

DEPARTMENT OF SCIENCE AND MATHEMATICS

Dr. Sara Sawyer, Department Chairperson

Professors: K. Evans, D. O'Dell

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The Department of Science and Mathematics houses a wide variety of programs. In addition to the Teacher Education programs many students choose to follow a pre-professional track. They major in biology or chemistry (or both) while preparing for professional schools. Pre-professional training is available in the following areas:

Medicine	Physician's Assistant	Medical Technology
Pharmacy	Optometry	Radiology
Dentistry	Physical Therapy	Pre-nursing
Veterinary Medicine	Psychiatry	

After graduation, a wide variety of employment opportunities exists. In addition to teaching, graduates are employed as nurses, pharmacists, or lab technicians. They are employed at such places as the Division of Natural Resources, the Department of Environmental Protection, and the State Police Forensics lab. Other students have gone on to graduate school to pursue advanced degrees in biology and chemistry.

Science and Math students have the opportunity to participate in an array of student clubs and organizations, including Chi Beta Phi, the Science and Math Honorary Society, the Student Affiliates of the American Chemical Society, and Pioneers in Nursing for Pre-nursing students. Students have worked on community service events, helped host national meetings of Chi Beta Phi, and made presentations at the national meetings of the American Chemical Society. A wide variety of extra-curricular activities also are available for student participation.

For additional information about the Department of Science and Mathematics, its programs, faculty, and organizations call (304) 462-6310.

Degree Program

Bachelor of Arts

Chemistry

Bachelor of Science

Biology

Bachelor of Arts in Education:

Biology (9-Adult)

Chemistry (9-Adult)

Chemistry and Physics (9-Adult)

General Science (5-Adult) or General Science (5-9)

Mathematics (5-Adult) or Mathematics (5-9)

PRE-PROFESSIONAL PROGRAMS AND HEALTH-RELATED PROFESSIONS

Many health-related professions require degrees from professional schools after completing an undergraduate degree. These professional schools have specific admission requirements and students interested in obtaining one of these degrees should begin planning their undergraduate curriculum as early as possible. Any student interested in pursuing a career in one of these areas should contact the health-professions advisor.

I. Curriculum for Medical, Dental, and Veterinary Professions

A Bachelor of Science degree is recommended for students planning careers in medicine, dentistry, or veterinary medicine. It is possible to gain admittance into any of these programs with a non-science major, but it is usually more difficult as a student will be taking the science requirements necessary for admittance into these programs in addition to other requirements for the major. The basic science requirements for admission into medical, dental, or veterinary medical programs are similar. In addition to coursework, most programs require experience in the profession. Some programs have a specific number of hours and types of experience that an applicant must have, thus early planning is critical.

All programs require the applicant take an entrance examination that will test the applicants knowledge of various fields of science. The minimum entrance requirements for the programs should be completed before taking these exams. Students applying to medical school must take the Medical College Admission Test (MCAT), which is given January-September. The Dental Admission Test (DAT) is required for students applying to dental school; this exam is given year round. Students applying to veterinary school must take either the General Record Examination (GRE) or the MCAT, depending on the requirement of the school; the GRE is offered year round.

Basic Requirements for Medical School

BIOL 120, 121 Principles of Biology I and II.....	8 credits
CHEM 101, 102 General Chemistry I and II	8 credits
CHEM 301, 302 Organic Chemistry I and II.....	8 credits
CHEM 380 Biochemistry I	4 credits
ENGL 101, 102 Critical Reading and Writing I and II.....	6 credits
MATH 115 College Algebra.....	3 credits
PHYS 201, 202 General Physics I and II.....	8 credits
SOCIAL SCIENCE/BEHAVIOR.....	9 credits
TOTAL	54 credits

Some schools may require additional courses in English and Mathematics.

Basic Requirements for Dental and Veterinary School

BIOL 120, 121 Principles of Biology I and II.....	8 credits
CHEM 101, 102 General Chemistry I and II	8 credits
CHEM 301, 302 Organic Chemistry I and II.....	8 credits
ENGL 101, 102 Critical Reading and Writing I and II.....	6 credits
MATH 115 College Algebra.....	3 credits
PHYS 201, 201 General Physics I and II.....	8 credits
SOCIOLOGY, HISTORY	3-6 credits
TOTAL	44-47 credits

Some schools may require additional courses in English and Mathematics.

