

# COLLEGE OF ARTS & SCIENCES

UNIVERSITY OF SOUTH FLORIDA 2017-2018 UNDERGRADUATE CATALOG

## **Accelerated B.S. in Biomedical Sciences and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.S. in Biomedical Sciences (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Biomedical Sciences major.

This accelerated program shares 12 credit hours between already existing degrees:

- B.S. in Biomedical Sciences
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.S. in Biomedical Sciences to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Biomedical Sciences that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified science teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the B.S. in Biomedical Sciences major upon applying and thirty (30) semester hours in science (includes twenty-one (21) credit hours in a science concentration (e.g. chemistry, biology, physics) plus 9 credit hours in minor science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education Program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks:**

1. To be considered for acceptance into the Accelerated B.S. Biomedical Sciences/M.A.T. Science Education program, students must have completed a minimum of 15 credit hours in the Biomedical Science undergraduate major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. You can find information on the General Knowledge Test on the Florida Teacher Certification section of the following webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.S. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of USF's Graduate School, the College of Education's Graduate Program, and the Department of Chemistry's Undergraduate Program.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  - Undergraduate transcripts; and evidence of possessing a degree in a science discipline (biology, chemistry, physics, geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty.
  - A minimum of 21 hours in a major science content area of concentration (e.g., chemistry, biology, physics) plus 9 hours in minor science content area are required to teach secondary school.
    - Note, to teach secondary science in a specialty area (e.g. chemistry, biology, physics) the State of Florida requires: A bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in that specialty area with associated laboratory experiences.
  - Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.

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## **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of upper-level coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education
- SCE 6456 Teaching Secondary School Physical and Earth Science
- SCE 6938 Topics in Science Education: Field Practicum

## **Undergraduate Degree Requirements for the B.S. in Biomedical Sciences (61-62 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Major Core (Tier 1) (40 credit hours)**

#### **Required Biology Courses (8 credit hours):**

- BSC 2010 Cellular Processes
- BSC 2010L Cellular Processes Laboratory
- BSC 2011 Biodiversity
- BSC 2011L Biodiversity Laboratory

#### **Required Chemistry Courses (18 credit hours):**

- CHM 2045 General Chemistry I
- CHM 2045L General Chemistry I Laboratory
- CHM 2046 General Chemistry II
- CHM 2046L General Chemistry II Laboratory
- CHM 2210 Organic Chemistry I
- CHM 2210L Organic Chemistry I Laboratory
- CHM 2211 Organic Chemistry II
- CHM 2211L Organic Chemistry II Laboratory

#### **Required Mathematics Courses (6 credit hours):\***

- MAC 2241 Life Sciences Calculus I
- MAC 2311 and MAC 2281 are also acceptable for the major.
- MAC 2242 Life Sciences Calculus II or STA 2023 Introductory Statistics
- MAC 2312 and MAC 2282 are also acceptable for the major.

#### **Required Physics Courses (8 credit hours):\***

- PHY 2053 General Physics I
- PHY 2053L General Physics I Laboratory
- PHY 2054 General Physics II
- PHY 2054L General Physics II Laboratory
- PHY 2048, PHY 2048L General Physics I and Lab and PHY 2049, PHY 2049L General Physics II and Lab are also acceptable for the major
- Students may substitute Human Anatomy or Physiology I and II (BSC 2093C & BSC 2094C or BSC 2085, BSC 2085L & BSC 2086, BSC 2086L) for Physics I & II.

### **Major Electives (Tier 2) (21-22 credit hours)**

#### **Required Biomedical Courses (7-8 credit hours):**

- BCH 3053 General Biochemistry
- MCB 3020 and MCB 3020L General Microbiology and Laboratory
- or choose one lecture: PCB 3063 or PCB 3023 and one lab: PCB 3063L or PCB 3023L or BCH 3023L

#### **Minimum of 14 additional Biomedical credits to include:**

- Upper-level Biology course (choose one)
- Upper-level Chemistry course (choose one)
- Upper-level Chemistry or Biology course (choose one)
- Upper-level Chemistry or Biology laboratory course (choose one)
- Additional Biomedical elective (choose one)

#### **Biology Courses:**

- BOT 3850 Medical Botany
- MCB 4115 Determinative Bacteriology
- MCB 4115L Determinative Bacteriology Lab
- MCB 4404 Microbial Physiology and Genetics
- MCB 4404L Microbial Physiology and Genetics Laboratory
- MCB 4503 Virology
- MCB 3410 Cell Metabolism
- PCB 3023 Cell Biology
- PCB 3023L Cell Biology Laboratory
- PCB 3063 General Genetics

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PCB 3063L Genetics Laboratory  
PCB 3712 General Physiology  
PCB 3713L General Physiology Laboratory  
PCB 4234 Principles of Immunology\*\*  
PCB 4522C Experimental Genetics and Cell Biology  
PCB 4723 Animal Physiology  
PCB 4723L Animal Physiology Laboratory  
PCB 4744 Biomedical Physiology  
PCB 4843 Principles of Neuroscience  
ZOO 3713C Comparative Vertebrate Anatomy  
ZOO 4753 Human Histology & Molecular Pathology of Disease  
ZOO 4753L Human Histology & Molecular Pathology of Disease Lab

## **Chemistry Courses:**

BCH 3023L Basic Biochemistry Laboratory\*  
BCH 4033 Advanced Biochemistry I  
BCH 4034 Advanced Biochemistry II  
CHM 3120C Elementary Analytical Chemistry  
CHM 3610 Intermediate Inorganic Chemistry  
CHM 3610L Intermediate Inorganic Chemistry Laboratory  
CHM 3941 Peer Leading in Chemistry  
CHM 4410 Physical Chemistry I  
CHM 4410L Physical Chemistry Laboratory  
CHM 4411 Physical Chemistry II  
CHM 4413 Biophysical Chemistry  
CHM 4300 Biomolecules I  
CHM 4230 Spectroscopic Analysis of Organic Compounds  
CHM 4274 Introduction to Drug Discovery  
CHM 4292 Introduction to Medicinal Chemistry  
CHM 4307 BioOrganic Chemistry  
CHM 4455 Chemistry of High Polymers  
CHM 4932 Selected Topics in Chemistry\*\*  
CHS 4300 Fundamentals of Clinical Chemistry  
CHS 4301L Clinical Laboratory

\*BCH 3023L Satisfies Lab or Additional Biomedical Elective Only

\*\*Contact Advisor for approval of CHM 4932 Courses

## **Other Courses:**

CHM 4060 Use of Chemical Literature  
HSC 4504 Foundations of Public Health Immunology\*\*  
PHZ 4702 Applications of Physics to Biology & Medicine I  
PHZ 4703 Applications of Physics to Biology & Medicine II  
\*\*Students may not use both HSC 4504 and PCB 4234 to meet Tier 2 required Biomedical Electives requirements.

## **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of upper-level coursework:

SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

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## **Core Courses (39 credit hours)**

EDF 6432 Foundations of Measurement  
ESE 5342 Teaching the Adolescent Learner  
ESE 5344 Classroom Management for a Diverse School and Society  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 5564 Reading and Communication in Science Education  
SCE 6416 Teaching Secondary School Biology  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6634 Current Trends in Secondary Science Education  
SCE 6938 Topics in Science Education: Field Practicum  
SCE 6947 Internship (PR: CI and passing scores of FTCE exam)  
TSL 5325 ESOL Strategies for Content Area Teachers

### **Comprehensive Exam**

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).

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## **Accelerated B.S. in Cell and Molecular Biology and M.S. in Biology with a concentration in Cell and Molecular Biology (Non-Thesis)**

### **Description**

This program allows Cell and Molecular Biology majors to take graduate courses for the elective part of the major and apply them to a non-thesis M.S. degree in Biology with a concentration in Cell and Molecular Biology. Successful students will be able to earn the M.S. degree in two additional semesters beyond the completion of the B.S. degree.

This accelerated program shares 12 credit hours between already existing degrees/concentrations:

B.S. in Cell and Molecular Biology

M.S. in Biology with a concentration in Cell and Molecular Biology (Non-Thesis)

### **Target Students and Expected Outcomes**

This program will appeal to the more competitive Cell and Molecular Biology majors who would benefit professionally from having the M.S. when they enter the job market, but do not want to commit to the longer time a thesis M.S. or a Ph.D. program takes to complete. Professions that do not require bench laboratory experience, but desire the broadened knowledge base are targeted. Graduates from this program would be ideally suited for health professions, technology-based industry, education, and government. We also expect that some students will be interested in doctoral education in the biological or biomedical areas.

### **Admission Requirements**

Cell and Molecular Biology majors who have completed the following courses may apply to this program:

PCB 3023 Cell Biology

PCB 3063 General Genetics

MCB 3410 Cell Metabolism

PCB 4024 Molecular Biology of the Cell or PCB 4026 Molecular Biology of the Gene

Students who have been admitted to the program but subsequently fail to achieve a 3.0 GPA in the last 60 hours of their undergraduate major, or who do not complete at least 30 of their last 60 hours at USF, will be dismissed from the program.

Once accepted, students must meet with BioAdvise (the advising office for biological sciences within the College of Arts and Sciences) to prepare an action plan to complete the B.S./M.S. accelerated program. This requires them to take all the courses required for the B.S. in Cell and Molecular Biology. Students may take up to 12 credits of graduate courses as electives in Cell Biology, Microbiology and Molecular Biology and apply those courses to both the B.S. and M.S. degrees. They will not be admitted as graduate students until they have completed their B.S. degree and met all the requirements for admission to Cell Biology, Microbiology and Molecular Biology as graduate students.

The action plan should include a schedule of coursework to complete their undergraduate major and a date in their last year in the undergraduate major to take the GRE.

Application materials are the same as the M.S. in Biology:

1. Two official transcripts of undergraduate work from other institutions. Applicants need not supply USF transcripts.
2. Three letters of recommendation
3. A brief essay stating your professional goals
4. GRE scores must be sent to USF directly from the testing agency (USF institution code is 5828)

### **Timeline and Benchmarks:**

1. Completion of prerequisite upper division courses and application to the accelerated program. Typically, students will be in their junior year.
2. Acceptance into the program and an action plan within a semester of application.
3. Students will take up to 12 credits of graduate credit in Cell Biology, Microbiology and Molecular Biology courses following acceptance into the program. Typically, these courses will be taken in the latter half of the junior year and in the senior year. BioAdvise will monitor the progress of the students and ensure they follow their action plan. Students who do not complete at least 9 hours of graduate work by graduation will be dropped from the accelerated M.S. program.
4. GRE exams will be taken in a timely manner so scores will be available for admission to the M.S. portion of the program. Students who do not complete the GRE in time will not be admitted to the accelerated M.S. program.
5. Students admitted to the accelerated program must form a committee prior to the beginning of their first semester in the M.S. portion of the program and must continue to follow the action plan which will be monitored by BioAdvise.

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6. Students admitted to the accelerated M.S. program must complete the requirements within three semesters or will be dismissed from the program.

