for students to apply what they study in classroom settings to functioning organizations under the direction of senior staff at each unit.

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.

BUSINESS ADMINISTRATION

Anthony L. Liuzzo, J.D., Ph.D., Director
Robert M. Burke, M.B.A., Assistant Director

MASTER OF BUSINESS ADMINISTRATION (MBA)

MISSION STATEMENT

The business program of Wilkes University, in its continuing effort to maintain excellence in teaching, serves as a resource to the University and to the community of businesses, entrepreneurial enterprises, not-for-profits, and governmental agencies, by preparing students for lifetime leadership roles and professional and personal contributions. The learning-centered Wilkes business program maintains an integrated curriculum, faculty, and facility designed to provide students and the community with knowledge and information addressing the traditional functional and cross-functional content areas of the business and accounting disciplines; proffers course work and real world active learning experiences that provide analytical, problem-solving interpersonal, technological, and communication competencies; and challenges students to develop sensitivity to the public policy and ethical dimensions of decision-making in an economy that is closely interrelated with a rapidly changing, diverse, and global community.

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 program provides advanced training in the functional areas of business and also provides the opportunity for specialization in a selected field through additional training in Accounting, e-Business, Entrepreneurship, Finance, Human Resources Management, International Business, Marketing, or Operations Management. 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 weeks per trimester.

The Business Division is a member of the Association of Collegiate Business Schools and Programs. The MBA program is accredited by the Association of Collegiate Business Schools and Programs.

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. Submit two letters of recommendation from previous academic faculty and/or from current or previous supervisors, if employed. Letters of recommendation should attest to the student's fitness for managerial leadership and discuss interpersonal and organizational skills;
3. Demonstrate satisfactory performance as an undergraduate by providing a complete set of official undergraduate transcripts to the Graduate Admissions Office.

To be accepted on a **regular** basis, a candidate for the Wilkes MBA must have obtained a cumulative GPA of at least 3.0 in his/her undergraduate degree program. A prospective student with a GPA of less than 3.0 may be accepted into the MBA program on a conditional basis. To change to regular status, the conditionally accepted MBA student must maintain no less than a 3.0 for each course in the first six graduate credits of the MBA program. Failure to maintain the minimum 3.0 in any course will result in dismissal of the conditionally accepted student from the MBA program.

The MBA Program at Wilkes practices intensive self-directed student advising. A student accepted into the program is immediately assigned an advisor. Advising sessions are used as an opportunity to communicate effective managerial role models, changing job market conditions, student career ambitions and strengths and to identify course scheduling options. The focus of the advising process is to encourage students to develop a responsible and rewarding career.

DEGREE REQUIREMENTS

A minimum of thirty-six (36) credit hours is required for all MBA students. These consist of twenty-seven (27) credits in CORE courses and nine (9) credits in ELECTIVE COURSES, INDEPENDENT STUDY, OR TOPICS courses. Students who have not completed undergraduate courses in financial accounting, managerial accounting, marketing, business law, finance, management and human resources management, organizational behavior, macroeconomics, microeconomics, international business, statistics, and operations management and information systems fulfill these requirements by completing up to twelve credits in the Foundations Courses.

Students need to complete at least three elective courses. Students not desiring a concentration may select three courses that complement their individual interests or professional needs. Students desiring a concentration may concentrate their elective courses in one or two areas of study. Classes may include in-class discussions, research, online participation, class analysis, application of advanced techniques, or information technologies and methodologies.

Students desiring a concentration are required to take two courses from each desired concentration area:

Accounting:	MBA 565 and either MBA 515 or MBA 545
e-Business:	MBA 575 and either MBA 525 or MBA 585
Entrepreneurship:	MBA 585 and either MBA 565 or MBA 575
Finance:	MBA 545 and either MBA 515 or MBA 555
Human Resources:	MBA 555 and either MBA 535 or MBA 585
International Business	MBA 535 and either MBA 525 or MBA 545
Management::	MBA 515 and either MBA 555 or MBA 565
Marketing:	MBA 525 and either MBA 535 or MBA 575

In addition to the above, special topics courses or approved independent studies may also be substituted for the elective concentration courses. Please see your MBA advisor for additional information.

The Nesbitt College of Pharmacy and Nursing

Master of Science Degree in Nursing
Doctor of Pharmacy (Pharm. D.) Degree

THE NESBITT COLLEGE OF PHARMACY AND NURSING

Dean: Dr. Bernard W. Graham, R.Ph.

The newly created Nesbitt College of Pharmacy and Nursing combines the two clinically based academic programs of Wilkes University. These programs, administered by the School of Pharmacy and the Department of Nursing, have a theme centered on the development of skills needed to care for patients in a 21st-century health care system.

The School of Pharmacy is the home for the two-year prepharmacy guaranteed seat program and the four-year professional program. Students who successfully complete the prepharmacy guaranteed seat program matriculate directly into the accredited program leading to the Doctor of Pharmacy degree. The School also accepts a limited number of Wilkes and other students into this professional program.

The Department of Nursing houses a multitude of accredited nursing programs both undergraduate and graduate. Students who have earned a baccalaureate degree in nursing may matriculate directly into the Master of Science program. Students who already have a baccalaureate degree in another discipline and wish to pursue a career in the nursing profession may compete for a seat in the Professional Master's Program. Practicing professional nurses may choose to pursue the RN-MS program which leads into the advanced practice master's degree.

NURSING

Mary Ann Merrigan, Ph.D., R.N., Chairperson
Sharon G. Telban, Ed.D., R.N.C., Coordinator

MASTER OF SCIENCE WITH MAJOR IN NURSING

PURPOSE

The purpose of the graduate program in Nursing at Wilkes University is to prepare advanced practice nurses in the role of Clinical Nurse Specialist with a focus in either gerontological nursing or psychiatric mental health nursing. This multidisciplinary program provides a foundation for doctoral study in nursing and continued professional development.

Graduates of the program are eligible to write the certification examination for clinical nurse specialist by the American Nurses Credentialing Center (ANCC) upon completion of the requirements.

An advanced practice nurse is a registered nurse who is prepared at the master's level to provide direct patient care.

In addition to the clinical concentrations, a concentration in Nursing Management is also available to better prepare nurse managers for their expanding roles. A student in this area will complete the program core and the nursing management core.

This program is fully accredited by the Commission on Collegiate Nursing Education (CCNE).

Each student's program of study is planned to meet each individual's personal goals and professional requirements.

PROGRAM OUTCOMES

1. Synthesize advanced knowledge of nursing and related disciplines in the development of advanced practice nursing for the roles of the Clinical Nurse Specialist or Nurse Manager.
2. Develop expertise as an advanced practice nurse in the role of Clinical Nurse Specialist or Nurse Manager.

3. Develop skills and abilities to assume the role of the Advanced Practice Nurse.
4. Evaluate nursing research for its applicability to advanced practice nursing.
5. Evaluate applicable knowledge and concepts in nursing to deal with the complexities of a dynamic society.
6. Participate in life long learning as a part of advanced practice nursing.

ADMISSION REQUIREMENTS

In addition to the requirements of the Graduate Division, admission to the Master's Program in nursing requires:

1. Graduation from an approved baccalaureate program in nursing.
2. Licensure as a Registered Nurse.
3. One year of clinical experience.
4. An undergraduate statistics course.
5. An undergraduate research course.
6. Evidence of health assessment skills.
7. A statement of professional goals. These goals should relate to the goals of the graduate program in nursing at Wilkes.
8. Two letters of recommendation.

A student whose background is judged to be deficient in any area will be evaluated individually and a program plan that will remedy the deficiency will be developed. Courses to remedy such deficiency do not carry graduate credits.

For a personal interview to discuss program requirements and career goals, please arrange an appointment with the coordinator.

THE CURRICULUM (36/37 CREDITS)

THE CORE (18 CREDITS)

N501: Theoretical Foundations of Nursing	3 credits
N502: Application of Nursing Research	3 credits
N504: Advanced Role Development in Nursing	3 credits
N505: Current Perspectives in Nursing	3 credits
N533: Pharmacotherapeutics for Advanced Practice Nursing	3 credits
N590: Scholarly Project	3 credits

GERONTOLOGICAL ADVANCED PRACTICE CORE (18 CREDITS)

N406: Advanced Health Assessment	3 credits
N511: Perspectives on Aging	3 credits
N506: Advanced Practice in Gerontological Nursing I	3 credits
N515: Advanced Practice in Gerontological Nursing II	3 credits
Electives	3 credits
N508: Leadership and Advanced Practice Nursing	3 credits

PSYCHIATRIC MENTAL HEALTH ADVANCED PRACTICE CORE (19 CREDITS)

N525: Psychopathology of Acute and Chronic Mental Illness	4 credits
N526: Clinical Modalities in Advanced Psychiatric Mental Health Nursing Practice	3 credits
N527: Family Systems Theory I	3 credits
N528: Family Systems Theory II	3 credits
N535: Advanced Practice in Psychiatric Mental Health Nursing I	3 credits
N536: Advanced Practice in Psychiatric Mental Health Nursing II	3 credits

NURSE MANAGEMENT CORE (18 CREDITS)

Note: To evaluate readiness to take the advanced business administration courses, additional advisement by faculty in the business division will be provided.

N508: Leadership and Advanced Practice Nursing	3 credits
MBA 532: Managerial Economics	3 credits

MBA 540: Financial Management	3 credits
MBA 555: Seminar in Human Relations Management	3 credits
MBA 580: Business Issues in a Dynamic Environment	3 credits
Elective Course (arranged through advisement)	3 credits

PROFESSIONAL MASTER'S PROGRAM

This program admits students with baccalaureate degrees, but no previous nursing education, and prepares them for entry into the nursing profession. Upon successful completion of the program, students are awarded a Master's Degree in Nursing. (THIS IS NOT AN ADVANCED PRACTICE DEGREE.)

The program is designed for students who already hold a baccalaureate degree in a discipline other than nursing. Completion of the requirements for this master's level program prepares a beginning, self-directed practitioner who is capable of initiating, implementing, and revising nursing care. The curriculum is designed for the adult learner and builds upon earlier educational experience in the humanities, social studies and sciences. It is based on the development of the individual throughout the life cycle.

The curriculum flows from both the University's and the Department's philosophies and addresses the nursing needs of the region and the nation. It provides opportunity for the individuals with changing career aspirations, and it is designed to prepare the learner for a variety of roles in professional practice. Following the completion of the prerequisite courses, the program can be completed in three sessions.

Graduates of the Professional Master's Program will earn a Master of Science degree and will be educationally eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN), which must be successfully completed for registration as a professional nurse. A *pass-through* Bachelor of Science degree will be entered on the student's transcript upon completion of all clinical nursing courses.

PREREQUISITES:

- Applicants must have received a baccalaureate degree from an accredited institution.
- Two semesters of Anatomy and Physiology and one semester of Microbiology, with a related laboratory experience in each of these courses, are required.
- Nutrition, a co-requisite course, is to be completed no later than the student's first semester in the Generic Master's Program.

LENGTH OF PROGRAM:

- The total number of credits to complete the Generic Master's Program, beyond the pre- and co-requisite requirements, is 48.
- The program can be completed in three full-time semesters.

RECOMMENDED COURSE SEQUENCE FOR PROFESSIONAL MASTER'S PROGRAM

FIRST SEMESTER

NSG 401 Nursing Practice I	12
NSG 505 Current Perspectives in Nursing	3

Total: 15 credits

SECOND SEMESTER

NSG 402 Nursing Practice II	12
NSG 406 Adv. Health Assessment	3
NSG 498 Pharmacotherapeutics and Clinical Decision-Making in Nursing I	2

Total: 17 credits

THIRD SEMESTER

NSG 403 Nursing Practice III	12
NSG 502 Application of NSG Research	3
NSG 498 Pharmacotherapeutics and Clinical Decision-Making in Nursing II	1
Total:	16 credits

Clinical hours will be distributed among acute, chronic, and community settings. Opportunities for practice and application of classroom knowledge are included in each clinical nursing course. Regional cooperating agencies offer a variety of settings for nursing practice. In addition, an on-campus Nursing Learning Resource Center, equipped with audio-visual and computer-assisted instructions materials, is used to augment learning.