Recommended courses for Medical, Dental, and Veterinary School

BIOL 309 Human Anatomy and Physiology I and II	8 credits
BIOL 321 Animal Physiology	4 credits
BIOL 335 Cell Physiology.....	4 credits
BIOL 361 Microbiology	4 credits
BIOL 420 Neurobiology	3 credits
BIOL 456 Genetics	4 credits
CHEM 380 Biochemistry I and II.....	8 credits
MATH 256 Probability and Statistics	3 credits

A student should plan on taking as many of the recommended courses as feasible; it is not necessary to take all of them.

II. Curriculum for Pharmacy

Preparation for a career in pharmacy requires completion of 67-75 credit hours (depending on the program) and an undergraduate degree is not required. The Pharmacy College Admission test (PCAT) is required of all applicants and can be taken in July, September and January.

General Course Requirements

BIOL 120, 121 Principles of Biology I and II	8 credits
BIOL 309, 310 Human Anatomy and Physiology I and II *	8 credits
BIOL 361 Microbiology	4 credits
CART 101 Introduction to Public Speaking	3 credits
CHEM 101, 102 General Chemistry I and II	8 credits
CHEM 301, 302 Organic Chemistry I and II.....	8 credits
ECON 201 Principles of Microeconomics.....	3 credits
ENGL 101, 102 Critical Reading and Writing I and II.....	6 credits
HISTORY	3 credits
MATH 115 College Algebra.....	3 credits
MATH 120 Precalculus	4 credits
MATH 201 Calculus I.....	4 credits
MATH 256 Probability and Statistics I.....	3 credits
PHYS 201, 202 General Physics I and II.....	8 credits
PSYCHOLOGY, SOCIOLOGY.....	3 credits
TOTAL	67-75 credits

** These courses are required by some, but not all programs.*

III. Curriculum for Physical Therapy

The curriculum for admission into physical therapy programs varies between schools. The courses listed below fulfill the requirements of many programs, but not all. Most schools require that applicants have a four-year degree. In addition to coursework, most physical therapy programs require that an applicant has observed a physical therapy practice and some programs require a certain number of hours and observation of more than one practice. A student interested in a career in physical therapy must begin planning early to meet the admission requirements. Physical therapy programs require that applicants take the GRE.

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General Course Requirements

BIOL 120, 121 Principles of Biology I and II	8 credits
BIOL 309, 310 Human Anatomy and Physiology I and II	8 credits
CHEM 101, 102 General Chemistry I and II	8 credits
ENGL 101, 102 Critical Reading and Writing I and II	6 credits
HLTH 107 Introduction to Medical Terminology *	1 credit
MATH 115 College Algebra.....	3 credits
MATH 256 Probability and Statistics I.....	3 credits
PHYS 201, 202 General Physics I and II.....	8 credits
PSYC 201 General Psychology	3 credits
PSYC 250 Lifespan Development #	3 credits
TOTAL	31 credits

** Some programs require 3 credits of medical terminology*

Some programs require a different upper-level psychology course

IV. Curriculum for Physician Assistant

Students interested in becoming a Physician Assistant (PA) must complete a Bachelor's Degree. The course requirements for admission into a PA program vary by school, but have some overlap. Physician Assistant programs require that applicants take the GRE.

General Course Requirements

BIOL 120, 121 Principles of Biology I and II	8 credits
BIOL 309, 310 Human Anatomy and Physiology I and II	8 credits
BIOL 361 Microbiology	4 credits
BIOLOGY (UPPER LEVEL).....	4-8 credits
CHEM 101, 102 General Chemistry I and II	8 credits
CHEM 301 Organic Chemistry I	4 credits
CHEM 380 Biochemistry I	4 credits
MATH 256 Probability and Statistics I.....	3 credits
PHYS 201, 202 General Physics I and II.....	8 credits
PSYCHOLOGY	3-6 credits
TOTAL	54-61 credits

BACHELOR OF SCIENCE BIOLOGY

GSC 100 The First Year Experience 1 hour

All degree seeking students are required to take GSC 100 during their first semester. GSC 100 may be used to satisfy one hour of the General Electives requirement.

General Education Requirements 39 hours

Students are required to take BIOL 120, BIOL 121 and MATH 115 as part of their General Education requirements to enhance their success in the program.