### **Undergraduate Degree Requirements for the B.S. in Cell and Molecular Biology (40 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

#### **Required Supporting Courses for the Major (32-34 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester.

- CHM 2045 General Chemistry I
- CHM 2045L General Chemistry I Laboratory
- CHM 2046 General Chemistry II
- CHM 2046L General Chemistry II Laboratory
- CHM 2210 Organic Chemistry I
- CHM 2210L Organic Chemistry I Laboratory
- CHM 2211 Organic Chemistry II
- CHM 2211L Organic Chemistry II Laboratory
- MAC 2241 Life Sciences Calculus I and MAC 2242 Life Sciences Calculus II  
or MAC 2281 Engineering Calculus I and MAC 2282 Engineering Calculus II  
or MAC 2311 Calculus I and MAC 2312 Calculus II
- STA 2023 Introductory Statistics I may be substituted for any Calculus II
- PHY 2048/2048L General Physics I and PHY 2049/2049L General Physics II  
or PHY 2053/2053L General Physics I and PHY 2054/2054L General Physics II

#### **Major Core (25 credit hours)**

- BSC 2010 Cellular Processes
- BSC 2010L Cellular Processes Laboratory
- BSC 2011 Biodiversity
- BSC 2011L Biodiversity Laboratory
- MCB 3410 Cell Metabolism
- PCB 3063 General Genetics
- PCB 3023 Cell Biology
- PCB 3023L Cell Biology Laboratory and PCB 3063L General Genetics Laboratory or PCB 3186L Laboratory in Molecular Biology
- Choose two of the following courses:
  - PCB 4024 Molecular Biology of Cell
  - PCB 4026 Molecular Biology of Gene
  - PCB 4109 Cancer Biology

#### **Major Electives (15 credit hours)**

Students choose a minimum of 15 credit hours from the following list of courses:

- BCH 3053 General Biochemistry
- BOT 4434C Mycology
- BSC 4434 Bioinformatics
- BSC 4905 Independent Study (1 credit maximum)
- BSC 4910 Undergraduate Research (1 or 2 credit hours/semester, no more than 4 credits total)
- BSC 4933 Selected Topics in Biology\*
- BSC 5425 Genetic Engineering and Recombinant DNA Technology
- BSC 5931 Selected Topics in Biology (for the accelerated program only)
- MCB 3020 General Microbiology
- MCB 3020L General Microbiology Lab
- MCB 4503 Virology
- PCB 3043 Principles of Ecology
- PCB 3043L Principles of Ecology Laboratory
- PCB 3712 General Physiology
- PCB 3713L General Physiology Lab
- PCB 4024 Molecular Biology of Cell (if not used as a core course)
- PCB 4026 Molecular Biology of Gene (if not used as a core course)
- PCB 4109 Cancer Biology (if not used as a core course)

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PCB 4234 Principles of Immunology  
PCB 4522C Experimental Genetics and Cell Biology  
PCB 4663 Human Genetics  
PCB 4671 Molecular Evolution  
PCB 4744 Biomedical Physiology  
PCB 4843 Principles of Neuroscience  
ZOO 4753 Human Histology and Molecular Pathology of Disease  
ZOO 4694 Developmental Biology

\*Selected topics approved for the major by the Department of Cell Biology, Microbiology and Molecular Biology

### **Graduate Degree Requirements for the M.S. in Biology with a concentration in Cell and Molecular Biology (30 credit hours)**

Three (3) credit hours of graduate structured elective coursework (5000-level)

Nine (9) credit hours of graduate elective coursework (5000- or 6000-level)

Eighteen (18) credit hours of graduate coursework, of which nine (9) credit hours must be from the following list:

BSC 5425 Genetic Engineering  
BSC 6932 Bioinformatics  
BSC 6932 Prokaryotic Molecular Genetics  
BSC 6932 Virology  
PCB 6236 Advanced Immunology  
PCB 6525 Molecular Genetics

Students admitted into the M.S. portion of the program must complete all the requirements for the M.S. degree (non-thesis) within three semesters of admission. The requirement is 30 credit hours of graduate work with at least 16 of these credit hours completed at the 6000-level; 26 credit hours must be formally structured courses; and at least 15 credit hours must be in Cell Biology, Microbiology and Molecular Biology courses. Students will be required to take three (3) core courses from the list below as part of these 26 credit hours. Of the required 26 credit hours, nine (9) credit hours will be derived from the core-Cell Biology, Microbiology and Molecular Biology graduate courses listed below (see associated curriculum). These requirements can be partially met by up to 12 credit hours of graduate courses taken as undergraduates. Any graduate class taken outside of Cell Biology, Microbiology and Molecular Biology must be approved by the Cell Biology, Microbiology and Molecular Biology Graduate Director. Students should be aware that a B grade or better is required for every graduate class applied to the MS portion of their degree. In addition, students will be required to pass an oral qualifying exam based on a review paper submitted in their final semester. Students must form a committee as part of their action plan to complete their graduate work. This committee will be comprised of at least three Cell Biology, Microbiology and Molecular Biology faculty, and will serve as the examination committee for the review paper required as part of the MS portion of their degree. Upon approval of that paper, students must successfully complete a comprehensive oral exam by their committee.

### **Comprehensive Oral Qualifying Examination**

A final comprehensive oral examination is required for all master's students. This examination is open to all departmental faculty. Students must take their comprehensive exam within two years of matriculation and the exam is normally taken after the completion of all formal course work. Thesis students must take the examination at least one semester before the thesis is presented. Any graduate work counted toward the requirement for the M.S. degree must be completed within five (5) years after matriculation.

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## **Accelerated B.A. in Chemistry and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.A. in Chemistry (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Chemistry (B.A.) major.

This accelerated program shares 12 credit hours between already existing degrees:

- B.A. in Chemistry
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.A. in Chemistry to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Chemistry that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified chemistry teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the Chemistry major upon applying and thirty (30) semester hours in science (includes twenty-one (21) semester hours in chemistry plus 9 hours in minor science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education Program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks:**

1. To be considered for acceptance into the Accelerated B.A. Chemistry/M.A.T. Science Education program, students must have completed a minimum of 15 credit hours in the Chemistry undergraduate major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. You can find information on the General Knowledge Test on the Florida Teacher Certification section of the following webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.A. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of USF's Graduate School, the College of Education's Graduate Program, and the Department of Chemistry's Undergraduate Program.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  - Undergraduate transcripts; and evidence of possessing a degree in a science discipline (biology, chemistry, physics, geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty.
  - A minimum of 21 hours in major science content area of concentration (plus 9 hours in minor science content area) are required to teach secondary school. Note, to teach secondary chemistry the state of Florida requires: A bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in chemistry with associated laboratory experiences.
  - Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of upper-level coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education



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SCE 6456 Teaching Secondary School Physical and Earth Science

SCE 6938 Topics in Science Education: Field Practicum

### **Undergraduate Degree Requirements for the B.A. in Chemistry (39 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

#### **Required Supporting Courses for the Major (24 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester.

MAC 2311 Calculus I and MAC 2312 Calculus II

\*MAC 2281 Engineering Calculus I and MAC 2282 Engineering Calculus II are also accepted for this major

PHY 2053 General Physics I and PHY 2053L General Physics I Laboratory and PHY 2054 General Physics II

and PHY 2054L General Physics II Laboratory or PHY 2048 General Physics I-Calculus Based and PHY

2048L General Physics I-Calculus Based Laboratory and PHY 2049 General Physics II-Calculus Based

and PHY 2049L General Physics II-Calculus Based Laboratory

Students must choose eight (8) hours of required natural science or engineering electives from the following suggested list of courses:

BSC 2010 Cellular Processes and BSC 2010L Cellular Processes Laboratory

BSC 2011 Biodiversity and BSC 2011L Biodiversity Laboratory

GLY 2010 Dynamic Earth: Introduction to Physical Geology and GLY 2000L Essentials of Geology Laboratory

GLY 2100 History of Life and GLY 2100L History of Life Laboratory

EVR 2001 Introduction to Environmental Science and EVR 2001L Environmental Science Laboratory

CGS 2060 Introduction to Computers and Computer Programming

STA 2023 Introductory Statistics I

#### **Major Core (33 credit hours)**

CHM 2045 General Chemistry I

CHM 2045L General Chemistry I Lab

CHM 2046 General Chemistry II

CHM 2046L General Chemistry II Lab

CHM 2210 Organic Chemistry I

CHM 2210L Organic Chemistry I Lab

CHM 2211 Organic Chemistry II

CHM 2211L Organic Chemistry II Lab

CHM 3120C Elementary Analytical Chemistry I

CHM 3610 Intermediate Inorganic Chemistry I

CHM 3610L Intermediate Inorganic Chemistry I Lab

CHM 4410 Physical Chemistry I

CHM 4413 Biophysical Chemistry

#### **Major Electives (6 credit hours)**

Students must choose six (6) credit hours of coursework at 3000-level or above; may not include more than 1 hour of CHM 4970.

BCH 3023L Basic Biochemistry Laboratory

BCH 4033 Advanced Biochemistry I

BCH 4034 Advanced Biochemistry II

CHM 4060 Use of Chemical Literature

CHM 4070 Historical Perspectives in Chemistry

CHM 4130C Methods of Instrument Analysis

CHM 4131C Methods of Chemical Investigation II

CHM 4300 Biomolecules

CHM 4410L Physical Chemistry Laboratory

CHM 4411 Physical Chemistry II

CHM 4611 Advanced Inorganic Chemistry

CHM 4970 Undergraduate Research

CHM 4932 Selected Topics in Chemistry\*

CHS 4300 Fundamentals of Clinical Chemistry

CHS 4301L Clinical Laboratory

\*Contact Advisor for approval of CHM 4932 Courses

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## **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of upper-level coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education
- SCE 6456 Teaching Secondary School Physical and Earth Science
- SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

## **Core Courses (39 credit hours)**

- EDF 6432 Foundations of Measurement
- ESE 5342 Teaching the Adolescent Learner
- ESE 5344 Classroom Management for a Diverse School and Society
- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education
- SCE 5564 Reading and Communication in Science Education
- SCE 6416 Teaching Secondary School Biology
- SCE 6456 Teaching Secondary School Physical and Earth Science
- SCE 6634 Current Trends in Secondary Science Education
- SCE 6938 Topics in Science Education: Field Practicum
- SCE 6947 Internship (PR: CI and passing scores of FTCE exam)
- TSL 5325 ESOL Strategies for Content Area Teachers

### **Comprehensive Exam**

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).

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## **Accelerated B.S. in Chemistry and M.S.B.E. in Biomedical Engineering**

### **Description**

This program intends for students to complete a B.S. in Chemistry and M.S.B.E. in Biomedical Engineering over the span of five years. Completion of this program allows students to complete nine (9) credit hours toward the M.S.B.E. during their junior or senior year in the Chemistry (B.S.) major.

This accelerated program shares 9 credit hours between already existing degrees:

- B.S. in Chemistry
- M.S.B.E. in Biomedical Engineering

### **Target Students and Expected Outcomes**

The accelerated program is an attractive and viable path for students seeking to expedite their entry to the workforce as an engineer, obtain a leadership position, or to pursue M.D. or Ph.D. studies. Students who complete this program will maximize department and professional resources, obtaining an industry position in the rapidly growing field of biomedical engineering, and opportunities for research and technology transfer for medical devices, systems or drug development.