PROGRAM OUTCOMES:

1. Synthesize knowledge from the humanities, the physical and social sciences, nursing theory, and applied research as a basis for professional practice.
2. Use the nursing process to prevent illness and promote, maintain, and/or restore health to clients.
3. Function within the legal and ethical parameters of professional roles in managing health care with clients.
4. Collaborate, as a member of the health team, with individuals, families, and communities.
5. Use research in nursing practice.
6. Demonstrate the clinical competencies of a beginning, self-directed professional practitioner.
7. Enter advanced practice programs to earn a specialty practice degree or certificate.

THE CURRICULUM (48 CREDITS)

N401: Nursing Practice I	12 credits
N402: Nursing Practice II	12 credits
N403: Nursing Practice III	12 credits
N406: Advanced Health Assessment	3 credits
N505: Current Perspectives in Nursing	3 credits
N502: Application of Nursing Research	3 credits
N498: Pharmacotherapeutics and Clinical Decision Making in Nursing (1 credit with each clinical semester)	3 credits

R.N.-M.S. 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 Master's Program in the Clinical Nurse Specialist (CNS) concentrations remain intact and prepares an advanced practice nurse. Program plans are individualized for each student. Time to complete the program is related to the applicability of transfer credit as well as the number of credits taken in any semester.

An interview with the Program Coordinator is required prior to entry into the program. Formal admission to Wilkes University is necessary and will include evaluation of transfer credits.

Prerequisites for admission into the program:

1. Graduation from a regionally accredited nursing program.
2. Licensure as a Registered Nurse.

3. At least three (3) years of clinical practice after graduation.
4. A GPA from the original program of 3.0 on a 4.0 scale.
5. A statement of professional goals. (These goals should relate to the graduate program (CNS) at Wilkes.)

POST-MASTER'S DEGREE CERTIFICATE PROGRAM ADULT PSYCHIATRIC-MENTAL HEALTH NURSING, GERONTOLOGICAL NURSING, OR NURSING MANAGEMENT

PURPOSE

This program is designed for professional nurses who have earned a Master's Degree in Nursing and who seek further education in order to qualify for certification as a Clinical Nurse Specialist in Gerontological Nursing, Adult Psychiatric Mental Health Nursing, or Nursing Management. No degree will be awarded.

ADMISSION CRITERIA:

- Master's degree with a major in nursing from a program approved by either The National League for Nursing or The Commission on Collegiate Nursing Education (CCNE).
- GPA 3.0 on a 4.0 scale
- Current Pennsylvania registered nurse license.
- Two years of recent professional experience in nursing.
- Personal interview with a Department of Nursing faculty member.
- 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.

REQUIREMENTS:

Students will be required to take all of the specialty courses (18 credits for Gerontological Nursing and 22 credits for Adult Psychiatric-Mental Health Nursing). Students may transfer up to six (6) credits if taken within the past five (5) years.

GERONTOLOGICAL ADVANCED PRACTICE COURSES (15 CREDITS)

N406: Health Assessment of the Elderly	3 credits
N508: Leadership and Advanced Practice Nursing	3 credits
N511: Perspectives on Aging	3 credits
N506: Advanced Practice in Gerontological Nursing I	3 credits
N515: Advanced Practice in Gerontological Nursing II	3 credits
N533: Pharmacotherapeutics for Advanced Practice Nursing	3 credits*

PSYCHIATRIC MENTAL HEALTH ADVANCED PRACTICE COURSES (22 CREDITS)

N525: Psychopathology of Acute and Chronic Mental Illness	4 credits
N526: Clinical Modalities in Advanced Psychiatric Mental Health Nursing Practice	3 credits
N527: Family Systems Theory I	3 credits
N528: Family Systems Theory II	3 credits
N535: Advanced Practice in Psychiatric Mental Health Nursing I	3 credits
N536: Advanced Practice in Psychiatric Mental Health Nursing II	3 credits
N533: Pharmacotherapeutics for Advanced Practice Nursing	3 credits*

* To meet this requirement students must take N533 or have completed a 3-credit advanced pharmacotherapeutics course within the past five years. Courses completed prior to the five-year limit must be accompanied by evidence of at least three hours of continuing education in advanced pharmacotherapeutics for each year surpassing the five-year limit.

NURSING MANAGEMENT (18 CREDITS)*

N508: Leadership and Advanced Practice Nursing	3 credits
MBA 532: Managerial Economics	3 credits
MBA 540: Financial Management	3 credits
MBA 555: Seminar in Human Relations Management	3 credits
MBA 580: Business Issues in a Dynamic Environment	3 credits
Elective Course (Arranged through advisement)	3 credits

*To evaluate readiness to take the advanced business administration courses, additional advisement by business division faculty will be provided.

SCHOOL OF PHARMACY

Dean: Dr. Bernard W. Graham, R.Ph.

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., pharmaceutics, 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 ability to communicate effectively and to function in a team environment.

OUR MISSION

The primary mission of the School of Pharmacy at Wilkes University is to provide a dynamic, challenging, outcome-driven, and integrated curriculum, focused on pharmaceutical care that will serve as the foundation for lifelong learning and practice. Consistent with the Wilkes University mission, the School of Pharmacy brings together and retains qualified students and a dedicated faculty and staff from a variety of disciplines in a supportive atmosphere that encourages intellectual and personal development.

OUR VISION

We will be a national innovator in pharmacy education and a regional center for post-graduate pharmacy education. Our graduates will be able to provide quality pharmaceutical care to patients in a wide range of health systems, in urban and rural areas, and will be leaders in the profession. Finally, we will be a good corporate citizen through meaningful service to the University, the health professions and the local community.

OUR VALUES

1. *Teaching.* This is primarily a teaching institution; the student is our reason for being here.
2. *Pharm.D.* Teaching resources are devoted primarily to preparing students for one degree: the Doctor of Pharmacy.
3. *Communications.* Our graduates will have solid communication skills. In order to be effective professionals they must be able to articulate their knowledge with health professionals, administrators and patients.
4. *Team Building.* The ability to work effectively as part of a health care team is considered critical.
5. *Interdisciplinary Approach.* Pharmacy does not have all of the answers to health care or even pharmacy care problems. The broader perspectives of other academic disciplines are actively sought in curricular design and teaching.
6. *Small Size.* We are a small school and intend to remain small. Meaningful faculty-student interaction is valued. The size of each entering pharmacy class is limited to 65 students.
7. *Technology and Future Orientation.* Our facilities, curriculum and faculty are focused upon training practitioners for the 21st century. Emphasis is placed upon new technologies, as this is a major foundation for future pharmacy practice.
8. *Research and Practice.* Research and practice are valued primarily as they support our commitment to educational excellence and faculty development and are valued as they affect patient care and/or lead to the advancement of science.

ACCREDITATION

The American Council on Pharmaceutical Education (ACPE) has granted the Doctor of Pharmacy (Pharm.D.) program at Wilkes University full accreditation.

The six-year Pharmacy Program at Wilkes consists of two components. The first is the two-year Prepharmacy Program and the second is the Professional Program.

PROFESSIONAL PROGRAM

The Professional Program is four years and leads to the Doctor of Pharmacy (Pharm.D.) degree. 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: 65)

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

Historically, there have been more applicants than available positions. This requires the faculty 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 prepharmacy 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 hiatus. Each spring a select group of applicants are invited for a series of interviews. Selection for interview is based upon complete evaluation of all submitted application materials. Any missing documentation will compromise the application.

HOW TO APPLY

Applicants must obtain an application for School of Pharmacy admission from the School of Pharmacy and return the completed application to the School of Pharmacy. Please note that this is not the same as the Wilkes University application obtained from the University's Admissions Office. Priority will be given to completed applications (including PCAT) received by February 1 for the upcoming fall semester.

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
pharm@wilkes.edu

The application is also available on the web at: www.wilkes.edu/pharm/

PHARMACY MINIMUM ADMISSION REQUIREMENTS

To be considered for admission to the Professional Program of the School of Pharmacy, the applicant must:

- complete the Wilkes University General Education Course Requirements or have completed a baccalaureate degree;
- complete the Pharmacy Prerequisite Courses listed below by the end of the spring term prior to admission;
- if a Wilkes student, have a minimum overall GPA of 2.50 and a minimum GPA of 2.50 in the Pharmacy Prerequisite Courses listed below;
- if a non-Wilkes student, have a minimum overall GPA of 2.75 and a minimum GPA of 2.75 in the Pharmacy Prerequisites listed below for preferential consideration. Non-Wilkes students with overall GPAs between 2.50 and 2.75 will be considered for admission on a lower priority;
- obtain a grade of C (2.0) or better in each of the Pharmacy Prerequisite Courses listed below;
- provide three completed recommendation forms, one of which must be from a pharmacist;
- successfully complete the interview process;
- demonstrate acceptable written communication skills;
- take a standardized test of critical thinking skills; and
- submit scores on the Pharmacy College Admission Test (PCAT) by February 1.

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 Pharmaceutical Association's Code of Ethics of the Profession.

PROGRESSION REQUIREMENTS

All students in the Professional Program of the School of Pharmacy are required to meet minimum standards for academic progression. 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 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 adopted within these guidelines are distributed to all students in the School of Pharmacy. Students are expected to read and abide by these guidelines.

EXPERIENTIAL CURRICULUM COMPONENT

As the experiential portion of the curriculum begins in the second professional year (P-2), all students are required to possess professional liability insurance, to have documentation of immunizations, to pass a physical examination, and to be certified in Basic Cardiac Life Support and in Basic First Aid upon entering the P-2 year.

The fourth professional year (P-4) of the Pharmacy Program is devoted entirely to advanced pharmacy practice experiences in a variety of patient-care sites (e.g. hospitals, clinics, and pharmacies). Each student will be assigned by the School to six advanced pharmacy practice experiences, some of which may be at some distance from the Wilkes campus. Prior to entering advanced pharmacy practice experiences, students must have completed all didactic pharmacy coursework. During the advanced pharmacy practice experiences, students are required to complete, at minimum, 40 contact hours per week of practice experience in a variety of health care settings. Since patient care is a continuous activity, off-campus advanced pharmacy practice experiences may be conducted outside of school hours. Note also that some advanced pharmacy practice experiences start and end dates will not adhere strictly to the regular University calendar.

The student is responsible for paying all transportation and housing costs for all experiential components of the curriculum.

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.

All non-degreed students entering the Professional Programs are encouraged to complete the General Education Requirements prior to beginning the Professional Curriculum, and especially before the completion of the second professional year (P-2). 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 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.

In the United States, each state determines the eligibility for Pharmacy licensure in that state. 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.

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.

THE DOCTOR OF PHARMACY PROGRAM REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE FOR PROFESSIONAL PROGRAM

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	<u>4</u>
	18

P-1 SPRING SEMESTER

PHA 302 Pharmaceutical Care Lab I	1
PHA 304 Found. 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	<u>4</u>
	18

P-2 FALL SEMESTER

PHA 401 Pharmaceutical Care Lab II	1
PHA 403 Intro. to Pharmacy Practice Exp.	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
Professional Elective	<u>3</u>
	18

P-2 SPRING SEMESTER

PHA 402 Pharmaceutical Care Lab III	1
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
Professional Elective	3
	18

P-3 FALL SEMESTER

PHA 501 Pharmaceutical Care Lab IV	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
Professional Elective	$\frac{3}{3}$
	18

P-3 SPRING SEMESTER

PHA 502 Pharmaceutical Care Lab V	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
Professional Elective	3
	<u>16</u>

P-4 ADVANCED PHARMACY PRACTICE EXPERIENTIAL YEAR

PHA 510 Medicine	6 weeks	6
PHA 511 Ambulatory Care	6 weeks	6
PHA 512 Community Practice	6 weeks	6
PHA 513 Rural Practice	6 weeks	6
Elective Advanced Pharmacy Practice Experiences	2 @ 6 weeks	<u>12</u>
		36

Course Descriptions

BIOLOGY**BIO 406. INVERTEBRATE BIOLOGY****Four credits**

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: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 411. COMPARATIVE PHYSIOLOGY**Four credits**

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. Fee: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 412. PARASITOLOGY**Four credits**

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. Fee: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 423. FUNCTIONAL HISTOLOGY**Four credits**

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: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 425. ENDOCRINOLOGY**Three credits**

This course will focus on the structure, biochemistry, and the function of mammalian hormones and endocrine glands, but avian, amphibian and insect hormones will also be discussed where relevant. In addition, clinical pathologies resulting from excess or insufficient hormone production will be discussed, as this is essential to mastering an understanding of Endocrinology. Lecture: three hours. Laboratory fee: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 426. IMMUNOLOGY AND IMMUNOCHEMISTRY**Four credits**

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. Fee: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 427. MEDICAL MICROBIOLOGY**Four credits**

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: \$50.