Biology Major 63 hours

BIOL 120	Principles of Biology I	
BIOL 121	Principles of Biology II	
BIOL 210	Zoology	4
BIOL 293	Techniques of Science	2
BIOL 305	General Botany	4
BIOL 309	Human Anatomy and Physiology I	4
BIOL 335	Cell Physiology	4
BIOL 361	Microbiology	4
BIOL 400	Ecology and Field Biology	4
BIOL 456	Genetics	4
BIOL 493	Senior Seminar	1
BIOL 499	Individual Research Problems	3
BIOL electives	(BIOL 300 or 400 level)	6
CHEM 101	General Chemistry I	4
CHEM 102	General Chemistry II	4
CHEM 301	Organic Chemistry I	4
MATH 115	College Algebra	
MATH 256	Probability and Statistics I	3
PHYS 201	General Physics I	4
PHYS 202	General Physics II	4

General Electives 0-3 hours

Minor 15-18 hours

Total minimum hours required for degree 120-121 hours

GATEWAY ASSESSMENT - BIOL 293 - CAPSTONE ASSESSMENT - BIOL 493

**BS - BIOLOGY
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 120 (OR) BIOL 121	4	BIOL 121 (OR) BIOL 120	4
CHEM 101	4	CART 101 (or other Gen Ed)	3
ENGL 101	3	CHEM 102.....	4
GSC 100	1	ENGL 102.....	3
MATH 115	3	PED 201.....	1
Total Hours - Fall Semester	15	Total Hours - Spring Semester	15

SECOND YEAR

BIOL 210 (OR) BIOL 361	4	ART 200, CART 200, FNAR 100 (OR) MUSC 200	3
BIOL 293.....	2	BIOL 309 (OR) BIOL 305	4
CHEM 301	4	BIOL ELECTIVE (OR) BIOL 335	3-4
HIST 201, 202, 207, 208 (OR) POSC 203 ..	3	ECON 201, 202, GEOG 203, PSYC 201, SOCL 205 (OR) SOCS 225	3
CSCI 101	3	MATH 256	3
Total Hours - Fall Semester	16	Total Hours - Spring Semester	16-17

THIRD YEAR

BIOL 361 (OR) BIOL 210	4	BIOL 305 (OR) BIOL 309	4
HIST 201, 202, 207, 208 (OR) POSC 203 ..	3	BIOL 335 (OR) BIOL ELECTIVE	3-4
PHYS 201.....	4	PHYS 202.....	4
MINOR.....	4	MINOR.....	3-4
Total Hours - Fall Semester	15	Total Hours - Spring Semester	15-16

FOURTH YEAR

BIOL 400.....	4	BIOL 456.....	4
BIOL 499.....	1	BIOL 493.....	1
BIOL ELECTIVE.....	3	BIOL 499.....	2
ENGL 203, 204, 205, (OR) 206	3	MINOR.....	3-4
MINOR.....	4	ELECTIVES	3
Total Hours - Fall Semester	15	Total Hours - Spring Semester	13-14

BACHELOR OF ARTS CHEMISTRY

GSC 100 The First Year Experience **1 hour**

All degree seeking students are required to take GSC 100 during their first semester. GSC 100 may be used to satisfy one hour of the General Electives requirement.

General Education Requirements **39 hours**

Students must take CHEM 101, CHEM 102, and MATH 115 or MATH 115L, or MATH 120, or MATH 202, or MATH 207 as part of the General Education requirements.

Chemistry Major Requirement **34 hours**

BIOL	120	Principles of Biology I	4
CHEM	101	General Chemistry I	
CHEM	102	General Chemistry II	
CHEM	293	Techniques of Chemistry	1
CHEM	301	Organic Chemistry I	4
CHEM	302	Organic Chemistry II	4
CHEM	307	Inorganic Chemistry (OR)	
CHEM	380	Biochemistry I	4
CHEM	321	Analytical Chemistry I	4
CHEM	493	Senior Research Seminar	2
MATH	256	Probability and Statistics I	3
PHYS	201	General Physics I	4
PHYS	202	General Physics II	4

Chemistry Electives (select from the following) **7 hours**

CHEM	307	Inorganic Chemistry	4
CHEM	322	Analytical Chemistry II	4
CHEM	341	Nuclear Chemistry	3
CHEM	345	Introductory Physical Chemistry	4
CHEM	380	Biochemistry I*	4
CHEM	381	Biochemistry II	4

General Electives* **19-25 hours**

Recommended courses for graduate school in chemistry:

CHEM	322	Analytical Chemistry II	4
CHEM	345	Introductory Physical Chemistry*	4
MATH	120	Precalculus	4
MATH	202	Calculus I	4
MATH	207	Calculus II	4
PHYS	350	Modern Physics	3