### **Admission Requirements**

For consideration of admission to the program, a student must:

1. Have completed 15 credit hours in the B.S. Chemistry major, upon applying;
2. Have a minimum 3.33 GPA overall;
3. Have a minimum undergraduate 3.5 GPA in the major;
4. Have met with the Undergraduate Advisor and Graduate Director and/or Graduate Advisor to discuss a plan of study

### **Shared Courses (9 credit hours)**

Students choose three (3) of the following five (5) courses to be shared between the two degrees:

- BME 6000 Biomedical Engineering I
- BME 6931 Biomedical Engineering II
- GMS 6440 Basic Medical Physiology or BME 6410 Engineering Physiology
- GMS 6605 Basic Medical Anatomy
- PHC 6051 Biostatistics II

### **Undergraduate Degree Requirements for the B.S. in Chemistry (54 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Required Supporting Courses for the Major (22 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester.

- MAC 2311 Calculus I **and** MAC 2312 Calculus II **or** MAC 2281 Engineering Calculus I **and** MAC 2282 Engineering Calculus II
- PHY 2048 General Physics I-Calculus Based and PHY 2048L General Physics I-Calculus Based Laboratory **and** PHY 2049 General Physics II-Calculus Based and PHY 2049L General Physics II-Calculus Based Laboratory
- BSC 2010 Cellular Processes
- One 3000-level Natural Science or Engineering course (PHY 3101 suggested) **or**
- One 2000-level Natural Science course (BSC 2011, GLY 2010, GLY 2100, EVR 2001)

### **Major Core (54 credit hours)**

- CHM 2045 General Chemistry I
- CHM 2045L General Chemistry I Laboratory
- CHM 2046 General Chemistry II
- CHM 2046L General Chemistry II Laboratory
- CHM 2210 Organic Chemistry I
- CHM 2210L Organic Chemistry I Laboratory
- CHM 2211 Organic Chemistry II
- CHM 2211L Organic Chemistry II Laboratory
- BCH 4033 Advanced Biochemistry I
- CHM 3120C Elementary Analytical Chemistry

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CHM 3415C Physical Chemistry Methods  
CHM 3610 Intermediate Inorganic Chemistry  
CHM 3610L Intermediate Inorganic Chemistry Laboratory  
CHM 4060 Use of Chemical Literature  
CHM 4130C Methods of Instrument Analysis  
CHM 4131C Methods of Chemical Investigation II  
CHM 4410 Physical Chemistry I  
CHM 4410L Physical Chemistry Laboratory  
CHM 4411 Physical Chemistry II  
CHM 4611 Advanced Inorganic Chemistry

## Shared Courses (9 credit hours)

Students choose three (3) of the following five (5) courses to be shared between the two degrees:

BME 6000 Biomedical Engineering I  
BME 6931 Biomedical Engineering II  
GMS 6440 Basic Medical Physiology or BME 6410 Engineering Physiology  
GMS 6605 Basic Medical Anatomy  
PHC 6051 Biostatistics II

## Graduate Degree Requirements for the M.S.B.E. in Biomedical Engineering (30 credit hours)

**\*Please see Graduate Catalog for major-specific requirements**

Students must take the following five (5) courses in Engineering:

EGN 3433 Modeling and analysis of engineering systems

Students must complete 12 credit hours from the following courses:

ECH 3702 Instrument Systems I  
EGN 3311 Statics\*  
EGN 3321 Dynamics  
EGN 3331 Mechanics of Materials  
EGN 3343 Thermodynamics\*  
EGN 3365 Materials Engineering I  
EGN 3373 Electrical Systems I\*  
EML 3701 Fluid Systems

\*Indicates most highly recommended courses

## Major Core (15 credit hours)

BME 6000 Biomedical Engineering I  
BME 6931 Biomedical Engineering II  
GMS 6440 Basic Medical Physiology or BME 6410 Engineering Physiology  
GMS 6605 Basic Medical Anatomy  
PHC 6051 Biostatistics II

## Major Electives (15 credit hours)

Students select from additional approved courses to complete the 30 credit hour requirement. A minimum of 16 credit hours must be at the 6000-level. In addition, all of the elective courses must consist of engineering-prefix courses, although the Thesis Committee (thesis option) or the BME Program Advisor (non-thesis option) may approve courses in relevant areas such as chemistry, physics, pharmacy, communication sciences and disorders, public health, or medicine, in their place.

## Thesis Option

Thesis option students can count up to six (6) credit hours of thesis research towards the elective requirements.

## Comprehensive Exam

Students in the non-thesis track will complete a comprehensive exam. For students in the thesis track, the thesis and oral defense serve as the comprehensive exam.

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## **Accelerated B.A. in Economics and M.A. in Economics**

### **Description**

This program allows superior students with strong analytical skills and the ability to handle a fast paced, challenging program the opportunity to complete both the Bachelor's and Master's degrees in Economics in five years.

This accelerated program shares nine (9) credit hours between already existing degrees:

- B.A. in Economics
- M.A. in Economics (Non-Thesis)

### **Target Students and Expected Outcomes**

The program requires students to take two graduate-level courses required for the M.A. major during the last year in the undergraduate Economics major. These six (6) credit hours are counted as general electives (not major electives) in the undergraduate program and are also used to satisfy the requirements for the M.A. in Economics. After completing the 120-hour Bachelor's program, five-year students take 24 credit hours at the graduate-level.

### **Admission Requirements**

To be eligible for the program, a student must have:

- Completed at least 6 hours of 3000-level or above Economics courses at USF (not including statistics),
- Have an overall grade point average of 3.00 or above, and have a minimum of 3.25 cumulative grade point average in all economics courses (including statistics).

To apply for admission, send a letter to the Undergraduate Program Director in the Department of Economics stating your qualifications and desire to enter the program. To plan your program, or for additional information, see the Undergraduate Advisor in Economics.

### **Timeline and Benchmarks**

The B.A. in Economics will be conferred once the student has completed all requirements for the degree, including having completed the graduate coursework that comprises part of the Accelerated Degree Program. The M.A. in Economics will be conferred once the student has completed all remaining requirements for the M.A. degree. At the time that the BA degree is conferred, students in the Accelerated Degree Program will have completed at least two of the four required courses and at most one of the six elective courses needed for the M.A. degree. The remaining one or two required courses for the M.A. degree will be completed after the B.A. degree has been conferred.

### **Shared Courses (9 credit hours)**

Students take nine (9) credit hours of coursework that satisfies requirements for both degrees:

- ECO 6405 Mathematical Economics I (satisfies ECO 4401 Introduction to Mathematical Economics)
- ECO 6115 Microeconomics I (does not satisfy an undergraduate course requirement)

Choose one of the following courses:

- ECO 6206 Macroeconomics I (does not satisfy an undergraduate course requirement)
- ECO 6424 Econometrics I (satisfies ECO 4421 Introduction to Econometrics)
- ECO 6505 Public Finance (satisfies ECO 4504 Public Finance)
- ECP 6408 Economics of Organization (satisfies ECP 3403 Economics of Organization)
- ECP 6415 Issues in Regulation and Antitrust (satisfies ECP 3413 Economics of Regulation and Antitrust)
- ECP 6456 Law and Economics (satisfies ECP 4451 Law and Economics)
- ECP 6614 Urban Economics (satisfies ECP 3613 Urban Economics)

### **Undergraduate Degree Requirements for the B.A. in Economics (33 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Major Core (18 credit hours)**

- ECO 2013 Economic Principles: Macroeconomics
- ECO 2023 Economic Principles: Microeconomics
- ECO 3101 Intermediate Price Theory
- ECO 3203 Intermediate Macroeconomics
- ECO 2052 Analytical Tools for Economists
- STA 2023 Introductory Statistics I

### **Major Electives (15 credit hours)**

Fifteen (15) credit hours of Economics electives numbered 3000 or higher.

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## **Shared Courses (9 credit hours)**

Students take nine (9) credit hours of coursework that satisfies requirements for both degrees:

ECO 6405 Mathematical Economics I (satisfies ECO 4401 Introduction to Mathematical Economics)

ECO 6115 Microeconomics I (does not satisfy an undergraduate course requirement)

Choose one of the following courses:

ECO 6206 Macroeconomics I (does not satisfy an undergraduate course requirement)

ECO 6424 Econometrics I (satisfies ECO 4421 Introduction to Econometrics)

ECO 6505 Public Finance (satisfies ECO 4504 Public Finance)

ECP 6408 Economics of Organization (satisfies ECP 3403 Economics of Organization)

ECP 6415 Issues in Regulation and Antitrust (satisfies ECP 3413 Economics of Regulation and Antitrust)

ECP 6456 Law and Economics (satisfies ECP 4451 Law and Economics)

ECP 6614 Urban Economics (satisfies ECP 3613 Urban Economics)

## **Graduate Degree Requirements for the M.A. in Economics (30 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

### **Major Core (12 credit hours)**

ECO 6115 Microeconomics I

ECO 6206 Macroeconomics I

ECO 6405 Mathematical Economics I

ECO 6424 Econometrics I

### **Major Electives (18 credit hours)**

Twelve (12) credit hours of coursework from the following list:

ECO 6120 Economic Policy Analysis

ECO 6305 History of Economic Thought

ECO 6425 Econometrics II

ECO 6505 Public Finance

ECO 6525 Public Sector Economics

ECO 6706 International Trade: Theory and Policy

ECO 7116 Microeconomics II

ECO 7207 Macroeconomics II

ECO 7406 Mathematical Economics II

ECO 7426 Econometrics III

ECP 6405 Industrial Organization I

ECP 6408 Economics of Organization

ECP 6415 Issues in Regulation and Antitrust

ECP 6456 Law and Economics

ECP 6536 Economics of Health Care I

ECP 6614 Urban Economics

ECP 6624 Regional Economics

ECP 7406 Industrial Organization II

ECP 7537 Economics of Health Care II

ECS 6015 Economic Development

Six (6) credit hours of graduate coursework outside of Economics

With the approval of the Graduate Director, unrestricted elective courses may be satisfied either by graduate-level courses offered by any department within the University or by certain MBA courses taught within the Department of Economics.

### *Specific Course Requirements for the Accelerated Degree Program*

Students in the Accelerated Degree Program will be permitted to take nine (9) credit hours of graduate coursework prior to the B.A. in Economics being conferred. Of these 9 credit hours, six (6) will be mandatory (ECO 6405 and ECO 6115) and three (3) credit hours will be chosen from ECO 6206, ECO 6424, ECO 6505, ECP 6408, ECP 6415, ECP 6456, and ECP 6614. With the exceptions of ECO 6115 and ECO 6206 which do not satisfy any specific undergraduate course (ECO 3101 and ECO 3203 constitute six (6) credit hours of the 15 credit hours in the major that are required to be admitted to the Accelerated Degree Program), all other graduate courses taken prior to the awarding of the B.A. in Economics satisfy the following undergraduate elective courses:

- ECO 4401 satisfied by ECO 6405
- ECO 4421 satisfied by ECO 6424
- ECO 4504 satisfied by ECO 6505
- ECP 3403 satisfied by ECP 6408

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- ECP 3413 satisfied by ECP 6415
- ECP 3613 satisfied by ECP 6614
- ECP 4451 satisfied by ECP 6456

## *Elective Requirements*

Of the six (6) elective courses that comprise the M.A. in Economics, students in the Accelerated Degree Program are permitted to take at most one such course before the B.A. in Economics is conferred.