Prerequisites: Biology 121-122, Chemistry 231-232.

BIO 428. DEVELOPMENTAL BIOLOGY**Three credits**

A course dealing with principles of organismic development, gametogenesis, fertilization, cleavage, embryogenesis, differentiation, morphogenesis, regeneration. Laboratory work includes vertebrate embryology, microtechnique, and some experimentation. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 441. LIMNOLOGY**Three credits**

A study of the chemical, physical, and biological aspects of fresh water systems. Laboratory investigations will consist of in-depth analyses of local lakes and streams. Lecture,

two hours a week; laboratory three hours a week. Fee: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 443. MARINE ECOLOGY

Three credits

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. Fee: \$50.

Prerequisites: Biology 121-122, GES 230, or permission of instructor.

BIO 444. ECOLOGY

Four credits

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. Fee: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 445. GENETICS

Four credits

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: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 446. ANIMAL BEHAVIOR

Four credits

This course emphasizes behavior as the response of an organism to physical and social environmental change, and covering 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: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 461. PLANT FORM AND FUNCTION

Four credits

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: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 462. PLANT DIVERSITY

Four credits

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: \$50.

Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BIO 466. FIELD BOTANY

Three credits

This is a specialized summertime field course which emphasizes a taxonomic, phylogenetic, and ecological survey of higher plants indigenous to Northeastern Pennsylvania.

Prerequisites: Biology 121-122, or permission of instructor.

BIO 468. MEDICAL BOTANY

Three credits

This course 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.

Prerequisites: Biology 121-122, 225, CHM 232, or permission of instructor.

BIO 498. TOPICS

Three credits

A study of topics of special interest not extensively treated in regularly offered courses. Prerequisites: Biology 121-122, 225-226, or permission of instructor.

BUSINESS ADMINISTRATION

FOUNDATION COURSES

MBA 501. FOUNDATIONS OF ACCOUNTING AND FINANCE **Three credits**

This course is a study of the essential foundations of financial accounting, managerial accounting, and finance. The course includes accounting and analysis techniques used in decision-making activities such as financial statement analysis and budgeting. The emphasis is on understanding the financial statements, how they are analyzed, and how financial information is used in decision-making. This course is intended for MBA students not having taken accounting and finance courses, or those interested in reviewing these competencies.

MBA 502. FOUNDATIONS OF MANAGEMENT, MARKETING, AND LAW

Three credits

Foundations of Management, Marketing, and Law provides an overview of theory and practice that integrates the disciplines of organization management and marketing with a grounding in the legal environment of business. By exploring the history and development of these topics through contemporary ideas and theories, participants will be familiarized with the social, economic, and legal parameters within which they function and with which they must be knowledgeable.

MBA 503. FOUNDATIONS OF ECONOMICS AND INTERNATIONAL BUSINESS

Three credits

A study of the essential foundations of both micro and macroeconomics. The course will introduce the problem of scarcity, the concept of opportunity cost, and supply and demand analysis to the student. Additionally, the course will focus on a variety of topics including national income accounting, unemployment, inflation, monetary and fiscal policy, long-term growth, consumer behavior, the theory of the firm, and the efficiency of resource allocation under various market structures.

MBA 504. FOUNDATIONS OF QUANTITATIVE BUSINESS ANALYSIS

Three credits

This course consists of three distinct, yet overlapping modules; applied business statistics (STAT), operations management (OM), and information systems (IS). Topics will provide the graduate business student with foundational material developed in subsequent courses in the MBA program. Software that will be utilized and/or demonstrated include Microsoft Excel, SPSS, and POM for Windows. Desired outcomes include knowledge of the theoretical principles in the three distinct modules and how to apply them in dynamic business environments, along with competence in various software applications.

CORE COURSES (27 CREDITS)

MBA 512. BUSINESS RESEARCH DESIGN AND METHODS **Three credits**

This course presents methodology appropriate for conducting research in business organizations. It includes brief review of the scientific method and its application to the business research process, discussion of ethics in the research process, research design (including measurement, scaling, and sampling issues), sources and collection of data (both primary and secondary), and analysis (hypothesis testing, correlation, multivariate) and presentation of data (both oral and written). Both application and spreadsheet softwares are used extensively.

Prerequisite: MBA 504 or undergraduate equivalents

MBA 513. APPLIED BUSINESS MODELS

Three credits

This course presents a variety of quantitative models applicable to both routine and non-routine business decisions. It emphasizes databased decision-making and representation of actual business problems or opportunities using mathematical models. Topics may include multiple criteria decision-making, sequential decision trees (including Bayesian analysis), linear programming, Markov analysis, project management, simulation, and other models as appropriate. Both application and spreadsheet softwares are used extensively.

Prerequisite: MBA 512

MBA 520. MARKETING MANAGEMENT

Three credits

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 oral communications skill development.

Prerequisite: MBA 502 or undergraduate equivalent

MBA 532. MANAGERIAL ECONOMICS

Three credits

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.

Prerequisite: MBA 503 or undergraduate equivalents

MBA 540. FINANCIAL MANAGEMENT

Three credits

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.

Prerequisite: MA 501 or undergraduate equivalent

MBA 552. ORGANIZATIONAL BEHAVIOR AND LEADERSHIP

Three credits

The purpose of this course is to examine leadership and organizational issues in the private and nonprofit sectors. We will specifically focus on the similarities and contrasts of leadership issues in the health care and business sectors. This course emphasizes how to become an effective leader by achieving mastery over the noisy, incessant and changing environment rather than simply reacting and living in a perpetual state of shock. The course focus is on three central issues: a) what makes a person an effective leader, b) how does a leader encourage high performance and build commitment, and c) how does a leader translate intention into reality, communicate those intentions successfully, empower others, and stay on course while knowing when to change.

Prerequisite: MBA 502 or undergraduate equivalents

MBA 560. FINANCIAL AND MANAGERIAL ACCOUNTING

Three credits

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.

Prerequisite: MBA 501 or undergraduate equivalents

MBA 580. BUSINESS ISSUES IN A DYNAMIC ENVIRONMENT

Three credits

This course introduces students to the varied diverse stakeholders who impact directly and indirectly on business policy and public policy formation. Included is analysis of the ways in which the interests of the customer, the creditor, the shareholder, the employee, the government, and the society interface with optimal decision-making by business organizations. The course utilized 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.

Prerequisite: MBA 502 or undergraduate equivalent

MBA 590. STRATEGIC MANAGEMENT & POLICY **Three credits**

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.

Prerequisite: Minimum of 24 MBA-level complete credits with all core MBA courses complete or currently being taken.

ELECTIVE COURSES

MBA 515. INTEGRATED DECISION MAKING **Three credits**

A study of financial and accounting decision-making as it relates to longterm organizational planning at the most senior levels of management. Relevant topics to be addresses include financial engineering, corporate governance, corporate restructuring, risk immunization, and value-based management.

Prerequisites: MBA 512, MBA 513, MBA 580

MBA 525. STRATEGIC MARKETING CONCEPTS **Three credits**

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.

Prerequisite: MBA 520

MBA 535. GLOBAL BUSINESS **Three credits**

This course is designed to acquaint the student with the practical principles and methods of international business. Subjects covered include the challenges of international business, the international marketing environment, the development and management of exports and imports, channels of international business, tariffs and non-tariffs barriers, the mechanics of international finance, and global strategic planning.

Prerequisite: MBA 532

MBA 545. INVESTMENT AND PERFORMANCE MANAGEMENT **Three credits**

This course offers a study of advanced methods of security analysis and valuation, including derivative products. Additionally, asset allocation models are examined, with special focus upon portfolio construction and management, including Modern Portfolio Theory. Also analyzed are explanatory theories of market behavior and their efficiency.

Prerequisite: MBA 540

MBA 555. HUMAN RESOURCES LAW AND COMPENSATION **Three credits**

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.

Prerequisite: MBA 580

MBA 565. ACCOUNTING AND CONSULTING **Three credits**

This course will address select advanced topics in accounting. Topics will include corporate financial reporting, the possible conflict between auditing and consulting, financial and tax consulting, accounting policies and practices, advanced management accounting and other current issues. Seminar activities may include in-class discussions, research, online participation, case analyses, application of advanced techniques, or information technologies and methodologies.

Prerequisite: MBA 560

MBA 575. WEB BUSINESS FOR MANAGERS, ENTREPRENEURS, AND PROFESSIONALS

Three credits

This course focuses on the needs of managers, entrepreneurs, and professionals who want to begin a web business and desire basic knowledge of the Internet. Individual development of a business and marketing plan for a new web business will be emphasized based on illustrative web business models. Furthermore, class participation will center on the insightful analyses of numerous web business cases that deal with such critical issues as digital security risk management. By combining conceptual lessons with hands-on computer exercises, this course provides students with the opportunity to get hands-on training in specific web business schools and develop an understanding of web business practices to become successful and remain competitive.

Prerequisite: MBA 520

MBA 585. CORPORATE ENTREPRENEURSHIP

Three credits

This course presents an exploration of corporate entrepreneurship in its many forms and manifestations. This course will cover companies that exemplify corporate entrepreneurship philosophies and practices. 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.

Prerequisite: MBA 580

MBA 595-596. INDEPENDENT RESEARCH

Three credits each

Independent study and research for advanced students in the field of the major under the direction of a staff member.

MBA 598. TOPICS

Three credits

Special topics in a major field. This course will be offered from time to time as interest and demand justify it.

CHEMISTRY

CHM 421. ADVANCED INORGANIC CHEMISTRY

Three credits

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.

Prerequisites: CHM 222 and 252

CHM 423. ADVANCED INORGANIC CHEMISTRY LABORATORY

One credit

Synthesis of coordination and organometallic compounds, and spectroscopic characterization of the products using modern laboratory techniques. Fee \$50

Prerequisite: CHM 232

CHM 461. BIOCHEMISTRY I

Three credits

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.

Prerequisite: CHM 232

CHM 462. BIOCHEMISTRY II

Three credits

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.

Prerequisite: CHM 232

CHM 463. BIOCHEMISTRY LABORATORY

One credit

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 \$50.

Prerequisite: CHM 461 or permission of instructor

CHM 498. TOPICS

Three credits

A study of topics of special interest not extensively treated in regularly offered courses.

Prerequisite: Permission of the instructor

COMPUTER SCIENCE

THE FOLLOWING COMPUTER SCIENCE COURSES MAY BE TAKEN AS PART OF THE MASTER'S DEGREE IN MATHEMATICS OR MATHEMATICS EDUCATION.

CS 419. PRINCIPLES OF PROGRAMMING LANGUAGES

Three credits

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 several specific languages, such as Ada, LISP, and PROLOG.

Prerequisite: Computer Data Structures.

Offered spring semester of even years.

CS 421. SIMULATION AND DATA ANALYSIS

Three credits

Methods of handling large data bases 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.

Offered fall semester of odd years.

CS 423. THEORY OF COMPUTATION

Three credits

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.

Prerequisite: Knowledge of computer data structures.

Offered spring semester of odd years.

CS 424. SYSTEMS ANALYSIS

Three credits

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.

Prerequisite: File management experience in COBOL.

Offered every fall.