Minor **15-21 hours**

Total minimum hours required for degree **120-121 hours**

GATEWAY ASSESSMENT - CHEM 293 - CAPSTONE ASSESSMENT - CHEM 493

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**If biochemistry or introductory physical chemistry is taken as one of the chemistry electives then additional hours in science or math courses are required as prerequisites. Biochemistry (CHEM 380) requires 4 hours biology (BIOL 120); introductory physical chemistry (CHEM 345) requires 8 additional hours of math (MATH 120 & 202).*

Students enrolled in chemistry courses are responsible for all lost or broken glassware and equipment. At the beginning of the semester, the student will verify that all laboratory items assigned to him/her are present and in good condition. At the end of the semester, the student must return all items in the same condition. If any items were lost or broken throughout the semester, the student will receive a financial statement either during the last week of classes or during the final examination period. This financial obligation must be paid to the Cashier's Office before the student can graduate. Students who fail to check out of the laboratory will be charged an additional fee.

**BA - CHEMISTRY
SUGGESTED PLAN OF STUDY**

FIRST YEAR

CHEM 101	4	ART 200, CART 200, FNAR 100	
ENGL 101	3	(OR) MUSC 200	3
GSC 100	1	CART 101.....	3
HIST 201, 202, 207, 208 (OR) POSC 203 ..	3	CHEM 102.....	4
MATH 115, 115L, 120, 202 (OR) 207.....	3-4	CSCI 101	3
PED 201	1	MATH 256	3
Total Hours - Fall Semester	15-16	Total Hours - Spring Semester	16

SECOND YEAR

BIOL 120.....	4	CHEM 302.....	4
CHEM 293	1	ECON 201, 202, GEOG 203, PSYC 201,	
CHEM 301	4	SOCL 205 (OR) SOCS 225	3
ENGL 102	3	ENGL 203, 204, 205 (OR) 206	3
PHYS 201.....	4	PHYS 202.....	4
Total Hours - Fall Semester	16	Total Hours - Spring Semester	14

THIRD YEAR

CHEM 307 (OR) CHEM 380.....	4	CHEMISTRY ELECTIVES	4
HIST 201, 202, 207, 208 (OR) POSC 203 ..	3	MINOR/GENERAL ELECTIVES	11
GENERAL ELECTIVES	8	Total Hours - Spring Semester	15
Total Hours - Fall Semester	15		

FOURTH YEAR

CHEM 321	4	CHEMISTRY ELECTIVE	3
CHEM 493	2	MINOR/ELECTIVES	13
GENERAL ELECTIVES	8	Total Hours - Spring Semester	16
Total Hours - Fall Semester	14		

**BACHELOR OF ARTS IN EDUCATION
BIOLOGY (9-ADULT)**

Candidates may wish to combine this specialization with another (5-9), (9-Adult), (5-Adult) or (PreK-Adult) specialization.

GSC 100 The First Year Experience 1 hour

All degree seeking students are required to take GSC 100 during their first semester. GSC 100 may be used to satisfy one hour of the General Electives requirement.

General Education Requirements 39 hours

Candidates must take BIOL 120, CHEM 101, CSCI 267 and MATH 115 as part of the General Education requirements.

Content Specialization Courses 46 hours

Total Hours in Biology 30 hours

BIOL 120	Principles of Biology I	
BIOL 121	Principles of Biology II	4
BIOL 210	Zoology	4
BIOL 293	Techniques of Science	2
BIOL 305	General Botany	4
BIOL 335	Cell Physiology	4
BIOL 400	Ecology and Field Biology	4
BIOL 456	Genetics	4
BIOL 493	Senior Seminar	1
BIOL	Elective (300 or higher)	3

Total Hours in Chemistry 4 hours

CHEM 101	General Chemistry I	
CHEM 102	General Chemistry II	4

Total Hours in Mathematics 4 hours

MATH 115	College Algebra	
MATH 120	Precalculus	4

Total Hours in Physics 8 hours

PHYS 201	General Physics I	4
PHYS 209	General Geology	4

Professional Education **21 hours**

Must complete a Methods course for each specialization in which candidate seeks to gain licensure.

CSCI 267	Computer Skills for Education	
EDUC 203	Foundations of Education	2
EDUC 205	Educational Psychology*	3
EDUC 310	Classroom Management and Teaching Strategies	2
EDUC 345	Teaching Science in Middle and Adolescent Education (5-Adult)	3
EDUC 412	Curriculum and Assessment: Content (5-Adult)	2
READ 317	Teaching Reading in Middle and Adolescent Education	3
SPED 220	Educating the Student with Exceptional and Cultural Diversities	3
SPED 334	Strategies for Students with Learning Disabilities and Behavior Disorders	3

Student Internship **12 hours**

EDUC 493	Capstone Assessment	1
EDUC	Student Internship	11

General Electives **2 hours**

Total minimum hours required for degree **120-121 hours**

Education 203 and Education 205 are the only Professional Education courses which can be attempted without being admitted to a Program in Teacher Education.