Following the awarding of the B.A. in Economics, students in the Accelerated Degree Program will be able to choose their remaining graduate elective courses from the list of economics elective courses given above.

In addition to completing the 30 hours of coursework with overall and major GPAs of at least 3.0, a student must pass an oral examination conducted by a panel of three faculty members who have taught courses in the student's program. At least one faculty member must be drawn from those who teach the core courses. The oral examination provides a forum for the student to provide evidence that s/he has sufficient knowledge and breadth of fundamental economic concepts so as to be able to undertake rigorous economic analysis, both theoretical and empirical in nature.

## **Completion Requirements**

All students are required to take courses in advanced economic theory and econometrics. Undergraduate economics majors at USF may complete the program in one year beyond the B.A. in the 5-Year B.A./M.A. Program. Students preparing for doctoral studies select from these and additional courses in economic theory, mathematics, and quantitative methods. Where appropriate students may select courses in other departments within the University. Students must satisfy all University requirements for the M.A. degree. To graduate, a student must have at least an overall 3.0 GPA and at least a 3.0 GPA for all economics courses, and pass an oral examination.

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## **Accelerated B.A. in English with a concentration in Literary Studies and M.A. in English with a concentration in Literature**

### **Description**

This program allows English majors who are concentrating in Literary Studies to take graduate courses toward the M.A. in English with a concentration in Literature during their senior year. These shared credits will be applicable to the M.A. degree, thus accelerating the time to completion, with successful students able to earn the M.A. degree in two additional semesters beyond the completion of the B.A. degree.

This accelerated program shares 12 credit hours between already existing degrees/concentrations:

- B.A. in English with a concentration in Literary Studies
- M.A. in English with a concentration in Literature

### **Target Students and Expected Outcomes**

This program builds on the department's B.A. and M.A. degrees. It will give talented English majors the opportunity to take graduate courses and apply them to an M.A. in English with a concentration in Literature. If successful, students will be able to complete an M.A. two semesters after the B.A. requirements have been met. This will allow them to more expeditiously pursue career opportunities requiring a graduate degree in Literary Studies or pursue Ph.D. studies.

### **Admission Requirements**

For admission to the program, a student must:

1. have completed at least 15 hours in the English major, with a concentration in Literary Studies, including ENG 3014.
2. have a minimum undergraduate 3.33 GPA overall; and
3. have a minimum undergraduate 3.5 GPA in the major.

Application to the program may be made by any student who has satisfied the minimum requirements.

Applications should be addressed to the Department Undergraduate and Graduate Directors and should include a statement by the student affirming satisfaction of minimum requirements (with supporting documentation) and a letter of recommendation from a Literary Studies faculty member familiar with the student's academic performance.

### **Timeline and Benchmarks:**

1. To be considered for acceptance into the Accelerated B.A./M.A. in English with concentrations in Literary Studies and Literature, students must have completed a minimum of 15 credits in the undergraduate English major.
2. Students must have a minimum undergraduate GPA of 3.33 overall, and a minimum GPA of 3.50 in the major to be eligible for the accelerated degree program.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program.
4. Applications should be addressed to the Department Undergraduate and Graduate Directors and should include:
  - a. a statement by the student affirming satisfaction of minimum requirements (with supporting documentation)
  - b. a letter of recommendation from a Literary Studies faculty member familiar with the student's academic performance.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.
6. A comprehensive plan of study to complete the integrated B.A./M.A. program will be developed with the guidance of an advisor and a faculty member. A possible plan of study could be as follows. Summer sessions may also be included in the study plan.

### **Shared Courses (12 credit hours)**

Twelve (12) credit hours of graduate credit may be shared as follows:

ENG 4013 or ENG 4950 can be satisfied by either ENG 6018 or ENG 6019

Nine (9) credit hours at the 4000-level are satisfied by nine (9) credit hours at the 6000-level from comparable categories II-IV

### **Undergraduate Degree Requirements for the B.A. in English with a concentration in Literary Studies (36 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**



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## Concentration Core (21 credit hours)

### I. Required Course (3 credit hours):

ENG 3014 Introduction to Literary Methodology (recommended during first 2 semesters of the major)

### II. Additional Requirements (18 credit hours):

#### Capstone (3 credit hours)

Students must choose one course from the following list (Note: These courses are approved only for the department's capstone requirement, not for the University's EXIT Capstone requirement.):

ENG 4013 Literary Criticism

ENG 4950 Senior Capstone

#### Literary Histories (9 credit hours)

Students must choose one course from three of the four pre-1900 categories:

##### *Medieval/Renaissance*

ENL 3015 British Literature to 1616

ENL 3331 Early Shakespeare

ENL 3332 Late Shakespeare

ENL 4203 Introduction to Old English

ENL 4311 Chaucer

ENL 4338 Advanced Studies in Shakespeare

ENL 4501 Studies in Medieval & Early Modern Literature

LIT 3101 Literature of the Western World through the Renaissance

##### *17th/18th Century British*

ENL 3016 Studies in 17th and 18th Century British Literature

ENL 3230 British Literature 1616-1780

ENL 4112 Eighteenth-Century British Novel

ENL 4341 Milton

##### *19th Century British*

ENL 3017 Studies in 19th Century British Literature

ENL 3251 British Literature 1780-1900

ENL 4122 19th Century British Novel

##### *American Before 1900*

AML 3031 American Literature from the Beginnings to 1860

AML 3032 American Literature from 1860 to 1912

AML 4111 Nineteenth-Century American Novel

#### Cultural-Critical Studies (3 credit hours)

Students must choose one course from the following list:

AML 3604 African American Literature

AML 3630 U.S. Latino/Latina Literature in English

AML 3641 Native American Literature and Film

AML 3674 Asian American Literature and Film

AML 4933 Studies in American Literature and Culture

LIT 3353 Literature, Race, and Ethnicity

LIT 3410 Religious and Philosophical Themes in Literature

LIT 3513 Literature, Gender, and Sexuality

LIT 4233 Postcolonial Literature

LIT 4386 British and American Literature by Women

LIT 4931 Studies in World Literature and Culture

#### Language and Genre (3 credit hours)

Students must choose one course from the following list:

AML 4111 Nineteenth-Century American Novel

AML 4121 Twentieth-Century American Novel

AML 4931 American Literary Movements and Genre

ENG 3113 Film as Narrative Art

ENG 4060 History of the English Language

ENG 4674 Film and Culture

ENL 4112 Eighteenth-Century British Novel

ENL 4122 Nineteenth-Century British Novel

ENL 4132 British Novel: Conrad to the Present

ENL 4930 Selected Topics

LIN 4671 Traditional English Grammar

LIN 4680 Structure of American English

LIT 3022 Modern Short Prose

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LIT 3031 Survey of Poetry  
LIT 3043 Modern Drama  
LIT 3144 Modern European Novel

## Concentration Electives (15 credit hours)

Students may count one course from the following list:

Any one LIT 2000-level course may count as an elective:

LIT 2000 Introduction to Literature  
LIT 2010 Introduction to Fiction  
LIT 2020 Introduction to the Short Story  
LIT 2030 Introduction to Poetry  
LIT 2040 Introduction to Drama

Students may select four additional courses (12 credit hours) from the following list:

AML 3051 American Literature from 1912 to 1945  
AML 3243 American Literature from 1945 to the present  
AML 4261 Literature of the South  
AML 4300 Selected American Authors  
ENG 4013 Literary Criticism (recommended for those planning to attend graduate school)  
ENL 3026 Studies in the 20th Century Literature  
ENL 3273 British Literature 1900-1945  
ENL 4303 Selected British Authors  
LIT 3093 Contemporary Literature  
LIT 3102 Literature of the Western World since the Renaissance  
LIT 3374 The Bible as Literature  
LIT 3930 Selected Topics in Literature  
LIT 4930 Selected Topics in English Studies  
Any additional LTS major course listed above  
Any major CRW course listed under the Creative Writing concentration  
Any major ENC course listed under the Professional Writing, Rhetoric and Technology concentration

## Shared Courses (12 credit hours)

Twelve (12) credit hours of graduate credit may be shared as follows:

ENG 4013 or ENG 4950 can be satisfied by either ENG 6018 or ENG 6019

Nine (9) credit hours at the 4000-level are satisfied by nine (9) credit hours at the 6000-level from comparable categories II-IV

## Graduate Degree Requirements for the M.A. in English with a concentration in Literature (33 credit hours)

\*Please see Graduate Catalog for major-specific requirements

## Major Core (3 credit hours)

ENG 6009 Introduction to Graduate Studies

## Concentration Core (21 credit hours)

ENG 6018 Criticism and Theory I **or** ENG 6019 Criticism and Theory II

## Historical Distribution - 12 credit hours

**Four courses chosen from the following** (one (1) course from each of the following groups):

Medieval or Renaissance (including 17th Century)

ENL 6206 Studies in Old English  
ENL 6216 Studies in Middle English  
ENL 6226 Studies in Sixteenth-Century British Literature  
ENL 6228 Studies in Seventeenth-Century British Literature

18<sup>th</sup> Century (Either British tradition or Literature of the Americas)

AML 6017 Studies in American Literature to 1860  
ENL 6236 Studies in Restoration and Eighteenth-Century British Literature

19<sup>th</sup> Century (Either British tradition or Literature of the Americas):

AML 6017 Studies in American Literature to 1860  
AML 6018 Studies in American Literature to 1860 to 1920  
ENL 6246 Studies of the English Romantic Period  
ENL 6256 Studies in Victorian Literature

20<sup>th</sup> Century (Either British traditions or Literature of the Americas):

AML 6027 Studies in Modern American Literature  
ENL 6276 Studies in Modern British Literature

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LIT 6096 Studies in Contemporary Literature

## **Cultural & Critical Studies - 6 credit hours**

Two courses in ethnic literature (including African-American, Latino/a, post-colonial), world literature, women's literature or gender studies, critical theory, film, or genre

AML 6608 Studies in African American Literature

ENG 6018 Studies in Criticism and Theory I

ENG 6019 Studies in Criticism and Theory II

ENG 6067 History of the English Language

LIT 6934 Selected Topics in English Studies

Or other courses as approved by the Graduate Director

## **Concentration Electives (6 credit hours)**

Students taking ENC 6745 Teaching Practicum must use this as an elective if they count it toward the 33 credits in the degree. No CRW courses will be allowed in the literature track. Only one practicum will be allowed to satisfy degree requirements (including ENC 6745) in Option I. One Directed Study may be used to substitute for degree requirement with the approval of the Graduate Director.

## **Portfolio and Defense (3 credit hours)**

Three directed study hours to prepare portfolio. In their fourth and final semester (excluding summer terms), MA students will submit a portfolio for review to a three-member faculty committee six weeks prior to the Office of Graduate Studies deadline for thesis/dissertation submission. Upon submission, the student and chair of the committee will establish a defense date with the Graduate Program Specialist.