CS 425. DATABASE MANAGEMENT

Three credits

Practical experience in solving a large-scale computer problem including determination of data requirements, appropriate data organization, data manipulation procedures, implementation, testing and documentation.

Prerequisite: CS 324

Offered fall semester of odd years.

CS 426. OPERATING SYSTEM PRINCIPLES

Three credits

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 EE 444)

Prerequisite: Computer Data Structures.

Offered fall semester of odd years.

CS 427. COMPILER DESIGN

Three credits

A study of compiler design including language definition, syntactic analysis, lexical analysis, storage allocation, error detection and recovery, code generation and optimization problems.

Prerequisite: Computer Data Structures.

Offered spring semester of odd years.

CS 428. ALGORITHMS

Three credits

Theoretical analysis of various algorithms. Topics are chosen from sorting, searching, selection, matrix multiplication and multiplication of real numbers, and various combinatorial algorithms.

Prerequisite: Computer Data Structures.

Offered fall semester of even years.

CS 430. COMPUTER ARCHITECTURE

Three credits

A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest "supercomputers." (same as EE 346)

Prerequisite: CS 329/EE 342 or a course in assembly language.

Offered spring semester of odd years.

CS 434. SOFTWARE ENGINEERING

Three credits

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 324.

Offered every spring.

CS 435. ADVANCED DATABASE CONCEPTS

Three credits

A continuation of CS 325. Concentration on the design of a large scale database system, current special hardware and software, and the role of a DBMS in an organization.

Prerequisite: CS 325.

Offered spring semester of even years.

CS 440. ARTIFICIAL INTELLIGENCE

Three credits

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.

Prerequisite: Knowledge of computer data structures.

Offered fall semester of odd years.

CS 450. OBJECT-ORIENTED PROGRAMMING

Three credits

The course serves as a practical introduction to the object-oriented programming paradigm. Fundamental concepts of object-oriented programming will be covered; these include objects, classes, inheritance, polymorphism, and data abstraction. Attention will be focused on program development; among the specific languages to be covered are Smalltalk and C++. Object-oriented databases will also be discussed.

Prerequisites: Knowledge of computer data structures.

Offered spring semester of odd years.

CS 455. COMPUTER NETWORKS

Three credits

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.

Prerequisite: Knowledge of computer data structures.

Offered spring semester of even years.

CS 460. LINEAR PROGRAMMING

Three credits

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. (same as Mth 460)

Prerequisite: Programming experience in a high-level language.

Offered spring semester of even years.

CS 463. OPERATIONS RESEARCH

Three credits

A survey of operations research topics such as decision analysis, inventory models, queueing models, dynamic programming, network models, heuristic models, and non-linear programming. (same as Mth 463)

Prerequisite: Programming experience in a high-level language.

Offered spring semester of odd years.

CS 464. NUMERICAL ANALYSIS**Three credits**

Numerical methods of differentiation, integration, solution of equations and of differential equations with emphasis on problems that lend themselves to solution using computers. (same as Mth 464)

Prerequisites: A course in differential equations and programming experience in a high-level language. Offered spring semester of even years.

CS 467. COMPUTER GRAPHICS**Three credits**

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.

Prerequisite: Computer Data Structures. Offered fall semester of even years.

CS483. WEB DEVELOPMENT**Three credits**

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.

Prerequisites: CS 283, CS 325 Offered every spring.

CS 495-496. INDEPENDENT STUDY IN COMPUTER SCIENCE **Three credits**

Individual study in a chosen area of computer science under the supervision of a faculty member.

Prerequisite: Approval of Department Chairperson. May be repeated for credit.

CS 498. TOPICS IN COMPUTER SCIENCE**Variable credit**

Study of one or more special topics in computer science.

EARTH AND ENVIRONMENTAL SCIENCES**EARTH & ENVIRONMENTAL SCIENCES 491. PRACTICUM** **Three to six credits****EARTH & ENVIRONMENTAL SCIENCES 498. ADVANCED TOPICS****One to three credits**

Selected topics covering a variety of atmospheric, hydrospheric, and lithospheric processes and environmental management issues. May be repeated for credit.

Prerequisite: Graduate standing.

EDUCATION**AREA I - FOUNDATIONS OF EDUCATION****EDUCATION 510. PSYCHOLOGICAL FOUNDATIONS OF EDUCATION****Three credits**

A study of human development and learning, application of psychological principles in the practice of education.

EDUCATION 511. PHILOSOPHICAL FOUNDATIONS OF EDUCATION**Three credits**

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 **Three credits**

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

Three credits

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

Three credits

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 and future trends are considered. **Required for Educational Leadership Program.**

EDUCATION 515. COGNITION

Three credits

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 518. SCHOOL LAW

Three credits

(previously numbered ED 578--cannot repeat for additional credit)

An examination of school law at the federal, state and local levels; review, discussion and analysis of court decisions, which affect schools. **Required for the Educational Leadership and Special Education Programs.**

AREA II - PROFESSIONAL SKILLS IN EDUCATION

EDUCATION 520. EDUCATIONAL ASSESSMENT

Three credits

(previously titled Tests and Measurements)

An examination of various assessment strategies, and current methods of assessment, through the study of theory and effective practices in assessment translated into design.

EDUCATION 521. STATISTICS IN EDUCATION

Three credits

Correlation and regression through statistical inference.

Prerequisite: ED 520 or equivalent.

EDUCATION 522: SCHOOL CURRICULUM

Three credits

(replaced previous ED 534 El Curr/ED 541 Sec Curr--cannot repeat for additional credit)

A study of school curricula offered in elementary and secondary education. Models and trends in curriculum development will be explored by examining past and present influences on curriculum. Participants will relate this knowledge to their own delivery of curriculum to students. **Required for all programs except Instructional Technology.**

EDUCATION 525. EDUCATIONAL RESEARCH

Three credits

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.

AREA III - ELEMENTARY EDUCATION

EDUCATION 531. CHILDREN'S LITERATURE

Three credits

A study of methods and materials appropriate for elementary school instruction in literature.

EDUCATION 532-533. PROBLEMS IN ELEMENTARY EDUCATION **Three credits**

Advanced study of materials and methodology appropriate for elementary classroom instruction.

Section	A Mathematics	D Social Studies
	B Science	E Special Subjects
	C Language Arts	

EDUCATION 536. ELEMENTARY SCHOOL READING INSTRUCTION**Three credits**

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**Three credits**

Lectures and demonstrations cover the identification, diagnosis, and classification of individuals with reading problems at all ages and levels of instruction.

Prerequisite: ED 536.

AREA IV - SECONDARY EDUCATION**EDUCATION 540. SPECIAL METHODS IN SECONDARY SCHOOL INSTRUCTION****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	

AREA V - EDUCATIONAL DEVELOPMENT AND STRATEGIES

NOTE: Education 541 through Education 553 were developed by educators at Performance Learning Systems, Inc. (PLS). The coursework is tightly structured, utilizing programmed learning with integrated audio-visual materials. Students conduct research in their own classrooms and report regularly on their success in employing strategies taught. Instructors for these courses receive special training prior to assignment. To register and pay tuition for these PLS courses only, contact the Performance Learning Systems office directly @ 1-800-862-7263.

All courses listed with a "W" (for Wilkes credit) on the PLS course schedule may be used toward the required 12 credits of Performance Learning Systems courses for the Wilkes EDS degree, including those listed as ED 598 Topics.

EDUCATION 541. KEYS TO MOTIVATION**Three credits**

Designed to help teachers create a motivating environment for all students. Provides understanding of students who are unmotivated to learn or participate by covering strategies which increase student involvement and motivation in learning.

EDUCATION 542. MEANINGFUL ACTIVITIES TO GENERATE INTERESTING CLASSROOMS (M.A.G.I.C.)**Three credits**

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.

EDUCATION 543. ACHIEVING STUDENT OUTCOMES THROUGH COOPERATIVE LEARNING**Three Credits**

Designed to encourage teachers to use cooperative strategies appropriately in classrooms. Activities include simulations, use of cooperative learning models, and creation of lesson plans.

EDUCATION 544. ADVANCED PROJECT T.E.A.C.H. LAB**Three credits**

Offers an opportunity for participants to actively practice the skills learned and utilized in Project T.E.A.C.H. Participants use the innovative techniques of storyboarding, journal writing, videotaping, live event activities and simulations in this course.

Prerequisite: ED 550 Project T.E.A.C.H.

EDUCATION 545. ADVANCED TEACHING THROUGH LEARNING CHANNELS LAB **Three credits**

Offers an opportunity for participants to actively practice the skills learned and utilized in Teaching Through Learning Channels.

Prerequisite: ED 552 Teaching Through Learning Channels

EDUCATION 546. COACHING SKILLS FOR SUCCESSFUL TEACHING **Three credits**

Develops and models strategies that help teachers share teaching ideas with one another. Participants will learn how to plan and implement coaching conferences, enhance teacher self-esteem with supportive techniques, share ideas with colleagues in a non-threatening environment and identify excellent teaching practices and grow from them.

EDUCATION 547. TEACHING THE SKILLS OF THE 21st CENTURY **Three credits**

Through the use of dynamic videotape productions, activities, articles and unique survey instruments, this course looks at what students need to know and be able to do to live successfully in the 21st century. In a forum where educators can share their vision of how a curriculum should be developed and taught, the course introduces facilitations skills that ensure the successful education and enrichment of both student and teacher.

EDUCATION 548. PURPOSEFUL LEARNING THROUGH MULTIPLE INTELLIGENCES **Three credits**

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.

EDUCATION 549. DISCOVERING THE POWER OF LIVE EVENT LEARNING **Three credits**

This course teaches how to use active participation in real-life experiences to create lesson plans that allow students to learn through real experiences. Participants learn facilitative leadership skills which enable them to go beyond hands-on learning and simulations to incorporate real concrete experiences in their lessons which promote student problem solving and decision making.

EDUCATION 550. PROJECT T.E.A.C.H. **Three credits**

Teacher Effectiveness and Classroom Handling (T.E.A.C.H.) deals with clarity of communication, avoidance of confrontation, and techniques to reduce tension in the classroom.

EDUCATION 551. P.R.I.D.E. **Three credits**

Professional Refinements in Developing Effectiveness (P.R.I.D.E.) treats questioning techniques, non-verbal communication, and the development of contracts to motivate students.

EDUCATION 552. TEACHING THROUGH LEARNING CHANNELS **Three credits**

This course utilizes recent brain research, examines individual differences in learning styles, and develops adaptive teaching procedures to accommodate varying cognitive processes.

EDUCATION 553. PATTERNS FOR I.D.E.A.S. **Three credits**

Patterns for I.D.E.A.S. is designed to explain ways inductive, deductive, analysis and synthesis processes can be taught in classroom lessons. This includes effort management and curriculum decision making.

AREA VI - EDUCATIONAL COMPUTING COURSES

EDUCATION 526. TELECOMMUNICATIONS IN THE 21ST CENTURY **Three credits**

This course will show educators how they can use telecommunications in the classroom. Participants will learn ways to effectively use the World Wide Web to obtain resources for

the classroom. Educational uses for email will also be explored.

Creating a web page will be a requirement of the course. Configuring and networking computers to the internet will be addressed. **Required for Classroom Technology Program.**

Prerequisite: ED 580 or equivalent technology experience.

EDUCATION 527. AUTHORING SYSTEMS/INSTRUCTIONAL DESIGN

Three credits

Design and construct lessons, tutorials and presentations for the classroom utilizing authoring software such as PowerPoint or HyperStudio. Ways to incorporate multimedia will also be explored and various design methodology will be examined. **Required for Classroom Technology Program.**

Prerequisite: ED 580 or equivalent technology experience.

EDUCATION 528. DESKTOP PUBLISHING

Three credits

This introduction to Desktop Publishing course will present methods of layout and construction of newsletters, flyers, transparencies, booklets and other teacher generated classroom materials using desktop publishing software such as Microsoft Publisher or PageMaker. **Required for Classroom Technology Program.**

Prerequisite: ED 580 or equivalent technology experience.