*Before enrolling in Education 205, a student must have attempted PRAXIS I or be exempt from this requirement due to ACT or SAT score.

GATEWAY ASSESSMENT - ADMISSION TO TEACHER EDUCATION

CAPSTONE ASSESSMENT - EDUCATION 493

**BIOLOGY (9-ADULT)
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 120 (OR) BIOL 121	4	BIOL 121 (OR) BIOL 120	4
CSCI 267	3	EDUC 205	3
EDUC 203	2	ENGL 102	3
ENGL 101	3	MATH 120	4
GSC 100	1	PED 201	1
MATH 115	3	Total Hours - Spring Semester	15
Total Hours - Fall Semester	16		

**ATTEMPT PRAXIS I DURING THE FALL
SEMESTER OF FRESHMAN YEAR**

SECOND YEAR

BIOL 210 (OR) BIOLOGY ELECTIVE.....	3-4	ART 200, CART 200, FNAR 100 (OR) MUSC 200	3
BIOL 293.....	2	BIOL 305 (OR) BIOL 456	4
CART 101	3	BIOL 335 (OR) PHYS 209.....	4
CHEM 101	4	CHEM 102.....	4
HIST 201, 202, 207, 208 (OR) POSC 203	3	Total Hours - Spring Semester	15
Total Hours - Fall Semester	15-16		

THIRD YEAR

BIOL 210 (OR) PHYS 201	4	BIOL 456 (OR) BIOL 305	4
ECON 201, 202, GEOG 203, PSYC 201, SOCL 205 (OR) SOCS 225.....	3	BIOL 493.....	1
EDUC 310.....	2	EDUC 345	3
HIST 201, 202, 207, 208 (OR) POSC 203	3	ENGL 203, 204, 205 (OR) 206	3
SPED 220	3	PHYS 209 (OR) BIOL 335.....	4
ELECTIVE.....	2	Total Hours - Fall Semester	15
Total Hours - Fall Semester	17		

PASS PRAXIS II EXAM

FOURTH YEAR

BIOL 400.....	4	EDUC 493	1
EDUC 412	2	STUDENT INTERNSHIP*	11
PHYS 201 (OR) BIOL ELECTIVE	3-4	Total Hours - Spring Semester	12
READ 317	3		
SPED 334	3		
Total Hours - Fall Semester	15-16		

*Interns may not enroll in any other courses.

BACHELOR OF ARTS IN EDUCATION CHEMISTRY (9-ADULT)

Candidates may wish to combine this specialization with another (5-9), (9-Adult), (5-Adult) or (PreK-Adult) specialization.

GSC 100 The First Year Experience 1 hour

All degree seeking students are required to take GSC 100 during their first semester. GSC 100 may be used to satisfy one hour of the General Electives requirement.

General Education Requirements 39 hours

Candidates must take BIOL 120, CHEM 101, CSCI 267 and MATH 202 as part of the General Education requirements.

Content Specialization Courses 47 hours

Total Hours in Biology 8

BIOL 120	Principles of Biology I	
BIOL 121	Principles of Biology II	4
BIOL 400	Ecology and Field Biology	4

Total Hours in Chemistry 27

CHEM 101	General Chemistry I	
CHEM 102	General Chemistry II	4
CHEM 293	Techniques of Chemistry	1
CHEM 301	Organic Chemistry I	4
CHEM 302	Organic Chemistry II	4
CHEM 307	Inorganic Chemistry	4
CHEM 321	Analytical Chemistry I	4
CHEM 380	Biochemistry I	4
CHEM 493	Senior Research Seminar	2

Total Hours in Physics 12

PHYS 201	General Physics I	4
PHYS 202	General Physics II	4
PHYS 345	Introductory Chemical Physics	4

Professional Education 21 hours

Must complete a Methods course for each specialization in which candidate seeks to gain licensure.

CSCI 267	Computer Skills for Education	
EDUC 203	Foundations of Education	2
EDUC 205	Educational Psychology*	3
EDUC 310	Classroom Management and Teaching Strategies	2
EDUC 345	Teaching Science in Middle and Adolescent Education (5-Adult)	3

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EDUC 412	Curriculum and Assessment: Content (5-Adult)	2
READ 317	Teaching Reading in Middle and Adolescent Education	3
SPED 220	Educating the Student with Exceptional and Cultural Diversities	3
SPED 334	Strategies for Students with Learning Disabilities and Behavior Disorders	3

Student Internship **12 hours**

EDUC 493	Capstone Assessment	1
EDUC	Student Internship: Content	11

General Elective **1 hour**

Total minimum hours required for degree **120-121 hours**

Education 203 and Education 205 are the only Professional Education courses which can be attempted without being admitted to a Program in Teacher Education.

