

SCIENCE, MATHEMATICS, AND TECHNOLOGY: A.A., A.S.

Students of Science, Mathematics and Technology will explore the natural sciences (physics, chemistry and biology), mathematics, computer science and a range of technological, applied-science and health-related fields. Students will study the fundamental laws and concepts of their concentration, develop their knowledge of scientific methodology and learn the skills important for successful practice and communication, whether they are entering a new field or honing skills in their current occupation. Students will sharpen skills in critical reading and thinking, as, together with a faculty mentor, create a program to meet your specific needs and goals.

Degree programs in Science, Mathematics and Technology offer students the opportunity to develop individualized degree plans based on their intellectual, professional, and personal interests. General program guidelines can be found on the "Program Details" tab, and students will work with an academic mentor to choose courses that meet the guidelines and address each student's individual interests. Students can also work with their academic mentors to identify applicable transfer credit, prior college-level learning, and possible course equivalencies. Working with a mentor and using Empire State University's educational planning process, students can develop a specialized concentration in Science, Mathematics and Technology by following the general program guidelines as well as any applicable concentration guidelines. Students may also develop their own concentrations.

For more information about general undergraduate degree requirements, please visit Earning an Undergraduate Degree (<http://catalog.sunyempire.edu/undergraduate/earning-undergraduate-degree/>).

For sample degree programs and other degree planning resources, please visit the Department of Computer Science and Technology (<https://www.esc.edu/computer-science-tech/degree-planning-resources/>), Mathematics (<https://www.esc.edu/mathematics/degree-planning-resources/>), or Natural Sciences (<https://www.esc.edu/natural-sciences/degree-planning-resources/>) Degree Planning Resources web page.

Please note:

- Empire State University does not offer degrees in engineering. You may study the mathematics and the theoretical sciences that comprise the traditional engineering curriculum, but the title of the degree cannot contain the word "engineering"
- In the sciences there are many opportunities for experimentation, research, and analytical work. These include virtual labs, courses with lab kits, field experience courses and residencies. Students can also engage in scientific internships and pursue college credit for prior learning in their fields. Students should be aware that they may need specific laboratory and/or field courses to meet entrance requirements for graduate studies; they should confirm such requirements with these institutions

Taking individual courses as a nondegree nonmatriculated student also is possible and will offer you the same range and depth of courses and rigorous standards as matriculated undergraduate students.

Program Details

These area of study guidelines address the broad needs of students interested in pursuing degrees in Science, Mathematics, and Technology. Degree programs at the associate level must address these five program outcomes, minimally at the introductory level. Foundational knowledge in their field prepares students for progression to the bachelor's degree.

Students should refer to the university's concentration guidelines for program outcomes specific to their fields. Otherwise, students must research their field and describe academic and professional expectations for their concentration in their rationale essay.

Knowledge in science, mathematics, and technology is continually evolving. Thus, degree programs should demonstrate currency in their fields. In addition, students are expected to develop life-long learning skills and engage in ongoing inquiry to acquire new knowledge and maintain currency.

Students earning degrees in Science, Mathematics, and Technology will achieve the following program outcomes:

Program Details for Computer Science and Technology

Foundation #1: Breadth and Depth of Knowledge

| Code | Title | Credits |
|-----------|--|---------|
| CSCI 1010 | Introduction to Computers | 4 |
| CSCI 1020 | Introduction to Networks | 4 |
| CSCI 3000 | Computer Operations & Security | 4 |
| CSCI 4000 | Advanced Computing Models: Virtualization Cloud & Mobile Computing | 4 |
| CSCI 4005 | Software Engineering | 4 |
| CSCI 4015 | Theory of Computation | 4 |
| INFS 2000 | Exploring the Disciplines: Information Systems: Introductory | 2 |
| INFS 3010 | Database Systems | 4 |
| INFT 2020 | Introduction to Digital Crime & Digital Terrorism | 4 |
| INFT 3010 | Advanced Digital Crime & Digital Terrorism | 4 |
| INFT 3040 | Social Media Management | 4 |
| INFT 3050 | Systems Analysis & Design | 3-4 |
| INFT 4005 | Business Continuity Planning & Disaster Recovery | 4 |
| INFT 4005 | Business Continuity Planning & Disaster Recovery | 4 |

Foundation #2: Problem Solving and Critical Thinking

| Code | Title | Credits |
|-----------|--|---------|
| CSCI 1015 | Introduction to Database Design | 4 |
| CSCI 1020 | Introduction to Networks | 4 |
| CSCI 2010 | Introduction to C++ & OOP | 4 |
| CSCI 2015 | Introduction to Object-Oriented Programming: Java | 4 |
| CSCI 3000 | Computer Operations & Security | 4 |
| CSCI 3005 | Computer Organization & Architecture | 4 |
| CSCI 4000 | Advanced Computing Models: Virtualization Cloud & Mobile Computing | 4 |
| INFS 1002 | Computer Applications for Data Processing | 2 |
| INFS 2010 | Introduction to Data Management Tools | 4 |
| INFT 2020 | Introduction to Digital Crime & Digital Terrorism | 4 |