EDUCATION 529. DISTANCE LEARNING

Three credits

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 577. PRINCIPLES OF INFORMATION SECURITY

Three credits

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.**

Prerequisite: ED 585 and ED 588.

EDUCATION 579. MEDIA DESIGN

Three credits

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.**

Prerequisite: ED 585 or equivalent.

EDUCATION 580. INTRODUCTION TO EDUCATIONAL COMPUTING

Three credits

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.

EDUCATION 581. INSTRUCTIONAL PROGRAMMING IN BASIC

Three credits

Introduction to computer programming using the BASIC language. Topics include BASIC syntax, program modularity and design, simple graphics, and elementary data structures. Emphasis is on application in instructional environments.

Offered when demand warrants.

Prerequisite: ED 580 or equivalent technology experience.

EDUCATION 582. INSTRUCTIONAL PROGRAMMING IN C++

Three credits

C++ is an object-oriented programming environment that generates compiled code. C++ (and the underlying language C), has been designated as the programming language to be used in the Advanced Placement computer science examination for high school students. It is also the fastest growing language for personal computer software development.

Emphasis is on application in instructional environments.

Offered when demand warrants.

Prerequisite: ED 580 or equivalent technology experience.

EDUCATION 583. COURSEWARE DESIGN AND CONSTRUCTION Three credits

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 584. LOGO

Three credits

Introduction to computer programming using Logo and LogoWriter. Topics included are turtle-graphics, words and lists, recursion, "scrapbook" and "microworld" construction and elementary data structure representation.

Offered when demand warrants.

Prerequisite: ED 580 or comparable computer experience.

EDUCATION 585. INTEGRATING TECHNOLOGY INTO THE CURRICULUM

(formerly titled Microcomputer Assisted Instruction)

Three credits

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, Instructional Technology, Special Education and Educational Leadership Programs.

Prerequisite: ED 580 or comparable computer experience.

EDUCATION 586. MICROCOMPUTERS IN EDUCATION

Three credits

An analysis of microcomputer applications designed for various educational settings. Special emphasis is placed on software selection, review and utilization.

A Mathematics

D Social Studies

B Science

E Special Topics

C Language Arts

Offered when demand warrants.

Prerequisite: ED 580 or comparable computer experience.

EDUCATION 587. TECHNOLOGY LEADERSHIP

Three credits

Organization of instructional technology programs, facilities and resource management-including a technological in-service program. This course will also study the laws and regulations which govern the selection and utilization of media, sources for funding and collaboration on development of a grant proposal. **Required for Instructional Technology Program.**

Prerequisite: ED 585 or equivalent.

EDUCATION 588. OPERATING SYSTEMS & NETWORKING

Three credits

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.**

Prerequisite: Either ED 581, ED 582, ED 584 or equivalent.

EDUCATION 589. INSTRUCTIONAL TECHNOLOGY: MODELS AND METHODS

Three credits

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.**

Prerequisite: ED 585 or equivalent.

EDUCATION 591. INTERNSHIP (Instructional Tech)

Three credits

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.

Prerequisites: ED 587, ED 588, ED 589 (or equivalent) and permission of Director.

AREA VII - SPECIAL EDUCATION (EDSP)

EDSP 501. SPECIAL EDUCATION METHODOLOGY I WITH FIELD EXPERIENCE

Three credits

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 field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content. **Required for Special Education Program.**

EDSP 502. SPECIAL EDUCATION METHODOLOGY II WITH FIELD EXPERIENCE

Three credits

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 field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to content. **Required for Special Education Program.**

EDSP 503. BEHAVIORAL MANAGEMENT WITH FIELD EXPERIENCE

Three credits

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 field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content. **Required for Special Education Program.**

EDSP 504. ASSESSMENT IN SPECIAL EDUCATION

Three credits

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. **Required for Special Education Program.**

EDSP 505. ISSUES AND TOPICS IN SPECIAL EDUCATION **Three credits**

This course will offer a colloquium for constructive exploration of specialized topics in the field of special education. Preservice teachers will be given the opportunity to pursue independent issues relative to their endeavor as special educators, as well as finalizing their position statements about Pennsylvania Department of Education professional competencies. Competencies will be integrated with specific skills and performances, which will serve as the summative experience of all education coursework prior to the student teaching experience. A special education teacher handbook will be implemented as the primary vehicle for reviewing and reinforcing skills in the critical areas of assessment, inclusion, IEP development, discipline, management, transition, organization, planning collaboration, and professional/personal development. **Required for Special Education Program.**

EDSP 506. INTERNSHIP IN SPECIAL EDUCATION **Three credits**

Students will complete work as an intern teacher with a practicing teacher in their expected area of certification. Within this experience, students will design a plan of study for each special needs child. **Required for Special Education Program.**

Prerequisite: Completion of the 27 required program credits and permission from the program director.

AREA VIII - ADVANCED COURSES

EDUCATION 516. EDUCATIONAL LEADERSHIP **Three credits**

This course introduces students to research on educational leadership theory, models, and styles. Ethics in leadership, decision-making models, and the principal as instructional leader are examined. The study of research methodology is incorporated and practiced to develop skills for future use in leadership plans of study. **Required for Educational Leadership Program.**

Prerequisite: Enrollment in the Educational Leadership program.

EDUCATION 517. THE PRINCIPALSHIP **Three credits**

This course introduces students to the role and responsibilities of the principal. Theory is transferred to practice through the use of case study and in-basket/out-basket assignments which will address critical issues in educational leadership. The use of leadership knowledge and skills are developed through the study of the principal's role in shaping the school culture & climate, developing a shared vision, managing group dynamics, and maintaining a safe and orderly learning environment. **Required for Educational Leadership Program.**

EDUCATION 570. PROFESSIONAL AWARENESS FOR COOPERATING TEACHERS **Three credits**

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.

Prerequisite: Admission to this course approved through application to the Education Department.

EDUCATION 572. EXTENDED TEACHING **Three credits**

Students with appropriate teaching experience are assigned to a supervised teaching setting. Prerequisite: Approval of education department chairperson.

EDUCATION 573. EDUCATIONAL ASSESSMENT AND PROGRAM EVALUATION

Three credits

Students will undertake advanced study in educational assessment strategies and program evaluation. 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

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. **Required for Educational Leadership Program.**

EDUCATION 574. SCHOOL/COMMUNITY RELATIONS **Three credits**

Students will study the role of the principal in establishing and maintaining positive school and community relations. Instruction will be provided in positive public relations and in effective communications techniques. Working in collaboration with faculty, colleagues and a practicing administrator, students will design a leadership plan of study for a topic related to 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: needs assessments, communication systems, parent involvement, school partnerships, or other related topics. **Required for Educational Leadership Program.**

EDUCATION 576. SITE MANAGEMENT **Three credits**

This course focuses on the study of administrative functions in educational institutions. Topics covered are budget planning, facilities management, resource allocation and scheduling. School finance and sources of revenue for schools as they impact the allocation of resources and scheduling of programs are examined. **Required for Educational Leadership Program.**

EDUCATION 578. STAFF DEVELOPMENT AND SUPERVISION **Three credits**

(If you previously completed School Law as ED 578 you must repeat ED 578-Staff Development & Supervision for the Educational Leadership program)

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. **Required for Educational Leadership Program.**

EDUCATION 590. THESIS **Three credits**

EDUCATION 592. EDLS ADMINISTRATIVE INTERNSHIP AND APPLIED

RESEARCH PROJECT (Two semesters at 3 credits each) **Six credits total**

Students will complete work as an administrative intern with practicing K-12 principals. Within this experience, students will design a leadership plan of study to implement a research-based project, which will attest to their ability to perform as an educational leader. The project is to address the needs of the candidate, as well as the needs of the school where the internship is being completed. **Required for Educational Leadership Program.** Prerequisites: Completion of 30 required program credits and permission of program director.

EDUCATION 594. WORKSHOP **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 595-596. INDEPENDENT STUDY **Three credits each semester**

Affords an opportunity for independent study of selected topics under faculty supervision. Prerequisite: Permission of department chairperson/program director.

EDUCATION 597. SEMINAR **Three credits**

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.

Prerequisite: Permission of instructor/department chairperson.

EDUCATION 598. TOPICS **Three credits**

Advanced study of topics of special interest not extensively treated in regular courses.

EDUCATION 599. SHORT COURSES

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.

ELECTRICAL ENGINEERING

EE 410. LINEAR SYSTEM THEORY

Three credits

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. FEEDBACK CONTROL SYSTEMS

Three credits

A review of mathematical models for physical systems. Block diagram simplifications; sensitivity measure and performance of control systems; state space representations; stability analysis; the Routh Hurwitz criterion; the root locus method; Bode plots; and the Nyquist criteria; lead and lag compensator design; design with state space representations. Two 1-hour lectures and one 2-hour lab per week.

Prerequisite: EGR 214

EE 415. DIGITAL CONTROL SYSTEMS DESIGN

Three credits

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.

Prerequisite: EE 414

EE 416. ROBOT VISION

Three credits

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.

Prerequisite: First course in Robotics

EE 418. CONTROLS AND KINEMATICS IN NAVIGATION

Three credits

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.

Prerequisites: EE 318, EE 460

EE 421. POWER SYSTEM ANALYSIS

Three credits

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.

Prerequisite: EE 321

EE 425. POWER ELECTRONICS

Three credits

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.

Prerequisite: EE 252, EE 321

EE 432. ELECTROMAGNETIC FIELDS AND WAVES

Three credits

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.

Prerequisite: EE 337

EE 435. MICROSTRIP CIRCUIT DESIGN**Three credits**

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.

Prerequisite: EE 335/EE337

EE 436. ANTENNA THEORY AND DESIGN**Three credits**

Electromagnetic vector potentials; Green's functions; radiating systems; image theory; reciprocity; directional arrays; linear and broadboard antennas; moment method; aperture antennas; microstrip antennas, and antenna synthesis.

Prerequisite: EE 337

EE 441. DIGITAL SYSTEMS DESIGN**Three credits**

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.

Prerequisite: EE 241

EE 442. MICROCOMPUTER OPERATION AND DESIGN**Three credits**

Microprocessor architecture, microcomputer design, and peripheral interfacing. Micro-programming, 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. Fee: \$50. (same as CS 429)

Prerequisite: EE 345

EE 444. OPERATING SYSTEM PRINCIPLES**Three credits**

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)

Prerequisite: CS 227

EE 445. COMPUTER ORGANIZATION**Three credits**

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)

Prerequisite: EE 241

EE 446. COMPUTER ARCHITECTURE**Three credits**

A study of the design, organization, and architecture of computers, ranging from the microprocessors to the latest "supercomputers." (same as CS 430)

Prerequisite: EE 242 or EE 342

EE 451. OPTO-ELECTRONICS**Three credits**

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.

Prerequisite: EE 337

EE 460. STOCHASTIC PROCESSES IN ENGINEERING**Three credits**

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

Three credits

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.

Prerequisites: EE 361, EE 460

EE 465. DIGITAL SIGNAL PROCESSING

Three credits

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.

Prerequisite: EE 252

EE 471. ADVANCED SOLID STATE DEVICES

Three credits

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.

Prerequisite: EE 271

EE 474. INTEGRATED CIRCUIT DESIGN

Three credits

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 PLAS; 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.

Prerequisites: EE 241, EE 271

EE 481. ADVANCED MICROELECTRONICS LAB

Three credits

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 gettering; 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. Fee: \$45.

Prerequisite: EE 271

EE 482. ADVANCED COMMUNICATION AND ANTENNA LAB

Three credits

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. Fee: \$50.

Prerequisite: EE 335

EE 498. TOPICS IN ELECTRICAL ENGINEERING

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

Three credits

Review of stochastic processes; stochastic integrals and differential equations; Wiener filtering; discrete Kalman filter; applications and additional topics on discrete Kalman filter-

ing; continuous Kalman filter; discrete smoothing and prediction; additional topics on Kalman filtering.

Prerequisites: EE 410, EE 460

EE 514. OPTIMAL CONTROL THEORY **Three credits**

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.

