• SCIENCE EDUCATION

Requirements for the B.S. Degree (BSB, BSC, BSY): In addition to the courses listed below, students must complete "Preliminary Requirements for Students entering Teacher Education Programs."

Prerequisites (State Mandated Common Prerequisites): These prerequisites must be met by transfer students as well as USF students. A grade of “C-” is the minimum acceptable grade.

- EDF X005 Introduction to Education
- EDG 2701 Teaching Diverse Populations
- EME 2040 Introduction to Educational Technology

- Nine (9) hours of Mathematics (to include College Algebra or above and Geometry)*
- Twelve (12) hours of Social Science (to include American History and General Psychology)
- Nine (9) hours of Natural Science (to include an Earth Science course, a Life Science course and a Physical Science course)
- One (1) Natural Science Course must have a lab component
- Six (6) hours of International or Multicultural Focus
- Nine (9) hours of English (to include Writing, Literature and Speech)
- Six (6) hours Humanities (to include Philosophy and Fine Arts)

*Only courses with the prefixes MGF, MTG, MAC, and STA will qualify for the courses in mathematics. MGF 1106 Liberal Arts Mathematics I meets the intent of the program approval rule with respect to the inclusion of geometry in the mathematics requirement.

For Biology Teacher Education -
- Biology with Lab
- Chemistry with Lab or Physics with Lab
- Electives in Science

For Chemistry Teacher Education -
- Chemistry with Lab
- Biology with Lab or Physics with Lab
- Electives in Science

For Physics Teacher Education -
- Physics with Lab
- Biology with Lab or Chemistry with Lab
- Electives in Science

Professional Education Core for all Tracks (32 credit hours):
The required courses in the professional education core are as follows:
- EDF 3214 Human Development and Learning
- EDF 3604 Social Foundations of Education (Exit)
- EDF 4620 Curriculum and Instruction
- EDF 4430 Measurement for Teachers
- EEX 4070 Integrating Exceptional Students in the Regular Classroom
- FLE 4365 ESOL Competencies and Strategies
- SSE 4940 Internship: Science Education
- SSE 4936 Senior Seminar in Science Education
- Classroom Management Course

Required Courses for All Science Education Majors (12 credit hours):
- SCE 4330 Teaching Methods in Secondary School Science
- For Biology Majors:
  - SCE 4237 or CHM 4070 or PHY 4031
- For Chemistry Majors:
  - SCE 4237 or BSC 4057 or PHY 4031
- For Physics Majors:
  - SCE 4237 or CHM 4070 or BSC 4057

Biology Education
Prerequisites (38 credit hours):
- BSC 2010 Biology I*
- BSC 2010L Biology I Lab*
- BSC 2011 Biology II*
- BSC 2011L Biology II Lab*
- CHM 2045, 2045L General Chemistry I and Lab*
- CHM 2046, 2046L General Chemistry II and Lab
- PHY 2048, 2048L General Physics I and Lab (with Calculus)
- PHY 2049, 2049L General Physics II and Lab* (with Calculus)
- PHY 2053, 2053L General Physics I Lab*
- PHY 2054, 2054L General Physics II Lab
- Science Elective (Earth Science Only)
- BSC 2093 Human Anatomy Physiology
- CHM 2046 General Chemistry II with lab
- PHY 2054 General Physics II with lab

Specialization (33 credit hours):
- BSC 2093 Human Anatomy and Physiology*
- PCB 3063 General Genetics
- PCB 3023, 3023L Cell Biology and Lab
- PCB 3043, 3043L Principles of Ecology and Lab
- PCB 4674 Organic Evolution
- MCB 3030C Introduction to Microbiology
- BSC 4057 Environmental Issues (Exit)
- SCE 4320 Teaching Methods in Middle Grades Science
- SCE 4330 Teaching Methods in Secondary School Science
- SCE 4305 Reading and Communication Skills in the Science Classroom
- CHM 4070 Historical Perspectives in Chemistry
- PHY 4031 Great Themes in Physics

Additional Requirements
- MAC 2281 Engineering Calculus I

Chemistry Education
Prerequisites (39 credit hours):
- CHM 2045 General Chemistry I*
- CHM 2045L General Chemistry Lab*
- CHM 2046 General Chemistry II*
- CHM 2046L General Chemistry II Lab*
- BSC 2010, 2010L Biology I and Lab*
- BSC 2011, 2011L Biology II and Lab*
- PHY 2048, 2048L Physics I and Lab* (with Calculus)
- PHY 2049, 2049L Physics II and Lab* (with Calculus)
or
PHY 2053, 2053L  Physics I and Lab* 8
and
PHY 2054, 2054L  Physics II and Lab* 8
Science Elective (Earth Science Only) 3

Specialization (32 credit hours):
CHM 2210, 2210L  Organic Chemistry and Lab 4
CHM 3120C  Elementary Analytical Chemistry 3
CHM 3400  Elementary Physical Chemistry I 3
CHM 3610, 3610L  Intermediate Inorganic Chemistry and Lab 4
CHM 4070  Historical Perspectives in Chemistry 3
BCH 3023  Introductory Biochemistry 3
SCE 4320  Teaching Methods in Middle Grades Science 3
SCE 4305  Reading and Communication Skills in Science 3
SCE 4237  Science, Technology, Society Interaction 3
or
BSC 4057  Environmental Issues 3
or
PH 4031  Great Themes in Physics 3

Physics Education
Prerequisites (33 credit hours):
BSC 2010, 2010L  Biology I and Lab* 8
or
CHM 2045, 2045L  General Chemistry I and Lab* 8
and
CHM 2046, 2046L  Chemistry II and Lab* 8
PHY 2048, 2048L  General Physics I and Lab* 8
(with Calculus)
and
PHY 2049, 2049L  General Physics II and Lab* 8
(with Calculus)
or
PHY 2053, 2053L  General Physics I and Lab* 8
and
PHY 2054, 2054L  General Physics II and Lab* 8
Science Elective (Earth Science Only) 3

Specialization (30 credit hours):
PHY 2020  Conceptual Physics 3
PHY 3101  Modern Physics 3
PHY 3221  Mechanics I 3
PHY 3323C  Electricity and Magnetism 3
PHY 4031  Great Themes in Physics 3
Physics Electives (Select from PHY3 to PHY5, PHZ3 to PHZ5) 3
Computer Applications in Physics 3
SCE 4320  Teaching Methods in Middle Grades Science 3
SCE 4330  Teaching Methods in Secondary School Science 3
SCE 4305  Reading and Communication Skills in the Science Classroom 3
SCE 4237  Science, Technology, Society Interaction 3
or
CHM 4070  Historical Perspectives in Chemistry 3
or
BSC 4057  Environmental Issues 3

*May be part of General Education Requirements