The portfolio will contain the following:

- An introductory first-person essay in which the student offers a self-evaluation of the contents of the portfolio and how it reflects his or her own process of revision, intellectual growth, plans for publication/dissemination, and professional development (minimum five pages, not to exceed fifteen).
- Three revised seminar papers 15-20 pages in length, including appropriate MLA or Chicago Style documentation.
  - Papers should represent three distinct literary periods, including at least one prior to 1800 and one after 1800. In addition, the contents of the portfolio should represent diversity on a national level, with at least one paper focusing on literature of the Americas and the other on literature from Britain (broadly construed) or its colonies.
  - Papers should be developed under the direction of three different faculty members from the English Department, who then will form the committee for the defense. One member of the committee will serve as the chair, who will coordinate the circulation of the portfolio, the scheduling of the defense, and the submission of evaluation forms to the graduate director within specified deadlines.

The portfolio will be reviewed and evaluated by this three-member faculty committee using the published assessment rubric. Members of the portfolio committee will be asked to work with the student to revise the papers she/he wrote for class. The goal is to get the papers into a form that might reasonably be published. Because this option is not a thesis, it does not have to be submitted to the Office of Graduate Studies, and so it does not need to adhere to the Office of Graduate Studies deadlines. Defenses should be concluded two weeks before the end of classes. The whole portfolio, along with the revised papers and the introductory essay, should be circulated two weeks prior to the defense, to give committee members an opportunity to read it through. Each portfolio paper will also be scored on a scale from 1 to 4 on content using the rubric at the end of the handbook. To pass, a portfolio requires a minimum score of 9 in content.

- Pass with Distinction: portfolios scoring between 11 and 12 will merit distinction; this will be noted in the student's file and can be referenced on a student's CV.
- Deficiency: portfolios scoring between 7 and 8 or with one paper earning a 1 will be deficient. Any paper scoring less than 3 will require revision. Individual faculty need to specify in writing what the essay requires for revision in order to pass. Students will have the opportunity to revise during the remaining time of the semester; revised paper(s) need to be submitted to all committee members for approval no later than the last day of class for the semester. No second defense is required. Students who fail to revise appropriately before the end of the semester will be put on academic probation and will be required to finalize their papers the following semester (excluding summer unless faculty agree to serve during the summer).
- Failure: portfolios that score a 6 or less or portfolios that score less than 9 in overall content fail. Students who fail will automatically be put on academic probation and given the opportunity to revise papers so that the portfolio reaches a minimum score of 9 the following semester (excluding summer unless faculty agree to serve during the summer). A failed portfolio requires a second defense after revision, and the committee will determine if it passes or fails (no deficiencies or distinctions may be awarded). If the portfolio fails after the second defense the student will be academically dismissed from the program.

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Graduate Assistants on probation in the initial term maintain eligibility for an assistantship. If probationary status is not removed, the student can be removed from assistantship and academically dismissed from the program. The committee will also evaluate the introductory essay using the appropriate rubric; this grade will be recorded for purposes of program assessment.

## **Oral Defense**

The committee chair convenes a meeting with the committee and student for 30 minutes; this oral examination provides the opportunity for faculty to question the student on various aspects of the portfolio, and it gives the student the opportunity to expand upon and refine ideas represented in writing. The defense also provides an opportunity for further suggestions on publication and revision. After 30 minutes, the committee will convene without the student to discuss a final assessment for the portfolio using the published rubric.

No grade lower than a B will be accepted in a graduate course in the B.A./M.A. program. Students earning less than a B in a graduate course must retake the course and earn a B or higher to apply it to their graduate degree.

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## **Accelerated B.S. in Environmental Biology and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.S. in Environmental Biology (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Environmental Biology major.

This accelerated program shares 12 credit hours between already existing degrees:

- B.S. in Environmental Biology
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.S. in Environmental Biology to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Environmental Biology that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified biology teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the B.S. Environmental Biology major upon applying and thirty (30) semester hours in science (includes twenty-five (25) semester hours in biology plus 5 hours of upper-level work in math or supporting science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program.
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks**

1. To be considered for acceptance into the Accelerated B.S. Environmental Biology/M.A.T. Science Education program, students must have completed a minimum of 15 credit hours in the Environmental Biology undergraduate major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. Information on the General Knowledge Test on the Florida Teacher Certification section may be found on the webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.S. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of the College of Education Graduate Program, the College of Arts and Sciences, and the USF Graduate School.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  - a. Undergraduate transcripts;
  - b. Evidence of possessing a degree in a science discipline (Biology, Chemistry, Physics, Geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty;
  - c. A bachelor's or higher degree in biology or a bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in biology with associated laboratory experiences.
  - d. Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Environmental Biology elective coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education

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SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Undergraduate Degree Requirements for the B.S. in Environmental Biology (40-41 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Required Supporting Courses for the Major (32-34 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester. Students must receive a C- or better to meet requirements for degree (for progression in Math and Chemistry, a minimum grade of C is required).

CHM 2045 and CHM 2045L General Chemistry I and Laboratory  
CHM 2046 and CHM 2046L General Chemistry II and Laboratory  
CHM 2210 and CHM 2210L Organic Chemistry I and Laboratory  
CHM 2211 and CHM 2211L Organic Chemistry II and Laboratory  
Calculus I: MAC 2241 or MAC 2311 or MAC 2281  
Statistics or Calculus II: STA 2023 or MAC 2242 or MAC 2312 or MAC 2282  
One of the General Physics sequences:

PHY 2053/2053L General Physics I **and** PHY 2054/2054L General Physics II  
PHY 2048/2048L General Physics I - Calculus Based **and** PHY 2049/2049L General Physics II - Calculus Based

### **Major Core (25-26 credit hours)**

#### **Biology Core Curriculum (25-26 credit hours)**

BSC 2010 and BSC 2010L Cellular Processes and Laboratory  
BSC 2011 and BSC 2011L Biodiversity and Laboratory  
PCB 3043 and PCB 3043L Principles of Ecology and Laboratory  
PCB 3063 and PCB 3063L General Genetics and Laboratory  
BSC 4052 Conservation Biology  
PCB 4674 Organic Evolution

Choose one of the following courses:

BOT 4601 Plant Ecology  
BSC 4933 Selected Topics in Biology\*

\*Selected topics as approved for the major by the Department of Integrative Biology

### **Major Electives (15 credit hours)**

Select a minimum of 15 credit hours from the following list:

BCH 4033 Advanced Biochemistry I  
BSC 2093C Human Anatomy and Physiology I  
BSC 2094C Human Anatomy and Physiology II  
Any upper-level course with a BOT, BSC, ENY, MCB, PCB, or ZOO prefix, with the exception of those intended for non-majors\*

\*Note: BSC 4933 cannot be taken as elective credit without prior approval.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Environmental Biology elective coursework:

SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

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## **Core Courses (39 credit hours)**

EDF 6432 Foundations of Measurement  
ESE 5342 Teaching the Adolescent Learner  
ESE 5344 Classroom Management for a Diverse School and Society  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 5564 Reading and Communication in Science Education  
SCE 6416 Teaching Secondary School Biology  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6634 Current Trends in Secondary Science Education  
SCE 6938 Topics in Science Education: Field Practicum  
SCE 6947 Internship (PR: CI and passing scores of FTCE exam)  
TSL 5325 ESOL Strategies for Content Area Teachers

### **Comprehensive Exam**

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).

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## **Accelerated B.S. in Environmental Microbiology and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.S. in Environmental Microbiology (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Environmental Microbiology major.

This accelerated program shares 12 credit hours between already existing degrees:

- B.S. in Environmental Microbiology
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.S. in Environmental Microbiology to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Environmental Microbiology that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified biology teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the Environmental Microbiology major upon applying and thirty (30) semester hours in science (includes twenty-five (25) semester hours in biology plus 5 hours of upper-level work in math or supporting science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program.
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks**

1. To be considered for acceptance into the Accelerated B.S. Environmental Microbiology/M.A.T. Science Education program, students must have completed a minimum of 15 credit hours in the Environmental Microbiology undergraduate major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. Information on the General Knowledge Test on the Florida Teacher Certification section may be found on the webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.S. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of the College of Education Graduate Program, the College of Arts and Sciences, and the USF Graduate School.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  - a. Undergraduate transcripts;
  - b. Evidence of possessing a degree in a science discipline (Biology, Chemistry, Physics, Geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty;
  - c. A bachelor's or higher degree in biology or a bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in biology with associated laboratory experiences.
  - d. Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Environmental Microbiology elective coursework:  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education



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SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Undergraduate Degree Requirements for the B.S. in Environmental Microbiology (40 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Required Supporting Courses for the Major (32-34 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester. Students must receive a C- or better to meet requirements for degree (for progression in Math and Chemistry, a minimum grade of C is required)

CHM 2045 and CHM 2045L General Chemistry I and Laboratory

CHM 2046 and CHM 2046L General Chemistry II and Laboratory

CHM 2210 and CHM 2210L Organic Chemistry I and Laboratory

CHM 2211 and CHM 2211L Organic Chemistry II and Laboratory

Calculus I: MAC 2241 or MAC 2311 or MAC 2281

Statistics or Calculus II: STA 2023 or MAC 2242 or MAC 2312 or MAC 2282

One of the General Physics sequences:

PHY 2053/2053L General Physics I **and** PHY 2054/2054L General Physics II

PHY 2048/2048L General Physics I - Calculus Based **and** PHY 2049/2049L General Physics II - Calculus Based

### **Major Core (30 credit hours)**

#### **Biology Core: 16 credit hours**

BSC 2010 and BSC 2010L Cellular Processes and Laboratory

BSC 2011 and BSC 2011L Biodiversity and Laboratory

PCB 3043 and PCB 3043L Principles of Ecology and Laboratory

PCB 3063 and PCB 3063L General Genetics and Laboratory

#### **Environmental Microbiology Core: 24 credit hours**

MCB 3020 and MCB 3020L General Microbiology and Laboratory

MCB 4404 and MCB 4404L Microbial Physiology and Genetics and Laboratory

Choose two of the following courses:

BSC 4933 Selected Topics in Biology\*

BSC 4444 Genomics

MCB 4202 Ecology of Infectious Diseases

ZOO 4233 Parasitology

\*Selected topics as approved for the major by the Department of Integrative Biology

### **Major Electives (10 credit hours)**

Select a minimum of 10 credit hours from the following list:

BCH 4033 Advanced Biochemistry I

BSC 2093C Human Anatomy and Physiology I

BSC 2094C Human Anatomy and Physiology II

Any upper-level course with a BOT, BSC, ENY, MCB, PCB, or ZOO prefix, with the exception of those intended for non-majors\*

\*Note: BSC 4933 cannot be taken as elective credit without prior approval.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Environmental Microbiology elective coursework:

SCE 5325 Methods of Middle Grades Science Education

SCE 5337 Methods of Secondary Science Education

SCE 6456 Teaching Secondary School Physical and Earth Science

SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit

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passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

## **Core Courses (39 credit hours)**

EDF 6432 Foundations of Measurement  
ESE 5342 Teaching the Adolescent Learner  
ESE 5344 Classroom Management for a Diverse School and Society  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 5564 Reading and Communication in Science Education  
SCE 6416 Teaching Secondary School Biology  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6634 Current Trends in Secondary Science Education  
SCE 6938 Topics in Science Education: Field Practicum  
SCE 6947 Internship (PR: CI and passing scores of FTCE exam)  
TSL 5325 ESOL Strategies for Content Area Teachers

### **Comprehensive Exam**

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).