*Before enrolling in Education 205, a candidate must have attempted PRAXIS I or be exempt from this requirement due to ACT or SAT score.

Additional courses for Chemistry (9-adult) with Physics (9-adult) specialization **15 hours**

PHYS 201, 202, and 345 would be taken as part of the Chemistry (9-adult) Education program

PHYS 201	General Physics I	
PHYS 202	General Physics II	
PHYS 304	Problems in Physics	3
PHYS 310	General Astronomy	4
PHYS 341	Nuclear Physics	3
PHYS 345	Introduction to Chemical Physics	
PHYS 350	Modern Physics	3
PHYS 493	Senior Research Seminar	2

**Students admitted to Glenville State College not prepared to take MATH 202 (math ACT 26 or higher) will need to take additional math courses prior to taking MATH 202.

GATEWAY ASSESSMENT - ADMISSION TO TEACHER EDUCATION

CAPSTONE ASSESSMENT - EDUCATION 493

**CHEMISTRY (9-ADULT)
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 120.....	4	BIOL 121.....	4
CHEM 101	4	CART 101	3
CSCI 267	3	CHEM 102.....	4
EDUC 203	2	EDUC 205	2
ENGL 101	3	ENGL 102	3
GSC 100	1	PED 201	1
Total Hours - Fall Semester	17	Total Hours - Spring Semester	17

**ATTEMPT PRAXIS I DURING THE FALL
SEMESTER OF FRESHMAN YEAR**

SECOND YEAR

CHEM 293	1	ART 200, CART 200, FNAR 100 (OR)	
CHEM 301	4	MUSC 200.....	3
ENGL 203, 204, 205 (OR) 206	3	CHEM 302.....	4
MATH 202	4	HIST 201, 202, 207, 208 (OR) POSC 203	3
PHYS 201.....	4	PHYS 202.....	4
Total Hours - Fall Semester	16	Total Hours - Spring Semester	14

THIRD YEAR

BIOL 400.....	4	ECON 201, 202, GEOG 203,	
CHEM 380 (OR) CHEM 321	4	PSYC 201, SOCL 205 (OR) SOCS 225	3
CHEM 307 (OR) CHEM 345	4	EDUC 345	3
EDUC 310.....	2	HIST 201, 202, 207, 208 (OR) POSC 203	3
SPED 220	3	READ 317	3
Total Hours - Fall Semester	17	SPED 334	3
		Total Hours - Spring Semester	15

PASS PRAXIS II EXAM

FOURTH YEAR

CHEM 380 (OR) CHEM 321	4	EDUC 493	1
CHEM 307 (OR) CHEM 345 (OR) PHYS 345..	4	STUDENT INTERNSHIP*	11
CHEM 493	2	Total Hours - Spring Semester	12
EDUC 412.....	2		
Total Hours - Fall Semester	12		

*Interns may not enroll in any other courses.

**BACHELOR OF ARTS IN EDUCATION
GENERAL SCIENCE (5-ADULT)**

GSC 100 The First Year Experience **1 hour**

All degree seeking students are required to take GSC 100 during their first semester. GSC 100 may be used to satisfy one hour of the General Electives requirement.

General Education Requirements **39 hours**

Candidates must take BIOL 120, CSCI 267, and MATH 115 as part of the General Education requirements.

Content Specialization Courses **44 hours**

Total Hours in Biology **12**

BIOL 120	Principles of Biology I	
BIOL 121	Principles of Biology II	4
BIOL 361	Microbiology	4
BIOL 400	Ecology and Field Biology	4

Total Hours in Chemistry **12**

CHEM 101	General Chemistry I	4
CHEM 102	General Chemistry II	4
CHEM 301	Organic Chemistry I (OR)	
CHEM 321	Analytical Chemistry I	4

Total Hours in Physics **16**

PHYS 201	General Physics I	4
PHYS 202	General Physics II	4
PHYS 209	General Geology	4
PHYS 310	General Astronomy	4

Total Hours in Mathematics **4**

MATH 115	College Algebra	
MATH 120	Precalculus	4

Professional Education **21 hours**

Must complete a Methods course for each specialization in which candidate seeks to gain licensure.