Prerequisite: EE 410

EE 516. ROBOTICS AND ARTIFICIAL INTELLIGENCE **Three credits**

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.

Prerequisite: First course in Robotics

EE 521. COMPUTER AIDED ANALYSIS OF POWER SYSTEMS **Three credits**

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.

Prerequisite: EE 421

EE 535. MICROWAVE CIRCUITS **Three credits**

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.

Prerequisite: EE 435

EE 541. MICROPROCESSOR-BASED SYSTEMS DESIGN **Three credits**

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.

Prerequisite: EE 342

EE 560. DETECTION AND ESTIMATION THEORY **Three credits**

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.

Prerequisite: EE 460

EE 561. COMPUTER COMMUNICATION NETWORKS **Three credits**

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.

Prerequisite: EE 461

EE 562. OPTICAL COMMUNICATION **Three credits**

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.

Prerequisites: EE 432, EE 461

EE 565. DIGITAL IMAGE PROCESSING

Three credits

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.

Prerequisite: EE 460

EE 568. MODERN NAVIGATION SYSTEMS

Three credits

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.

Prerequisites: EE 418, EE 460

EE 571. MODERN SOLID STATE DEVICES AND DESIGN

Three credits

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.

Prerequisite: EE 471

EE 590. PROJECT/THESIS

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

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.

ENGLISH

ENGLISH 431. MEDIEVAL ENGLISH LITERATURE

Three credits

A study of English literature to 1500, exclusive of Chaucer.

ENGLISH 432. TUDOR PROSE AND POETRY

Three credits

Study of English non-dramatic literature, 1485-1603.

ENGLISH 433. SEVENTEENTH CENTURY PROSE AND POETRY

Three credits

A study of the non-dramatic literature of the period.

ENGLISH 434. EIGHTEENTH CENTURY PROSE AND POETRY

Three credits

Study of major authors and literary traditions of the eighteenth century.

ENGLISH 435. ROMANTIC PROSE AND POETRY

Three credits

Study of the chief poets and prose writers of the Romantic Period.

ENGLISH 436. VICTORIAN PROSE AND POETRY

Three credits

Study of major writers, works, and topics of the Victorian era.

ENGLISH 440. CHAUCER

Three credits

Study of Chaucer's works, including *The Canterbury Tales* and *Troilus and Criseyde*.

- ENGLISH 442. SHAKESPEARE** **Three credits**
A study of selected plays; written reports on others not studied in class.
- ENGLISH 444. MILTON** **Three credits**
A study of Milton's poetry and major prose
- ENGLISH 450. THE ENGLISH NOVEL** **Three credits**
A study of the tradition and major writers of the English novel in the eighteenth and nineteenth centuries. Works by Defoe, Richardson, Fielding, Austen, the Brontes, Dickens, Eliot, and Hardy, among others, as well as critical and theoretical works, may be included.
- ENGLISH 452. AMERICAN NOVEL** **Three credits**
A study of the American novel from its beginning to the present.
- ENGLISH 455. MODERN NOVEL** **Three credits**
Study of the major novels of the twentieth century.
- ENGLISH 458. CONTEMPORARY FICTION** **Three credits**
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. EARLY ENGLISH DRAMA** **Three credits**
Study of the drama from the tenth century to 1642; reading of plays by pre-Elizabethan and Elizabethan dramatists exclusive of Shakespeare.
- ENGLISH 463. RESTORATION AND 18TH CENTURY DRAMA** **Three credits**
Study of the drama from 1660-1780.
- ENGLISH 465. MODERN DRAMA** **Three credits**
Study of important dramatists, European and American, from the time of Ibsen.
- ENGLISH 466. AMERICAN DRAMA** **Three credits**
A study of American drama from the colonial period to the present.
- ENGLISH 468. CONTEMPORARY DRAMA** **Three credits**
A study of dramatic literature from the 1960s to the present. Works and major figures from British, American and world drama may be included to reflect the diversity of the plays and playwrights of the period.
- ENGLISH 470. MODERN BRITISH POETRY** **Three credits**
Study of the major English and American novels of the twentieth century.
- ENGLISH 476 . MODERN AMERICAN POETRY** **Three credits**
Study of major movements and representative figures in modern American poetry.
- ENGLISH 494. LITERARY CRITICISM** **Three credits**
A study of literary theory and techniques of analysis.
- ENGLISH 495-496. INDEPENDENT RESEARCH** **Three credits each**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond that of a term paper is required.
Prerequisite: Approval of Department Chairperson.
- ENGLISH 497. SEMINAR** **Three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairperson.
- ENGLISH 498. TOPICS** **Three credits**
The study of a special topic in language, literature, or criticism. Possible topics include literature and science, Black literature, semiotics, children's literature, literature and film, literature and religion, etc.

First Residency

ENGLISH 501R. THE PROFESSIONAL WRITER

Three credits | Residency Course

An introduction to the Writer's life, tools, craft, and the basic elements of the five genres. Students begin with pre-residency readings and exercises. Course is completed in residency. Available only at January and June residency. Capped at 25 students per cohort group.

First Project Semester

You will 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.

ENGLISH 502. WRITING FICTION

Three credits

This is an intermediate course in writing fiction. You will study, explore, and practice the process, form, and discipline of writing fiction. You will write a variety of short fiction samples that demonstrate your understanding of basic fiction elements, point of view, and narrative style.

ENGLISH 503. WRITING POETRY

Three credits

This is an intermediate course in writing poetry. You will study, explore, and practice the process, form, and discipline of writing poetry. You will write a variety of poems that demonstrate your understanding of basic poetic elements, diverse forms, and poetic style.

ENGLISH 504. WRITING SCREENPLAYS

Three credits

This is an intermediate course in writing screenplays. You will study, explore, and practice the process, form, and discipline of writing screenplays. You will write a variety of scenes that demonstrate your understanding of basic film design, diverse forms, and cinematic styles.

ENGLISH 505. WRITING PLAYS

Three credits

An intermediate level course in writing plays. You will explore, study, and practice the process, forms, and discipline of writing all forms of stageplays. You will write a variety of scenes and short plays that demonstrate your understanding of basic stage elements, theatrical conventions, and dramatic forms.

ENGLISH 506. WRITING CREATIVE NONFICTION

Three credits

This is an intermediate level course in writing creative nonfiction. You will explore, study, and practice the process, forms, and discipline of writing all forms of creative nonfiction. You will write a variety of short pieces that demonstrate your understanding of basic narrative elements, point of view, factual research, and narrative prose styles. Second Residency.

ENGLISH 510R PLANNING THE WRITING LIFE

Three credits | Residency Course

You create project outlines and writing proposals for drafting new work in your major field of study area. Course is team-taught in residency by a team of faculty members from all disciplines in a series of modules including: research, fair use, copyright introduction, arts delivery methods, intro to oral interpretation for writers. You will attend lectures and required readings throughout the week.

Second Project Semester

ENGLISH 512. GENRE AND CONTEXT

Three credits

You will read, analyze, critique, and discuss in-depth your agreed upon reading list with a genre specialist mentor writer and cohort groups. Individually you will keep a dialectical notebook and write your own annotated bibliography of your own reading list that has been approved by the writer mentor. Working in small groups, you will build an anthology and write its introduction to that work that will demonstrate your competency level of analysis in one genre area as well as your mastery of the elements and craft in their major genre area. Final analysis and anthology introductions will be presented at following residency.

ENGLISH 514. WRITING PROJECTS

Three credits

An upper-level drafting semester where you will begin drafting your thesis project and demonstrate your competency and understanding of the form and discipline of that genre. The work and your plan for completing your thesis will be presented in the following residency course. Taken in conjunction with the ENG 512 Genre and Context course.

Third Residency

ENGLISH 516R. FINAL PROJECT/THESIS PLAN

Three credits | Residency Course

An upper-level course in critique, analysis, and self-evaluation. During this intense residency week, you will stand and deliver your own analysis of your reading list, an analysis and critique of your own work, and present your work plan for the thesis project semester that must be approved by mentoring faculty. Students will attend multiple faculty and student presentations within each of their genres addressing topics such as; writing a proposal for their writing semester, continued work in the business of writing, and oral and written presentation of work. You will meet one-on-one with your faculty mentors and with the program director to gain full approval of your writing proposal by week's end.

Third Project Semester

ENGLISH 520. FINAL PROJECT

Six credits | Thesis

The M.A. thesis project semester is an intense immersion in the writing, revision, and completion of a full-length manuscript, required supporting documents, and a plan for a genre-specific public presentation during the capstone residency. You will work closely one-on-one with a mentoring faculty member through e-mail and hardcopy draft exchanges.

Final Residency

ENGLISH 525R MASTERS CAPSTONE

Three credits | Residency Course

The final presentation and public reading of each M.A. students' completed writing project. Each work will receive a written critique and final reading by an agent, editor, producer, or director. This residency week will include several seminars and workshops aimed at moving the individual project towards its appropriate public venue. You will work with a mentoring faculty team throughout the week.

Optional

ENGLISH 530. CONTINUOUS REGISTRATION

One - Three credits

This course allows you to continually register where needed for further revision in preparation of your final project. You must continually register until revisions are complete or you complete the required capstone.

HISTORY

HISTORY 421. AMERICAN SOCIAL HISTORY

Three credits

This course entails a consideration of the development of American society from the colonial period until present times. Attention will focus especially on the rise of industrialism and its impact on society in the late 19th and 20th centuries.

HISTORY 422. AMERICAN INTELLECTUAL HISTORY

Three credits

This course is a survey of the formative ideas which seem most to have influenced American perceptions of the individual, society, and the drift of human affairs. The focus is upon the late 19th and early 20th centuries because this period is the time when seminal ideas were articulated in America.

HISTORY 424. AMERICAN ECONOMIC HISTORY

Three credits

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. AMERICAN ETHNIC HISTORY **Three credits**

A study of the institutions and problems that have characterized various immigrant, Black, and Indian communities from colonial times to the present.

HISTORY 428. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES

Three credits

A selective treatment of major themes in American foreign policy from the founding of the Republic to the present.

HISTORY 431. COLONIAL AMERICA

Three credits

Discovery, exploration and settlement; development of social, political, religious and intellectual institutions; independence and political reorganization.

HISTORY 432. THE NATIONAL PERIOD

Three credits

A study of the political and economic history of the United States from 1783 to 1865. Special attention will be given to the evolution of sectional differences and the culmination of these differences in intersectional warfare.

HISTORY 433. THE AGE OF BIG BUSINESS, 1865-1914

Three credits

A study of the political and economic history of the United States from 1865 to 1914. Special attention will be paid to the period of congressional dominance and the restoration of presidential power at the turn of the century; the economic, social and political consequences of the industrial revolution; and the rise of urban America.

HISTORY 434. THE UNITED STATES, 1900-1945

Three credits

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

Three credits

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 post-war world and how changing conditions over the past 40 years have altered this role.

HISTORY 441-442. HISTORY OF GREAT BRITAIN AND THE BRITISH EMPIRE AND COMMONWEALTH

Three credits each semester

A study of British history from the Neolithic period to present times. The first semester will cover social, economic, and political developments to 1783, including expansion overseas. The second semester will cover the consequences of the industrial revolution and the evolution of the empire into the Commonwealth.

HISTORY 445. HISTORY OF EASTERN EUROPE

Three credits

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

Three credits

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

Three credits

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

Three credits

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**Three credits**

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**Three credits**

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**Three credits**

A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.

HISTORY 456. EUROPE, 1900 - 1960**Three credits**

Against a background of the internal and international developments of the leading powers, the class will study the origins and results of the two World Wars.

HISTORY 467. HISTORY OF MODERN INDIA**Three credits**

A study of the political, social, and economic development of the Indian sub-continent since 1500.

HISTORY 476. WORLD WAR II**Three credits**

Consideration of the causes of the war, military strategy and tactics, diplomatic interests of the participants, and resulting Cold War problems.

HISTORY 491. HISTORIOGRAPHY AND RESEARCH**Three credits**

An introduction to historical research and writing. The writings and ideas of major historians of the past and present are examined. The student is exposed to research methods, particularly in the area of primary sources, and to the construction and criticism of the historical monograph.