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## **Accelerated B.A. in Humanities and Cultural Studies with a concentration in Film and New Media Studies and M.A. in Liberal Arts with a concentration in Film Studies**

### **Description**

This program intends for students to complete a B.A. in Humanities and Cultural Studies with a concentration in Film and New Media Studies and M.A. in Liberal Arts with a concentration in Film Studies over the span of five years. Completion of this program allows students to complete 12 credit hours toward the M.A. in during their junior or senior year in the Humanities and Cultural Studies major. Students who decide not to pursue the M.A. but who complete the B.A. requirements will receive the B.A. degree.

This accelerated program shares 12 credit hours between already existing degrees/concentrations:

B.A. in Humanities and Cultural Studies with a concentration in Film and New Media Studies

M.A. in Liberal Arts with a concentration in Film Studies

### **Target Students and Expected Outcomes**

The accelerated program is an attractive and viable path for students seeking to expedite their entry to the workforce or to Ph.D. studies. Students who complete this program will maximize department resources and opportunities for research.

### **Admission Requirements**

For consideration of admission to the program, a student must:

1. Have completed 15 credit hours in the B.A. Humanities and Cultural Studies major, Film and New Media Studies concentration upon applying;
2. Have a minimum 3.33 GPA overall;
3. Have a minimum undergraduate 3.5 GPA in the major;
4. Have completed FIL 1002 with a B or higher; and
5. Have met with the Graduate Director and/or Graduate Advisor to discuss a plan of study

### **Shared Courses (12 credit hours)**

The following 12 credit hours of coursework will be shared between the two degrees:

FIL 3052 Foundations of Film & New Media

Satisfied by HUM 6583 Global Cinema and New Media to 1960

FIL 3077 Contemporary Film & New Media

Satisfied by HUM 6584 Global Cinema and New Media since 1960

Three (3) credit hours of upper-level, undergraduate AMS, FIL, or HUM coursework

Satisfied by HUM 6586 Film Theory

An additional three (3) credit hours may be earned by taking any 6000-level AMS or HUM course

### **Undergraduate Degree Requirements for the B. A. in Humanities and Cultural Studies with a concentration in Film and New Media Studies (36 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Major Core (9 credit hours)**

HUM 3804 Introduction to Cultural Studies

HUM 4331 Humanities Pro-Seminar

HUM 4931 Seminar in Humanities

### **Concentration Core (12 credit hours)**

FIL 1002 Introduction to Film Studies

FIL 3052 Foundations of Film & New Media

FIL 3077 Contemporary Film & New Media

Students select one course from the following list:

AMS 2270 Twentieth-Century American Culture

HUM 2250 Studies in Culture: The Twentieth Century

### **Concentration Electives (15 credit hours)**

Students take an additional 15 credit hours of upper-level coursework from Humanities and Cultural Studies with an AMS, FIL, or HUM prefix.

### **Shared Courses (12 credit hours)**

The following 12 credit hours of coursework will be shared between the two degrees:

FIL 3052 Foundations of Film & New Media

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Satisfied by HUM 6583 Global Cinema and New Media to 1960  
FIL 3077 Contemporary Film & New Media  
Satisfied by HUM 6584 Global Cinema and New Media since 1960  
Three (3) credit hours of upper-level, undergraduate AMS, FIL, or HUM coursework  
Satisfied by HUM 6586 Film Theory  
An additional three (3) credit hours may be earned by taking any 6000-level AMS or HUM course

## **Graduate Degree Requirements for the M.A. in Liberal Arts with a concentration in Film Studies (33 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

### **Major Core (3 credit hours)**

HUM 6815 Research Seminar

### **Concentration Core (12 credit hours)**

HUM 6814 Introduction to Graduate Study  
HUM 6583 Global Cinema and New Media to 1960  
HUM 6584 Global Cinema and New Media since 1960  
HUM 6586 Film Theory

### **Concentration Electives (12 credit hours)**

Twelve (12) credit hours of additional coursework selected in consultation with the Graduate Director

### **Thesis (6 credit hours)**

HUM 6971 Thesis

After the completion of coursework, each student will select a thesis topic; constitute a thesis committee; and write and orally defend a thesis proposal. Each student will then write and orally defend a 40-80 page thesis. During the proposal and thesis writing stage, students are required to enroll for 6 thesis hours.

Students pursuing the M.A. in Liberal Arts with a concentration in Film Studies through the Accelerated B.A./M.A. program, may choose either a thesis or an exam, with the approval of the Graduate Advisor. Required coursework for the accelerated degree is tailored to the choice of the thesis or exam path as noted below.

### **Thesis Path**

In addition to the above, students pursuing the thesis option must take:

HUM 6814 Introduction to Graduate Study  
HUM 6815 Research Seminar  
HUM 6971 Thesis  
Three electives (nine credit hours), chosen in consultation with the Graduate Advisor

### **Exam Path (Non-Thesis)**

In addition to the above requirements for both thesis and exam paths, students pursuing the exam option, must take:

HUM 6814 Introduction to Graduate Study  
Five electives (15 credit hours), chosen in consultation with the Graduate Advisor  
Three credit hours of Directed Reading in preparation for the MA exam  
An exam, administered and graded by a committee, comprising the student's major professor and two other members of the graduate faculty. If a student fails the exam, she/he may retake it once, no later than one month after the graded exam is returned to the student.

### **Comprehensive Exam**

The submission and oral defense of the thesis proposal equates to the comprehensive exam.

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## **Accelerated B.S. in Integrative Animal Biology and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.S. in Integrative Animal Biology (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Integrative Animal Biology major.

This accelerated program shares 12 credits between already existing degrees:

- B.S. in Integrative Animal Biology
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.S. in Integrative Animal Biology to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Integrative Animal Biology that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified biology teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the B.S. Integrative Animal Biology major upon applying and thirty (30) semester hours in science (includes twenty-five (25) semester hours in biology plus 5 hours of upper-level work in math or supporting science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program.
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks**

1. To be considered for acceptance into the Accelerated B.S. Integrative Animal Biology/M.A.T. Science Education program, students must have completed a minimum of 15 credit hours in the Integrative Animal Biology undergraduate major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. Information on the General Knowledge Test on the Florida Teacher Certification section may be found on the webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.S. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of the College of Education Graduate Program, the College of Arts and Sciences, and the USF Graduate School.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  1. Undergraduate transcripts;
  2. Evidence of possessing a degree in a science discipline (Biology, Chemistry, Physics, Geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty;
  3. A bachelor's or higher degree in biology or a bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in biology with associated laboratory experiences.
  4. Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Integrative Animal Biology elective coursework:  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education

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SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Undergraduate Degree Requirements for the B.S. in Integrative Animal Biology (40 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Required Supporting Courses for the Major (32-34 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester. Students must receive a C- or better to meet requirements for degree (for progression in Math and Chemistry, a minimum grade of C is required)

CHM 2045 and CHM 2045L General Chemistry I and Laboratory  
CHM 2046 and CHM 2046L General Chemistry II and Laboratory  
CHM 2210 and CHM 2210L Organic Chemistry I and Laboratory  
CHM 2211 and CHM 2211L Organic Chemistry II and Laboratory  
Calculus I: MAC 2241 or MAC 2311 or MAC 2281  
Statistics or Calculus II: STA 2023 or MAC 2242 or MAC 2312 or MAC 2282  
One of the General Physics sequences:

PHY 2053/2053L General Physics I **and** PHY 2054/2054L General Physics II  
PHY 2048/2048L General Physics I - Calculus Based **and** PHY 2049/2049L General Physics II - Calculus Based

### **Major Core (24 credit hours)**

#### **Biology Core (16 credit hours)**

BSC 2010 Cellular Processes  
BSC 2010L Cellular Processes Laboratory  
BSC 2011 Biodiversity  
BSC 2011L Biodiversity Laboratory  
PCB 3043 Principles of Ecology  
PCB 3043L Principles of Ecology Laboratory  
PCB 3063 General Genetics  
PCB 3063L General Genetics Laboratory

#### **Structure and Function Courses: 8 credit hours**

Choose one Structure & Function Pairing from the following list:

Invertebrate Biology  
ZOO 3205C Advanced Invertebrate Zoology **AND** PCB 3712/3713L General Physiology and Lab  
Vertebrate Biology  
BSC 4933 Selected Topics in Biology: Vertebrate Natural History and Lab **OR** ZOO 3713C Comparative Vertebrate Anatomy **OR** BSC 4933 Selected Topics in Biology: Mammalogy and Lab **AND** PCB 3712/PCB 3713L General Physiology and Lab  
Human Biology  
BSC 2093C Human Anatomy & Physiology I **AND** BSC 2094C Human Anatomy & Physiology II

### **Major Electives (16 credit hours)**

Choose 16 additional hours of Integrative Animal Biology Major courses (8 of the 16 hours must be 4000+ level Biology Major Courses), from Tampa Campus IB Department or CMMB Department course offerings (prefix of BOT, BSC, MCB, PCB, or ZOO), with the exception of BSC 4905 and courses labeled as "not for major credit."

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Integrative Animal Biology elective coursework:

SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit

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passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

## **Core Courses (39 credit hours)**

EDF 6432 Foundations of Measurement  
ESE 5342 Teaching the Adolescent Learner  
ESE 5344 Classroom Management for a Diverse School and Society  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 5564 Reading and Communication in Science Education  
SCE 6416 Teaching Secondary School Biology  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6634 Current Trends in Secondary Science Education  
SCE 6938 Topics in Science Education: Field Practicum  
SCE 6947 Internship (PR: CI and passing scores of FTCE exam)  
TSL 5325 ESOL Strategies for Content Area Teachers  
Comprehensive Exam

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).

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## **Accelerated B.S. in Interdisciplinary Natural Sciences and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.S. in Interdisciplinary Natural Sciences (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Interdisciplinary Natural Sciences major.

This accelerated program shares 12 credits between already existing degrees:

- B.S. in Interdisciplinary Natural Sciences
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.S. in Interdisciplinary Natural Sciences to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Interdisciplinary Natural Sciences that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified science teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the B.S. in Interdisciplinary Natural Sciences major upon applying and thirty (30) semester hours in science (includes twenty-one (21) semester hours in a science concentration (e.g. chemistry, biology, physics) plus 9 hours in minor science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education Program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks:**

1. To be considered for acceptance into the Accelerated B.S. Interdisciplinary Natural Sciences/M.A.T. Science Education program, students must have completed a minimum of 15 credit hours in the Interdisciplinary Natural Sciences undergraduate major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. You can find information on the General Knowledge Test on the Florida Teacher Certification section of the following webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.S. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of USF's Graduate School, the College of Education's Graduate Program, and the Department of Chemistry's Undergraduate Program.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  - Undergraduate transcripts; and evidence of possessing a degree in a science discipline (biology, chemistry, physics, geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty.
  - A minimum of 21 hours in a major science content area of concentration (e.g., chemistry, biology, physics) plus 9 hours in minor science content area are required to teach secondary school.
    - Note, to teach secondary science in a specialty area (e.g. chemistry, biology, physics) the State of Florida requires: A bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in that specialty area with associated laboratory experiences.
  - Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.