CSCI 267	Computer Skills for Education	
EDUC 203	Foundations of Education	2
EDUC 205	Educational Psychology*	3
EDUC 310	Classroom Management and Teaching Strategies	2
EDUC 345	Teaching Science in Middle and Adolescent Education (5-Adult)	3
EDUC 412	Curriculum and Assessment: Content (5-Adult)	2
READ 317	Teaching Reading in Middle and Adolescent Education	3

SPED 220	Educating the Student with Exceptional and Cultural Diversities	3	
SPED 334	Strategies for Students with Learning Disabilities and Behavior Disorders	3	
Student Internship			12 hours
EDUC 493	Capstone Assessment	1	
EDUC	Student Internship	11	
General Elective			4 hours
Total minimum hours required for degree			120-121 hours

Education 203 and Education 205 are the only Professional Education courses which can be attempted without being admitted to a Program in Teacher Education.

*Before enrolling in Education 205, a student must have attempted or be exempt from this requirement due to ACT or SAT score.

GATEWAY ASSESSMENT - ADMISSION TO TEACHER EDUCATION

CAPSTONE ASSESSMENT - EDUCATION 493

**GENERAL SCIENCE (5-ADULT)
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 120 (OR) BIOL 121	3	BIOL 120 (OR) BIOL 121	4
EDUC 203	2	CSCI 267	3
ENGL 101	3	EDUC 205	3
GSC 100	1	MATH 120	4
HIST 201, 202, 207, 208 (OR) POSC 203	3	PED 201	1
MATH 115	3	Total Hours - Spring Semester	15
Total Hours - Fall Semester	16		

**ATTEMPT PRAXIS I DURING THE FALL
SEMESTER OF FRESHMAN YEAR**

SECOND YEAR

CHEM 101	4	CART 101	3
ECON 201, 202, GEOG 203, PSYC 201, SOCL 205 (OR) SOCS 225.....	3	CHEM 102.....	4
PHYS 201.....	4	ENGL 102	3
GENERAL EDUCATION SCIENCE.....	4	PHYS 202.....	4
Total Hours - Fall Semester	15	PHYS 209.....	4
		Total Hours - Spring Semester	18

THIRD YEAR

CHEM 301 (OR) CHEM 321	4	ART 200, CART 200, FNAR 100 (OR) MUSC 200.....	3
EDUC 310.....	2	EDUC 345	3
ENGL 203, 204, 205 (OR) 206	3	HIST 201, 202, 207, 208 (OR) POSC 203	3
PHYS 310.....	4	READ 317	3
ELECTIVE.....	4	SPED 220	3
Total Hours - Fall Semester	17	Total Hours - Spring Semester	15

PASS PRAXIS II EXAM

FOURTH YEAR

BIOL 361.....	4	EDUC 493	1
BIOL 400.....	4	STUDENT INTERNSHIP*	11
EDUC 412.....	2	Total Hours - Spring Semester	12
SPED 334	3		
Total Hours - Fall Semester	13		

*Interns may not enroll in any other courses.

**BACHELOR OF ARTS IN EDUCATION
MATHEMATICS (5-ADULT)**

Candidates may wish to combine this specialization with another (5-9), (9-Adult), (5-Adult) or (PreK-Adult) specialization.

GSC 100 The First Year Experience 1 hour

All degree seeking students are required to take GSC 100 during their first semester. GSC 100 may be used to satisfy one hour of the General Electives requirement.

General Education Requirements 39 hours

Candidates must take MATH 110 as part of the general education requirements.

Content Specialization Courses 42 hours

MATH 110	The Nature of Math	
MATH 120*	Precalculus	4
MATH 201	Introduction to Mathematical Reasoning and Proofs	3
MATH 202	Calculus I	4
MATH 207	Calculus II	4
MATH 230	Euclidean Geometry for College Students	3
MATH 256	Probability and Statistics I	3
MATH 303	Modern Algebra	3
MATH 308	Calculus III	4
MATH 310	College Geometry	3
MATH 315	Linear Algebra	3
MATH 321	History of Mathematics	2
MATH 330	Discrete Mathematics	3
MATH 356	Probability and Statistics II	3

*MATH 115 may be required as a prerequisite for MATH 120 and MATH 201 if candidates do not have a Math ACT of 24.

Professional Education 24 hours

Must complete a Methods course for each specialization in which candidate seeks to gain licensure.