HISTORY 495-496. INDEPENDENT RESEARCH**One to three credits**

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

HISTORY 497. SEMINAR**One to three credits**

Presentations and discussions of selected topics. (May be repeated for credit)

Prerequisite: Approval of the instructor is required.

HISTORY 498. TOPICS**Three credits**

Special topics in history. This course will be offered from time to time when interest and demand justify it.

MATHEMATICS**MTH 411. REAL ANALYSIS****Four credits**

A rigorous study of the topology of the real line, limits, continuity, differentiation, integration, and series of functions. Offered fall semester of even years.

MTH 413. FUNCTIONS OF SEVERAL VARIABLES**Three credits**

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.

Prerequisites: Mth 311 and a course in linear algebra. Offered when demand warrants.

MTH 414. COMPLEX ANALYSIS**Three credits**

Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities and residues. Offered when demand warrants.

MTH 431. ABSTRACT ALGEBRA I**Four credits**

A rigorous study of elementary number theory, groups, rings, and fields.

Offered fall semester of odd years.

MTH 432. ABSTRACT ALGEBRA II

Three credits

A continuation of Mathematics 331. Polynomial rings, ideals, field extensions and Galois Theory.

Prerequisite: Mth 331

Offered when demand warrants.

MTH 442. TOPOLOGY

Three credits

Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces.

Prerequisite: Mth 311 or consent of instructor.

Offered when demand warrants.

MTH 443. GEOMETRY

Three credits

A study of selected topics from Euclidean and non-Euclidean geometry.

Offered fall semester of even years.

MTH 451. PROBABILITY AND MATHEMATICAL STATISTICS I

Three credits

Random variables, probability distributions, expectation and limit theorems, confidence intervals.

Offered every fall.

MTH 452. PROBABILITY AND MATHEMATICAL STATISTICS II

Three credits

Hypothesis testing, non-parametric methods, multivariate distributions, introduction to linear models.

Prerequisite: Mth 351 or consent of instructor.

Offered spring semester of odd years.

MTH 454. STATISTICAL METHODOLOGY

Three credits

This course emphasizes applications, using statistical computer packages (SPSS 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 the log-linear model.

Prerequisite: Mth 351 or consent of instructor.

Offered spring semester of even years.

MTH 460. LINEAR PROGRAMMING

Three credits

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. (Same as CS 460)

Prerequisite: Programming experience in a high-level language.

Offered spring semester of even years.

MTH 461 APPLIED MATHEMATICS I

Three credits

Intended for physical science and engineering students. Topics include inner product spaces, operator algebra, eigenvalue problems, Sturm-Liouville theory, Fourier series and partial differential equations.

Offered fall semester of odd years.

MTH 462. APPLIED MATHEMATICS II

Three credits

Intended for physical science and engineering students. Topics include systems of linear differential equations; nonlinear differential equations; qualitative, numerical, and finite difference methods; theorems of Green and Stokes and the Divergence Theorem.

Offered spring semester of even years.

MTH 463. OPERATIONS RESEARCH

Three credits

A survey of operations research topics such as decision analysis, inventory models, queueing models, dynamic programming, network models, heuristic models, and non-linear programming. (Same as CS 463)

Prerequisite: Programming experience in a high-level language.

Offered spring semester of odd years.

MTH 464. NUMERICAL ANALYSIS

Three credits

Numerical methods of differentiation, integration, solution to equations and of differential equations with emphasis on problems that lend themselves to solution on computers.

Prerequisites: A course in differential equations and programming experience in a high-level language.

Offered when demand warrants.

- MTH 470. READINGS IN MATHEMATICS** **Three credits**
 Individual study of special topics under the supervision of a faculty member. Designed for students who have completed a substantial amount of course work in mathematics.
 Prerequisite: Consent of Department Chairperson. May be repeated for credit.
- MTH 511. MEASURE AND INTEGRATION** **Three credits**
 Measures, measurable functions, integration, convergence theorems, product measures, signed measures.
 Prerequisite: Mth 442 or consent of instructor. Offered when demand warrants.
- MTH 513. FUNCTIONAL ANALYSIS** **Three credits**
 Topics include: Banach spaces, Lp-spaces, Hilbert spaces, topological vector spaces, and Banach algebras.
 Prerequisites: Mth 311 and a course in linear algebra. Offered when demand warrants.
- MTH 532. MODERN ALGEBRA** **Three credits**
 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.
 Prerequisites: Mth 331 and a course in linear algebra or consent of instructor.
Offered when demand warrants.
- MTH 542. ALGEBRAIC TOPOLOGY** **Three credits**
 Polyhedra, simplicial homology theory, cohomology rings, and homotopy groups.
 Prerequisite: Mth 442 Offered when demand warrants.
- MTH 498/598. TOPICS IN MATHEMATICS** **Variable credit**
 A wide range of topics in pure and applied mathematics may be offered upon demand.
 Prerequisite: Consent of instructor May be repeated for credit.
- MTH 590. THESIS** **Variable credit**
 Prerequisite: Consent of Department Chairperson. May be repeated for credit.

NURSING

NOTE: Students in practicum courses must carry personal liability insurance.

NURSING 401. NURSING PRACTICE I **12 credits**

This course introduces the student to the profession of nursing. Use of the nursing process is emphasized in meeting the human needs of clients identified as individuals, families, and communities. Nursing theory is correlated with clinical practice in the Nursing Learning Center and selected clinical agencies.

Hours weekly: 9 hours class; 12 hours clinical

NURSING 402. NURSING PRACTICE II **12 credits**

Building on the foundation of Nursing 401, the nursing process is used to assist individuals, families, and communities to achieve optimum health and to resolve selected medical, surgical, and mental health problems. Nursing theory is correlated with clinical practice in the Nursing Learning Center and selected clinical agencies.

Hours weekly: 7 hours class; 15 hours clinical

NURSING 403. NURSING PRACTICE III **12 credits**

This course prepares the student for professional role development in emerging health care delivery systems. The nursing process is utilized in assisting individuals, families, and communities to meet their health needs. Nursing theory is correlated with clinical practice in a variety of health care settings.

Hours weekly: 6 hours class; 18 hours clinical practice

NURSING 406. ADVANCED HEALTH ASSESSMENT **Three credits**

This course presents an overview of the full and comprehensive health assessment of the adult client. In most respects the physical assessment of the elderly is no different from the young adult. Emphasis on multiple aspects of assessment, including physical, func-

tional, and mental health assessment along with transcultural variations, will prepare the student for advanced practice in gerontological nursing. Students are given the opportunity to practice their assessment skills in a laboratory component.

Prerequisite: Graduate standing or permission of instructor.

NURSING 498. PHARMACOTHERAPEUTICS AND CLINIC DECISION-MAKING IN NURSING 2 modules (2 credit/1 credit) 3 credits

This course is designed to assist students to understand the multidisciplinary science of pharmacology based on human systems. Content includes drug classifications, indications, adverse effects and contraindications, age-related variables, dosages, and nursing implications. Using critical thinking skills related to drug therapy, clinical decision-making is developed.

NURSING 501. THEORETICAL FOUNDATIONS OF NURSING Three credits

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.

Prerequisite: Graduate standing.

NURSING 502. APPLICATION OF NURSING RESEARCH Three credits

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.

Prerequisite: Undergraduate Statistics

NURSING 504. ADVANCED ROLE DEVELOPMENT IN NURSING Three credits

Examines the role development process and its applicability to the advanced practice nurse. 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.

NURSING 505. CURRENT PERSPECTIVES IN NURSING Three credits

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.

Prerequisite: Graduate standing

NURSING 506. ADVANCED PRACTICE IN GERONTOLOGICAL NURSING I

Three credits

Students use theories from nursing and other sciences to plan, manage, and evaluate direct care services provided to older adults and their families in community settings. Clinical experience focuses on case management, including advanced assessment, diagnosis, planning and evaluation as it relates to health promotion and maintenance in this population. Opportunities for interdisciplinary experience and collaborative practice are provided. The seminar component of the course is designed to develop clinical decision-making skills through case study presentations and extend the theoretical and research base of advanced clinical practice.

Prerequisites: NSG 406, 501, 511, and 504 (may be taken concurrently)

NSG 508. LEADERSHIP AND ADVANCED PRACTICE NURSING Three credits

This course provides an opportunity for students to discuss theoretical foundations of leadership and management as they relate to the multifaceted role of the advanced practice nurse. 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.

Prerequisite: NSG 504 or graduate standing with permission of the instructor

NURSING 511. PERSPECTIVES ON AGING

Three credits

Human development from adulthood through old age is analyzed from a multidisciplinary perspective. The interrelationship of physical, psychological, and social processes of aging is analyzed. Holistic assessment of aging, including the interaction between an aging society and the subsequent increase in chronic health problems as they impact on social resources and health care delivery, is emphasized.

Prerequisite: Graduate standing

NURSING 515. ADVANCED PRACTICE IN GERONTOLOGICAL NURSING II

Three credits

Students use theories from nursing and other sciences to plan, manage and evaluate direct care services provided to frail older adults and their families in institutional and community settings. Clinical experience focuses on case management, including advanced assessment, diagnosis, planning and evaluation as it relates to the management of acute conditions and complex chronic health problems. Opportunities for interdisciplinary experiences and collaborative practice are provided. The seminar component of the course is designed to develop clinical decision-making skills through case study presentations and to extend the theoretical and research base of advanced clinical practice.

Prerequisites: NSG 406, 501, 511, and 504 (may be taken concurrently)

NURSING 525. PSYCHOPATHOLOGY OF ACUTE AND CHRONIC MENTAL ILLNESS

Four credits

This course explores the development of mental illness in adults with an emphasis on growth and development issues, psychopathological processes, diagnostic criteria, and treatment of individuals with these illnesses pertinent to advanced nursing practice.

Prerequisite: Graduate standing or the permission of the instructor.

NURSING 526. CLINICAL MODALITIES IN ADVANCED PSYCHIATRIC MENTAL HEALTH NURSING PRACTICE

Three credits

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.

Prerequisite: Graduate standing

NURSING 527. FAMILY SYSTEMS THEORY I

Three credits

This course examines the process of human development in the context of the family relationship system. A theoretical framework for understanding this process and the therapeutic methods that derive from it are presented. Orientation to various methods and techniques of family therapy is provided.

Prerequisite: Graduate standing or the permission of the instructor

NURSING 528. FAMILY SYSTEMS THEORY II

Three credits

Critical phases or occurrences in the family that can interfere with, or enhance, human growth and development are addressed in this course. Problems are discussed both from a theoretical and therapeutic perspective.

Prerequisite: Nursing 527

NURSING 530. PRINCIPLES AND PRACTICES OF ADULT EDUCATION

Three credits

This elective course examines research and theory in adult education which serve as a basis for program development and design. It includes teaching/learning strategies, legal/ethical issues, marketing and sources of funding for adult education programs.

NURSING 531. MENTAL HEALTH IN THE ELDERLY **Three credits**

This elective course presents an overview of mental health and aging that is grounded in an integrated biopsychosocial approach to human behavior. Designed to bring professionals up to date on society's approach to the basic issues that confront those in the field of aging, it features exploration of issues related to prevention, recognition, and management of major psychiatric disorders affecting the elderly in a variety of settings. Content includes tools for assessment of mental health and functional status and responses to problematic behaviors. Research related to course topics will be evaluated in terms of its applicability to clinical practice.

NURSING 533. PHARMACOTHERAPEUTICS FOR ADVANCED PRACTICE NURSING **Three credits**

This course explores the basic concepts of clinical pharmacokinetics and their application in drug regime design and monitoring. Pharmacotherapy for major diseases is emphasized. The course provides the student with a strong background in pharmacological agents and basic pharmacological principles. The course highlights major drug categories, purpose of action, common interactions and contraindications. Nursing and pharmacy practice faculty work collaboratively to provide the student with case studies that allow students to demonstrate their understanding of applied pharmacotherapy within the parameters of advanced practice nursing.