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## **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Interdisciplinary Natural Sciences elective coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education
- SCE 6456 Teaching Secondary School Physical and Earth Science
- SCE 6938 Topics in Science Education: Field Practicum

## **Undergraduate Degree Requirements for the B.S. in Interdisciplinary Natural Sciences (62-64 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Major Core (Tier 1) (38-40 credit hours)**

Two introductory courses in each of the five (5) natural sciences areas: Mathematics, Biology, Chemistry, Geology, Physics:

#### **Mathematics Courses:**

- MAC 2241 Life Sciences Calculus I
- \*MAC 2311 and MAC 2312 are also acceptable for the major.
- MAC 2242 Life Sciences Calculus II
- \*MAC 2281 and MAC 2282 are also acceptable for the major.

#### **Biology Courses:**

- BSC 2010 Cellular Processes
- BSC 2010L Cellular Processes Laboratory
- BSC 2011 Biodiversity
- BSC 2011L Biodiversity Laboratory

#### **Chemistry Courses:**

- CHM 2045 General Chemistry I
- CHM 2045L General Chemistry I Lab
- CHM 2046 General Chemistry II
- CHM 2046L General Chemistry II Lab

#### **Geology Courses:**

- GLY 2010 Dynamic Earth: Introduction to Physical Geology
- GLY 2000L Essentials of Geology Laboratory
- GLY 2100 History of Life
- GLY 2100L History of Life Laboratory

#### **Physics:**

- PHY 2053 General Physics I **and** PHY 2053L General Physics I Laboratory
- PHY 2054 General Physics II **and** PHY 2054L General Physics II Laboratory
- PHY 2048 General Physics I - Calculus Based **and** PHY 2048L General Physics I - Calculus Based Laboratory **and** PHY 2049 General Physics II - Calculus Based **and** PHY 2049L General Physics II - Calculus Based Laboratory are also accepted for this major.

### **Major Electives (Tier 2) (24 credit hours)**

Students are required to complete a minimum total of 24 credit hours. A minimum of 6 credit hours of structured, upper-level (3000-level or higher) courses in three of the five natural sciences areas is required. The remaining six credits of upper-level courses can be taken in any of the three Tier 2 Natural Science areas that the student has selected. All Tier 2 courses in the sciences will be selected by the individual student, but must be chosen from the list of courses approved for department major credit.

## **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Interdisciplinary Natural Sciences elective coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education
- SCE 6456 Teaching Secondary School Physical and Earth Science
- SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for

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admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

## **Core Courses (39 credit hours)**

EDF 6432 Foundations of Measurement  
ESE 5342 Teaching the Adolescent Learner  
ESE 5344 Classroom Management for a Diverse School and Society  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 5564 Reading and Communication in Science Education  
SCE 6416 Teaching Secondary School Biology  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6634 Current Trends in Secondary Science Education  
SCE 6938 Topics in Science Education: Field Practicum  
SCE 6947 Internship (PR: CI and passing scores of FTCE exam)  
TSL 5325 ESOL Strategies for Content Area Teachers  
Comprehensive Exam

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).

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## **Accelerated B.S. in Marine Biology and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.S. in Marine Biology (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Marine Biology major.

This accelerated program shares 12 credits between already existing degrees:

- B.S. in Marine Biology
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.S. in Marine Biology to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Marine Biology that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified biology teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the B.S. Marine Biology major upon applying and thirty (30) semester hours in science (includes twenty-five (25) semester hours in biology plus 5 hours of upper-level work in math or supporting science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program.
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks:**

1. To be considered for acceptance into the Accelerated B.S. Marine Biology/M.A.T. Science Education program students must have completed a minimum of 15 credit hours in the Marine Biology undergraduate major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. Information on the General Knowledge Test on the Florida Teacher Certification section may be found on the webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.S. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of the College of Education Graduate Program, the College of Arts and Sciences, and the USF Graduate School.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  - a. Undergraduate transcripts;
  - b. Evidence of possessing a degree in a science discipline (Biology, Chemistry, Physics, Geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty;
  - c. A bachelor's or higher degree in biology or a bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in biology with associated laboratory experiences.
  - d. Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Marine Biology elective coursework:  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education

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SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Undergraduate Degree Requirements for the B.S. in Marine Biology (37-41 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Required Supporting Courses for the Major (32-34 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester. Students must receive a C- or better to meet requirements for degree (for progression in Math and Chemistry, a minimum grade of C is required).

CHM 2045 and CHM 2045L General Chemistry I and Laboratory  
CHM 2046 and CHM 2046L General Chemistry II and Laboratory  
CHM 2210 and CHM 2210L Organic Chemistry I and Laboratory  
CHM 2211 and CHM 2211L Organic Chemistry II and Laboratory  
Calculus I: MAC 2241 **or** MAC 2311 **or** MAC 2281  
Statistics or Calculus II: STA 2023 **or** MAC 2242 **or** MAC 2312 **or** MAC 2282

One of the Physics Sequences:

PHY 2053/2053L General Physics I **and** PHY 2054/2054L General Physics II  
PHY 2048/2048L General Physics I - Calculus Based **and** PHY 2049/2049L General Physics II - Calculus Based

### **Major Core (24-26 credit hours)**

BSC 2010 Cellular Processes  
BSC 2010L Cellular Processes Laboratory  
BSC 2011 Biodiversity  
BSC 2011L Biodiversity Laboratory  
BSC 3312 Marine Biology  
BSC 4937 Seminar in Marine Biology  
PCB 3043 Principles of Ecology  
PCB 3043L Principles of Ecology Laboratory  
PCB 3063 General Genetics  
PCB 3063L General Genetics Laboratory

**Choose one of the following:**

BOT 3373C Vascular Plants: Form and Function  
BSC 4933 Selected Topics in Biology\*  
MCB 3020 and MCB 3020L General Microbiology and Laboratory  
ZOO 3205C Advanced Invertebrate Zoology  
ZOO 3713C Comparative Vertebrate Anatomy  
\*Special topics as approved for the major by the Department of Integrative Biology

### **Major Electives (13-15 credit hours)**

Students choose 13-15 credit hours of coursework from the following list:

BCH 4033 Advanced Biochemistry I  
BOT 3373C Vascular Plants: Form and Function  
BOT 4184C Biology of Coastal Plants  
BSC 4313C Advanced Marine Biology  
BSC 4933 Special Topics in Biology\*  
GIS 4043C Geographic Information Systems **or** GIS 5049 GIS for Non-Majors  
GLY 4734 Beaches and Coastal Environments  
MCB 3020 General Microbiology  
MCB 3020L General Microbiology Laboratory  
MCB 4404 Microbial Physiology and Genetics **and** MCB 4404L Microbial Physiology and Genetics Laboratory  
PCB 3712 General Physiology **and** PCB 3713L General Physiology Laboratory  
PCB 4674 Organic Evolution  
PCB 4723 Animal Physiology **and** PCB 4723L Animal Physiology Laboratory  
ZOO 3205C Advanced Invertebrate Zoology  
ZOO 3407 Biology of Sharks and Rays **and** ZOO 3407L Biology of Sharks and Rays Laboratory  
ZOO 4454 Fish Biology **and** ZOO 4454L Fish Biology Laboratory  
ZOO 4513 Animal Behavior

\*Special topics as approved for the major by the Department of Integrative Biology

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## **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of Marine Biology elective coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education
- SCE 6456 Teaching Secondary School Physical and Earth Science
- SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

## **Core Courses (39 credit hours)**

- EDF 6432 Foundations of Measurement
  - ESE 5342 Teaching the Adolescent Learner
  - ESE 5344 Classroom Management for a Diverse School and Society
  - SCE 5325 Methods of Middle Grades Science Education
  - SCE 5337 Methods of Secondary Science Education
  - SCE 5564 Reading and Communication in Science Education
  - SCE 6416 Teaching Secondary School Biology
  - SCE 6456 Teaching Secondary School Physical and Earth Science
  - SCE 6634 Current Trends in Secondary Science Education
  - SCE 6938 Topics in Science Education: Field Practicum
  - SCE 6947 Internship (PR: CI and passing scores of FTCE exam)
  - TSL 5325 ESOL Strategies for Content Area Teachers
- Comprehensive Exam

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).

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## **Accelerated B.A. in Mathematics and M.A. in Mathematics**

This program is designed for superior students having a solid background in high school mathematics and the ability to handle a fast paced, challenging program leading to a B.A. in Mathematics and M.A. in Mathematics in four to five years.

The program meets all the requirements for the B.A. degree but requires the student to take the graduate-level courses required for the M.A. degree during the last two years in the program. Up to 20 hours of graduate courses may be counted towards the M.A. degree as well as the B.A. degree but not towards the undergraduate major (that is, as general electives).

For admission to the program, a student must:

1. have completed at least 30 hours of college credit including 8 hours of 3000-level or above Mathematics courses;
2. have at least a 3.0 GPA for all college courses; and
3. have at least a 3.5 GPA for all Mathematics courses taken at the 3000-level or above.

To apply for admission, send a letter to the Chair of the Department of Mathematics stating your qualifications and desire to enter the program. An important benefit of this program is that a student is eligible to apply for a graduate teaching assistantship once he or she has completed the undergraduate Mathematics major courses.

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## **Accelerated B.S. in Microbiology and M.S. in Microbiology**

### **Description**

This program allows undergraduate Microbiology to take graduate courses for the elective part of the Microbiology major and apply them to a non-thesis M.S. in Microbiology. Successful students will be able to earn the M.S. degree in two additional semesters beyond the completion of the B.S. degree.

This accelerated program shares 12 credit hours between already existing degrees:

- B.S. in Microbiology
- M.S. in Microbiology (Non-Thesis)

### **Target Students and Expected Outcomes**

This program will appeal to the more competitive Microbiology majors who would benefit professionally from having the M.S. when they enter the job market but do not want to commit to the longer time a thesis M.S. or a Ph.D. program takes to complete. Professions that do not require bench laboratory experience but desire the broadened knowledge base are targeted. Graduates from this program would be ideally suited for health professions, technology based industry, education, and government. We also expect that some students will be interested in doctoral education in the biological or biomedical areas.

### **Admission Requirements**

Microbiology majors who have completed the following courses may apply to this program:

- PCB 3023 Cell Biology
- PCB 3063 Genetics
- MCB 3410 Cell Metabolism
- MCB 3020 General Microbiology
- MCB 4115 Determinative Bacteriology

### **Timeline and Benchmarks:**

1. Completion of prerequisite upper division courses and application to the accelerated program. Typically, students will be in their junior year.
2. Acceptance into the program and an action plan within a semester of application.
3. Students will take up to 12 credit hours of graduate credit in Cell Biology, Microbiology and Molecular Biology courses following acceptance into the program. Typically, these courses will be taken in the latter half of the junior year and in the senior year. BioAdvise will monitor the progress of the students and ensure they follow their action plan. Students who do not complete at least 9 hours of graduate work by graduation will be dropped from the accelerated M.S. program.
4. GRE exams will be taken in a timely manner so scores will be available for admission to the M.S. portion of the program. Students who do not complete the GRE in time will not be admitted to the accelerated M.S. program.
5. Students admitted to the accelerated program must form a committee prior to the beginning of their first semester in the M.S. portion of the program and must continue to follow the action plan, which will be monitored by BioAdvise.
6. Students admitted to the accelerated M.S. program must complete the requirements within three semesters or will be dismissed from the program.