CSCI 267	Computer Skills for Education	3
EDUC 203	Foundations of Education	2
EDUC 205	Educational Psychology*	3
EDUC 310	Classroom Management and Teaching Strategies	2
EDUC 343	Teaching Mathematics in Middle and Adolescent Education (5-Adult)	3
EDUC 412	Curriculum and Assessment: Content (5-Adult)	2
READ 317	Teaching Reading in Middle and Adolescent Education	3
SPED 220	Educating the Student with Exceptional and Cultural Diversities	3
SPED 334	Strategies for Students with Learning Disabilities and Behavior Disorders	3

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Student Internship			12 hours
EDUC 493	Capstone Assessment	1	
EDUC	Student Internship	11	
General Electives			3 hours
Total minimum hours required for degree			120-121 hours

Education 203 and Education 205 are the only Professional Education courses which can be attempted without being admitted to a Program in Teacher Education.

*Before enrolling in Education 205, a student must have attempted PRAXIS I or be exempt from this requirement due to ACT or SAT score.

GATEWAY ASSESSMENT - ADMISSION TO TEACHER EDUCATION

CAPSTONE ASSESSMENT - EDUCATION 493

**MATHEMATICS (5-ADULT)
SUGGESTED PLAN OF STUDY**

This plan of study is intended for students with an ACT Math score 24 or above or SAT Math score 590 or above. Other students should consult their advisor for a revised plan of study.

FIRST YEAR

ART 200, CART 200, FNAR 100 (OR) MUSC 200	3	CART 101	3
EDUC 203	2	CSCI 101	3
ENGL 101	3	EDUC 205	3
GSC 100	1	MATH 120	4
HIST 201	3	MATH 201	3
MATH 110	3	Total Hours - Spring Semester	16
PED 201	1		
Total Hours - Fall Semester	16		

**ATTEMPT PRAXIS I DURING THE FALL
SEMESTER OF FRESHMAN YEAR**

SECOND YEAR

CSCI 267	3	MATH 207	4
ECON 201	3	MATH 230 (OR) MATH 256.....	3
ENGL 102	3	MATH 303 (OR) MATH 330.....	3
MATH 202	4	GENERAL EDUCATION SCIENCE.....	4
PHYS 201	4	Total Hours - Spring Semester	14
Total Hours - Fall Semester	17		

THIRD YEAR

EDUC 310	2	HIST 201, 202, 207, 208 (OR) POSC 203	3
ENGL 203, 204, 205 (OR) 206	3	MATH 230 (OR) MATH 256.....	3
MATH 308	4	MATH 303 (OR) MATH 330.....	3
MATH 310 (OR) MATH 356	3	SPED 220	3
MATH 315 (OR) MATH 321	2-3	ELECTIVES	3
Total Hours - Fall Semester	14-15	Total Hours - Spring Semester	15

PASS PRAXIS II EXAM

FOURTH YEAR

EDUC 343	3	EDUC 493	1
EDUC 412	2	STUDENT INTERNSHIP*	11
MATH 310 (OR) MATH 356	3	Total Hours - Spring Semester	12
MATH 315 (OR) MATH 321	2-3		
READ 317	3		
SPED 334	3		
Total Hours - Fall Semester	16-17		

***Interns may not enroll in any other courses.**

**BACHELOR OF ARTS IN EDUCATION
MIDDLE SCHOOL SPECIALIZATIONS**

These programs can be combined with (PreK-Adult), (5-Adult), or (9-Adult) specializations.

GENERAL SCIENCE (5-9) 24 hours

Candidates must take BIOL 121 and CHEM 101 as part of the General Education requirements.

BIOL 120	Principles of Biology I	4
BIOL 121	Principles of Biology II	
CHEM 101	General Chemistry I	
CHEM 102	General Chemistry II	4
PHYS 201	General Physics I	4
PHYS 202	General Physics II	4
PHYS 209	General Geology	4
PHYS 310	General Astronomy	4
EDUC 345	Teaching Science in Middle and Adolescent Education	

GENERAL MATH–ALGEBRA I (5-9) 20 hours

Candidates must take MATH 115 as part of the General Education requirements.

MATH 110	The Nature of Math	3
MATH 115	College Algebra	
MATH 120	Precalculus	4
MATH 201	Introduction to Mathematical Reasoning and Proofs	3
MATH 202	Calculus I	4
MATH 230	Euclidean Geometry for College Students	3
MATH 256	Probability and Statistics I	3
EDUC 343	Teaching Mathematics in Middle and Adolescent Education	

GATEWAY ASSESSMENT – ADMISSION TO TEACHER EDUCATION

CAPSTONE ASSESSMENT – EDUCATION 493