NURSING 535. ADVANCED PRACTICE IN PSYCHIATRIC MENTAL HEALTH NURSING I **Three credits**

Supervised advanced psychiatric mental health nursing practice is undertaken with adults and/or older adults and their families in a variety of settings. Theories and practice are integrated to address the process of assessment and diagnosis of functional and dysfunctional patterns of behaviors; the formation of initial intervention strategies; and implementation of treatment and case management of psychiatric clients. A minimum of 15 hours of practice and 3 hours of small group supervision is required each week. Prerequisites or co-requisites: Nursing 525, 526, and 527

NURSING 536. ADVANCED PRACTICE IN PSYCHIATRIC MENTAL HEALTH NURSING II **Three credits**

Supervised advanced psychiatric mental health nursing practice is undertaken with adults and/or older adults and their families in a variety of settings. The focus is on the refinement and development of clinical interventions. Outcome evaluation, termination and professional role development are emphasized. A minimum of 15 hours of practice and 3 hours of small group supervision is required each week. Prerequisites or co-requisites: Nursing 528, 533, and 535

NURSING 590. SCHOLARLY PROJECT **Three credits**

The student, under the guidance of a selected faculty member, will critique and synthesize relevant research and literature on a clinical problem in nursing. The student will explore interrelationships between ideas in a scholarly manner. Implications for advanced nursing practice will be addressed. Each student will present his/her project upon its completion.

Prerequisite: Consent of instructor

NURSING 596-596. INDEPENDENT STUDY **One to three credits**

Affords an opportunity for independent study of selected topics under faculty supervision. Prerequisite: Permission of Department Chairperson or Program Director

NURSING 598. TOPICS IN NURSING **Three credits**

Advanced study of topics of special interest not extensively treated in regular courses. Prerequisite: Graduate standing

ELECTIVE COURSES

In consultation with the advisor, the graduate student may choose any graduate course available in any program in the University.

See Business Administration for MBA course descriptions.

PHARMACY

PHA 301 & PHA 304. FOUNDATIONS OF PHARMACY PRACTICE

Two credits each

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. Prerequisite: P-1 standing.

PHA 302, 401, 402, 501, 502. PHARMACEUTICAL CARE LAB I - V

One credit each

This five-semester sequence is designed to develop the student's ability to integrate and apply information as well as practice skills that are taught throughout the curriculum. The use of case studies, role-plays, presentations and other active-learning strategies engages students in the learning process and requires them to synthesize information at increasing levels of complexity as the student moves through the course sequence. Prerequisite: P-1, P-2 or P-3 standing as appropriate for each laboratory.

PHA 308. PHARMACEUTICAL AND HEALTH CARE DELIVERY

Three credits

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. Prerequisite: P-1 standing or consent of instructor.

PHA 310. CLINICAL RESEARCH AND DESIGN

Three credits

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. Prerequisite: MTH 150 or equivalent and P-1 standing or consent of instructor.

PHA 311 & PHA 312. PHARMACEUTICS I & II

Four credits each

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. Fee: \$40 Prerequisite: P-1 standing or consent of instructor. PHA 311 is a prerequisite for PHA 312.

PHA 313. PHARMACY CALCULATIONS

One credit

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. Prerequisite: P-1 standing or consent of instructor.

PHA 327. MEDICAL MICROBIOLOGY

Four credits

An overview of microbiology with special emphasis on pathogenic microbiology. Lecture: Three hours per week. Laboratory: Three hours per week. Fee: \$40. Cross listed with BIO 327. Prerequisite: P-1 standing or consent of instructor.

PHA 331 & PHA 332. MEDICAL ANATOMY & PHYSIOLOGY I & II

Four credits each

In-depth principles of human anatomy and physiology as well as an introduction to pathophysiology will be presented. Lecture: Three hours per week. Laboratory/Recitation: Three hours per week. Fee: \$40. Prerequisite: P-1 standing or consent of instructor. PHA 331 is a prerequisite for PHA 332.

PHA 365. MEDICAL BIOCHEMISTRY

Four credits

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. Prerequisite: P-1 standing or consent of instructor.

PHA 403. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE

One credit

This course will provide introductory practice experiences to students in a variety of practice settings. This early experience is critical to the process of professional socialization which can only develop via interactions with faculty members, practitioners, peers and other health care professionals. Students will spend three hours per week in a structured, supervised learning process in an in-patient or out-patient setting. Students are responsible for transportation to and from all off-campus sites. Prerequisite: PHA 301, PHA 302, PHA 304.

PHA 405. PHARMACEUTICAL CARE SYSTEMS: DESIGN & CONTROL

Two credits

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

Three credits

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. Prerequisite: PHA 331, 332, 365 or consent of instructor.

PHA 411. BIOPHARMACEUTICS & CLINICAL PHARMACOKINETICS

Four credits

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. Prerequisite: PHA 311, PHA 312 or consent of instructor.

PHA 412. MANAGEMENT OF PHARMACY OPERATIONS **Three credits**

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. Prerequisite: PHA 308 or consent of instructor.

**PHA 421, 423, 425, 426, 428, 430, 521, 523, 525, 526, 528, 530
PHARMACOTHERAPEUTICS**

A four-semester, twelve-module sequence (three modules per semester) 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. Topics and associated credits are as follows: Prerequisite: PHA 310, 327, 331, 332, 365.

**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.

PHA 450. NEUROPHARMACOLOGY OF DRUGS OF ABUSE **Three credits**
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. Prerequisite: PHA 421 or consent of instructor**PHA 452. EXTEMPORANEOUS COMPOUNDING** **Three credits**
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. Fee: \$40. Prerequisites: PHA 311 and PHA 312 and permission of instructor.

PHA 454. HISTORY OF PHARMACY AND DRUG DEVELOPMENT

Three credits

The History of Pharmacy and Drug Discovery is designed to provide the student with a general understanding of the development of the profession of pharmacy and its interrelationship with the discovery of critical therapeutic agents. This course will consider the contributions of the ancient Mesopotamian, Egyptian, Chinese, Greek and Roman cultures to the development of Pharmacy. The student will also be exposed to events that lead to the rise of professional pharmacy in Europe during the Renaissance period. Using this as a foundation the course will focus on the development and rise of professional pharmacy within the United States from the 15th century to modern times. An important aspect of this course will be discussions concerning the development of critical therapeutic agents that revolutionized the treatment of disease and how these discoveries affected the profession of pharmacy. Aspects of the scientific process and how it has contributed to these discoveries will also be discussed.

PHA 455. INTRODUCTION TO THE MANAGEMENT OF THE COMMUNITY PHARMACY

Three credits

This course is designed to introduce the student to concepts needed to be a successful community pharmacist. The student will be introduced to principles in pharmacy and fiscal management, legal issues relating to pharmacy and entrepreneurship. This course will consist of lectures and projects related to pharmacy management and practice, and legislative issues.

PHA 503 AND PHA 504. LONGITUDINAL CARE LAB I & II

One credit each

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. Prerequisite: PHA 503 is prerequisite to PHA 504.

PHA 505. PHARMACY LAW

Two credits

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

Three credits

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. Prerequisite: PHA 308 and PHA 310 or consent of instructor.

PHA 510. GENERAL MEDICINE ADVANCED PHARMACY PRACTICE EXPERIENCE

Six credits

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 six weeks. Prerequisite: P-4 standing.

PHA 511. AMBULATORY CARE ADVANCED PHARMACY PRACTICE EXPERIENCE **Six credits**

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 six weeks. Prerequisite: P-4 standing.

PHA 512. COMMUNITY ADVANCED PHARMACY PRACTICE EXPERIENCE **Six credits**

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 six weeks. Prerequisite: P-4 standing.

PHA 513. RURAL ADVANCED PHARMACY PRACTICE EXPERIENCE **Six credits**

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in rural practice settings. Clinical practice: Forty hours per week for a total of six weeks. Prerequisite: P-4 standing.

PHA 532 ALTERNATIVE MEDICINE AND NUTRITION **Three credits**

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. Prerequisite: PHA 331, 332, 365 or consent of instructor.

PHA 550. PRINCIPLES OF EXPERIMENTAL PHARMACOLOGY **Three credits**

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. Fee: \$40.

PHA 551. VETERINARY PRODUCTS **Three credits**

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. Prerequisites: PHA 424 and 426.

PHA 552. PRINCIPLES OF BIOORGANIC AND MEDICINAL CHEMISTRY **Three credits**

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. Prerequisites: CHEM 231-232, PHA 327, 365.

ACADEMIC LEADERSHIP FOR GRADUATE AND PROFESSIONAL STUDIES

Dr. Maravene Loeschke, Provost

Dr. Barbara Samuel Loftus, Associate Provost

Dr. Paul C. Browne, Dean, Jay S. Sidhu School of Business and Leadership

Dr. Dale A. Bruns, Dean, College of Science and Engineering

Dr. Darin E. Fields, Dean, College of Arts, Humanities and Social Sciences

Dr. Bernard W. Graham, Dean, Nesbitt College of Pharmacy and Nursing

Dr. Donald Shandler, Dean, Graduate Studies and Continued Learning

ADMINISTRATIVE SUPPORT OFFICES

Center for Continued Learning

(570) 408-4462

Second Floor, Max Roth Hall

215 South Franklin Street

FAX: (570) 408-7846

Graduate Teacher Education

(570) 408-4671

Lower Level, Breiseth Hall

137-159 South Franklin Street

FAX: (570) 408-4905

Financial Aid Office

(570) 408-4345

Third Floor, Passan Hall

267 South Franklin Street

FAX: (570) 408-7808

International Student Advisor

(570) 408-4107

Second Floor, Conyngham Hall

130 South River Street

FAX: (570) 408-7811

Financial Services Office

(570) 408-4658

Second Floor, Passan Hall

267 South Franklin Street

FAX: (570) 408-4902

e-mail: billings@wilkes.edu

Recorder's Office (TRANSCRIPTS)

(570) 408-4855

First Floor, Passan Hall

267 South Franklin Street

FAX: (570) 408-7885

Graduate Admissions and Records

(570) 408-4160

Third Floor

215 South Franklin Street

FAX: (570) 408-7846

Registrar's Office

(570) 408-4853

First Floor, Passan Hall

267 South Franklin Street

FAX: (570) 408-7885

School of Pharmacy

(570) 408-4280

First Floor, Stark Learning Center

160 South River Street

FAX: (570) 408-7828

OFFICE OF GRADUATE AND CONTINUED LEARNING

(570) 408-4160
1-800-WILKES U, ext. 4160
(1-800-945-5378)
www.wilkes.edu

Ms. Kathleen J. Diekhous, Coordinator of Graduate Programs (570) 408-4160
Ms. Margaret Steele, Director of Center for Continued Learning (570) 408-4462

PROGRAM CONTACTS FOR GRADUATE AND PROFESSIONAL STUDIES

PROGRAM	CONTACT
Creative Writing (M.A.)	Dr. Bonnie Culver (570) 408-4527
Electrical Engineering (M.S.E.E.)	Dr. Thyagarajan Srinivasan (570) 408-4811
Graduate Teacher Education Program (M.S.)	Dr. Michael J. Speziale (570) 408-4679
Classroom Technology	Ms. Barbara J. Moran (570) 408-4672
Educational Development & Strategies	Ms. Kristine Pruett (570) 408-4676
Educational Leadership	Dr. Rhoda B. Tillman (570) 408-4677
Instructional Technology	Ms. Victoria M. Glod (570) 408-4678
Secondary Education / Biology & Chemistry	Dr. Michael A. Steele (570) 408-4763
Secondary Education / English & History	To Be Announced (570) 408-4530
Secondary Education / Mathematics	Dr. Louise M. Berard (570) 408-4830
Special Education	Dr. Michael J. Speziale (570) 408-4679
Mathematics (M.S.)	Dr. Louise M. Berard (570) 408-4830
Nursing (M.S.)	Dr. Mary Ann Merrigan (570) 408-4070
Pharmacy (Pharm. D.)	Dr. Harvey A. Jacobs (570) 408-4277