### **Shared Courses (12 credit hours)**

Twelve (12) credit hours of graduate credit may be shared as follows:

- Three (3) credit hours of 5000-level elective structured courses for 3000- or 4000-level electives
- Nine (9) credit hours of 5000- or 6000-level elective courses for 3000- or 4000-level electives

### **Undergraduate Degree Requirements for the B.S. in Microbiology (43 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Major Core (31 credit hours)**

- BSC 2010 Cellular Processes
- BSC 2010L Cellular Processes Laboratory
- BSC 2011 Biodiversity
- BSC 2011L Biodiversity Laboratory
- PCB 3023 Cell Biology
- PCB 3023L Cell Biology Laboratory
- PCB 3063 General Genetics

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PCB 3063L General Genetics Laboratory  
MCB 3410 Cell Metabolism  
MCB 3020 General Microbiology  
MCB 3020L General Microbiology Laboratory  
MCB 4115 Determinative Bacteriology  
MCB 4115L Determinative Bacteriology Laboratory  
MCB 4320 Molecular Microbiology

## **Major Electives (12 credit hours)**

Students must choose 12 credit hours from the following list:

BCH 3053 General Biochemistry  
BOT 4434C Mycology  
BSC 4905 Independent Study (1 credit maximum)  
BSC 5931 Selected Topics in Biology\*  
MCB 4313 Industrial Microbiology and Biotechnology  
MCB 4223 Food Microbiology  
MCB 4404 Microbial Physiology and Genetics  
MCB 4404L Microbial Physiology and Genetics Laboratory  
MCB 4503 Virology  
MCB 4905 Microbiology Undergraduate Research (1 or 2 credit hours/semester, no more than 4 credits total)  
MCB 4933 Selected Topics in Microbiology\*  
MCB 4934 Seminar in Microbiology  
MCB 5206 Public Health and Pathogenic Microbiology  
MCB 5655 Applied and Environmental Biology  
MCB 5815 Medical Mycology  
PCB 4234 Principles of Immunology  
PCB 4671 Molecular Evolution  
ZOO 4753 Human Histology and Molecular Pathology of Disease

## **Shared Courses (12 credit hours)**

Twelve (12) credit hours of graduate credit may be shared as follows:

Three (3) credit hours of 5000-level elective structured courses for 3000- or 4000-level electives  
Nine (9) credit hours of 5000- or 6000-level elective courses for 3000- or 4000-level electives

## **Graduate Degree Requirements for the M.S. in Microbiology (30 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

Students admitted into the M.S. portion of the program must complete all the requirements for the M.S. degree (non-thesis) within three semesters of admission. The requirement is 30 credit hours of graduate work with at least 16 of these credit hours completed at the 6000-level; 26 credit hours must be formally structured courses; and at least 15 credit hours must be in Cell Biology, Microbiology and Molecular Biology courses. Students will be required to take three core courses from the list below as part of these 26 credit hours. Of the required 26 credit hours, nine (9) credit hours will be derived from the core- Cell Biology, Microbiology and Molecular Biology graduate courses listed below (see associated curriculum). These requirements can be partially met by up to 12 credit hours of graduate courses taken as undergraduates. Any graduate class taken outside of Cell Biology, Microbiology and Molecular Biology must be approved by the Cell Biology, Microbiology and Molecular Biology Graduate Director. Students should be aware that a B grade or better is required for every graduate class applied to the M.S. portion of their degree. In addition, students will be required to pass an oral qualifying exam based on a review paper submitted in their final semester. Students must form a committee as part of their action plan to complete their graduate work. This committee will be comprised of at least three Cell Biology, Microbiology and Molecular Biology faculty, and they will serve as the examination committee for the review paper required as part of the M.S. portion of their degree. Upon approval of that paper, students must successfully complete a comprehensive oral exam by their committee.

## **Comprehensive Oral Qualifying Examination**

A final comprehensive oral examination is required for all master's students. This examination is open to all departmental faculty. Students must take their comprehensive exam within two years of matriculation and the exam is normally taken after the completion of all formal course work. Thesis students must take the examination at least one semester before the thesis is presented. Any graduate work counted toward the requirement for the M.S. degree must be completed within five (5) years after matriculation.



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## **Accelerated B.A. in Physics and M.A.T. in Science Education**

### **Description**

This program intends for students to complete a B.A. in Physics (College of Arts and Sciences) and M.A.T. in Science Education (College of Education) over the span of five years. Students completing this program will be eligible for high school and/or middle school science teacher certification. Completion of this program requires students to complete 12 credit hours toward the M.A.T. in Science Education during their senior year in the Physics (B.A.) major.

This accelerated program shares 12 credits between already existing degrees:

- B.A. in Physics
- M.A.T. in Science Education

### **Target Students and Expected Outcomes**

The accelerated B.A. in Physics to M.A.T. in Science Education program is a collaborative effort between the College of Arts and Sciences and the College of Education. This program is an attractive and viable career path for students majoring in Physics that results in secondary science teacher certification. Students who complete this program receive the necessary science content and pedagogy coursework to be highly qualified physics teachers at the secondary level.

### **Admission Requirements**

For admission to the program, a student must:

1. Have completed 15 hours in the Physics major upon applying and thirty (30) semester hours in science (includes twenty-five (25) semester hours in physics plus 5 hours of upper level work in math or minor science content area) with associated laboratory experiences to be fully admitted as a graduate student in the M.A.T. Science Education Program. Evidence of successfully completing all sections of the General Knowledge Test (GKT) is also required for full admission to the graduate program
2. Have a minimum 3.0 GPA overall; and
3. Have a minimum undergraduate 3.25 GPA in the major.

### **Timeline and Benchmarks:**

1. To be considered for acceptance into the Accelerated B.A. Physics//M.A.T. Science Education program, students must have completed a minimum of 15 credit hours in the undergraduate Physics major.
2. Students must have a minimum undergraduate GPA of 3.0 overall, and a minimum GPA of 3.25 in the major and passing scores on all sections of the General Knowledge Test (GKT) to be eligible for the accelerated degree program. You can find information on the General Knowledge Test on the Florida Teacher Certification section of the following webpage: <http://www.fl.nesinc.com/>.
3. Following completion of a minimum of 15 hours in the undergraduate major, students may be considered for acceptance into the accelerated program through faculty nomination or student self-nomination, via submission of an *Accelerated Program Application Form*. Both B.A. and M.A.T. programs will review the applications and approve the nominations. All applications require the approval of the College of Education Graduate Program, the College of Arts and Sciences, and the USF Graduate School.
4. To be promoted to graduate status, students must meet all admission requirements of the M.A.T. in Science Education in the College of Education. Specifically, the following materials must be submitted:
  - a. Undergraduate transcripts; and evidence of possessing a degree in a science discipline (biology, chemistry, physics, geology, etc.) that is taught in a middle or high school, or comparable coursework in a science teaching field acceptable to the program faculty. Note, to teach secondary physics the state of Florida requires: A bachelor's or higher degree in physics or a bachelor's or higher degree with thirty (30) semester hours in science to include twenty-one (21) semester hours in physics with associated laboratory experiences.
  - b. Documentation of GKT scores.
5. Students must earn a minimum of a "B" (3.00) in all graduate courses. Failure to earn at least a "B" in a graduate course will result in academic review by the graduate program. Failure to maintain a minimum 3.0 GPA will result in academic probation, according to the procedures of the USF Office of Graduate Studies.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of upper-level coursework:

- SCE 5325 Methods of Middle Grades Science Education
- SCE 5337 Methods of Secondary Science Education
- SCE 6456 Teaching Secondary School Physical and Earth Science
- SCE 6938 Topics in Science Education: Field Practicum

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## **Undergraduate Degree Requirements for the B.A. in Physics (33 credit hours)**

**\*Please see Undergraduate Catalog for major-specific requirements**

### **Required Supporting Courses for the Major (20 credit hours)**

The following courses are prerequisite and supporting courses for this major. They are required for the major, but are not counted in the total hours for this major. The degree will not be awarded if these courses have not been taken by the end of the student's final semester.

CHM 2045 General Chemistry I  
CHM 2045L General Chemistry I Lab  
CHM 2046 General Chemistry II  
CHM 2046L General Chemistry II Lab  
MAC 2311 Calculus I **or** 2281 Engineering Calculus I  
MAC 2312 Calculus II **or** 2282 Engineering Calculus II  
MAC 2313 Calculus III **or** 2283 Engineering Calculus III

### **Core Courses (31 credit hours)**

PHY 2048 General Physics I  
PHY 2048L General Physics I Lab  
PHY 2049 General Physics II  
PHY 2049L General Physics II Lab  
PHY 3101 Modern Physics  
PHZ 3113 Mathematical Methods in Physics  
PHY 3822L Intermediate Lab  
PHY 3220 Classical Mechanics  
PHY 3323 Electricity and Magnetism I  
PHY 4823L Advanced Laboratory  
PHY 4930 Undergraduate Seminar  
PHY 4604 Introduction to Quantum Mechanics

### **Elective Courses (2 credit hours)**

Two (2) credit hours of Physics electives subject to approval of undergraduate advisor.

### **Shared Courses (12 credit hours)**

The following courses will satisfy 12 credit hours of upper-level coursework:

SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6938 Topics in Science Education: Field Practicum

## **Graduate Degree Requirements for the M.A.T. in Science Education (39 credit hours)**

**\*Please see Graduate Catalog for major-specific requirements**

All M.A.T. programs include as an admission requirement the passing of all sections of the General Knowledge Test (GKT). Applicants who can document they lived outside the state or country and did not have access to take the GKT before the application deadline may submit passing Praxis scores or GRE scores to be considered for admission. Whether admitted with passing Praxis scores or acceptable GRE scores, the applicant must submit passing scores on the GKT before the last day of classes of the semester of first enrollment, or admission to the College of Education will be revoked.

### **Core Courses (39 credit hours)**

EDF 6432 Foundations of Measurement  
ESE 5342 Teaching the Adolescent Learner  
ESE 5344 Classroom Management for a Diverse School and Society  
SCE 5325 Methods of Middle Grades Science Education  
SCE 5337 Methods of Secondary Science Education  
SCE 5564 Reading and Communication in Science Education  
SCE 6416 Teaching Secondary School Biology  
SCE 6456 Teaching Secondary School Physical and Earth Science  
SCE 6634 Current Trends in Secondary Science Education  
SCE 6938 Topics in Science Education: Field Practicum  
SCE 6947 Internship (PR: CI and passing scores of FTCE exam)

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TSL 5325 ESOL Strategies for Content Area Teachers

Comprehensive Exam

Student's participation in the internship experience in classes that correspond to the specific area in which he or she will be certified.

Passing score on the appropriate subject area exam.

Student's content degree or equivalent (an admission's requirement).

## **Comprehensive Examination**

A written narrative exam tailored to the individual student. Exam needs to be completed by two weeks before final exam week of the student's graduating semester. Exams will only be accepted during fall or spring semester, unless previous contract is established with the student's advisor.

## **Specialization Requirements for Certification in Separate Areas of Science (Grades 6-12):**

In order to be eligible for certification in a separate area of science, students must complete a minimum of thirty (30) semester hours in science to include twenty-one (21) semester hours in the area of desired specialization (chemistry, biology, physics, earth-space science).