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| INFT 3005 | Data Analytics | 4 |
| INFT 3010 | Advanced Digital Crime & Digital Terrorism | 4 |
| INFT 3015 | Communications Technology Convergence | 4 |
| INFT 3025 | Data Communications & Networks | 4 |
| INFT 3040 | Social Media Management | 4 |
| INFT 3045 | Social, Professional & Ethical Issues in Computing | 3,4 |
| INFT 3055 | Technology for Digital Marketing | 4 |
| INFT 3065 | Web Systems Development | 3-4 |
| INFT 4020 | Technology in Mathematics Education | 4 |
| MGIS 2000 | The Internet of Things (IoT) Essentials | 4 |
| MGIS 3000 | Business Intelligence: Practices, Technologies, Management | 4 |
| MGIS 3005 | The Business of the Internet of Things (IoT) | 4 |
| MGIS 3010 | Management Information Systems | 4 |
| or BUSN 3122 | Management Information Systems | |
| MGIS 4015 | Project Management in IT / IS | 4 |
| MGIS 4020 | IT Strategy and Innovations | 4 |

Foundation #3: Methodological, Quantitative, and Digital Expertise

| Code | Title | Credits |
|--------------|--|---------|
| CSCI 1015 | Introduction to Database Design | 4 |
| CSCI 2010 | Introduction to C++ & OOP | 4 |
| CSCI 2015 | Introduction to Object-Oriented Programming: Java | 4 |
| CSCI 3005 | Computer Organization & Architecture | 4 |
| CSCI 4005 | Software Engineering | 4 |
| CSCI 4015 | Theory of Computation | 4 |
| INFS 2010 | Introduction to Data Management Tools | 4 |
| INFS 3010 | Database Systems | 4 |
| INFT 1005 | Introduction to Web Publishing | 4 |
| INFT 2010 | Introduction to Web Publishing with Adobe Dreamweaver Creative Cloud | 4 |
| INFT 3005 | Data Analytics | 4 |
| INFT 3015 | Communications Technology Convergence | 4 |
| INFT 3020 | Cyber Crime & Computer Forensics | 3-4 |
| INFT 3025 | Data Communications & Networks | 4 |
| INFT 3030 | Human-Computer Interaction | 3-4 |
| INFT 3035 | Project Management | 4 |
| INFT 3050 | Systems Analysis & Design | 3-4 |
| INFT 3055 | Technology for Digital Marketing | 4 |
| INFT 3065 | Web Systems Development | 3-4 |
| INFT 4005 | Business Continuity Planning & Disaster Recovery | 4 |
| INFT 4015 | Information Assurance | 4 |
| INFT 4020 | Technology in Mathematics Education | 4 |
| MGIS 3000 | Business Intelligence: Practices, Technologies, Management | 4 |
| MGIS 3005 | The Business of the Internet of Things (IoT) | 4 |
| MGIS 3010 | Management Information Systems | 4 |
| or BUSN 3122 | Management Information Systems | |
| MGIS 4005 | Information Security & Policy | 4 |
| MGIS 4015 | Project Management in IT / IS | 4 |
| MGIS 4020 | IT Strategy and Innovations | 4 |

Foundation #4: Communication

| Code | Title | Credits |
|-----------|--|---------|
| CSCI 1010 | Introduction to Computers | 4 |
| INFS 2000 | Exploring the Disciplines: Information Systems: Introductory | 2 |
| INFS 2005 | Computer Information Systems | 4 |
| INFS 2010 | Introduction to Data Management Tools | 4 |
| INFT 1005 | Introduction to Web Publishing | 4 |
| INFT 2020 | Introduction to Digital Crime & Digital Terrorism | 4 |
| MGIS 2000 | The Internet of Things (IoT) Essentials | 4 |
| INFT 3000 | Academic Planning / Technology and Society | 4 |
| STSO 1005 | Introduction to Science & Technology Studies | 4 |

Foundation #5: Social Responsibility

| Code | Title | Credits |
|-----------|--|---------|
| INFT 2005 | Green Computing | 4 |
| INFT 3000 | Academic Planning / Technology and Society | 4 |
| INFT 3045 | Social, Professional & Ethical Issues in Computing | 3,4 |

Program Details for Mathematics**FOUNDATION #1: BREADTH AND DEPTH OF KNOWLEDGE**

| Code | Title | Credits |
|-----------|----------------------------------|---------|
| MATH 1040 | Algebra | 3,4 |
| MATH 1140 | Precalculus | 4 |
| MATH 2015 | Mathematics for Game Programmers | 4 |
| MATH 2140 | Calculus I | 4 |
| MATH 2141 | Calculus II | 4 |
| MATH 3005 | History of Mathematics: Advanced | 4 |
| MATH 3010 | Linear Algebra | 4 |
| MATH 3015 | Discrete Mathematics | 4 |
| MATH 3025 | Math Modeling | 4 |
| MATH 3040 | Calculus III | 4 |
| MATH 3065 | Ordinary Differential Equations | 4 |
| MATH 4005 | Number Theory | 4 |
| MATH 4010 | Abstract Algebra I: Group Theory | 4 |

FOUNDATION #2: PROBLEM SOLVING AND CRITICAL THINKING

| Code | Title | Credits |
|-----------|--------------------------------------|---------|
| MATH 1000 | College Mathematics | 4 |
| MATH 1005 | Contemporary Mathematics | 4 |
| MATH 1025 | Quantitative Reasoning | 4 |
| MATH 1040 | Algebra | 3,4 |
| MATH 1050 | Mathematics for Business | 4 |
| MATH 1065 | Statistics | 3-4 |
| MATH 1100 | Introduction to Discrete Mathematics | 4 |
| MATH 1110 | Geometry | 4 |
| MATH 1150 | Calculus for Business | 4 |
| MATH 2005 | History of Mathematics: Introductory | 4 |
| MATH 2010 | Introduction to Proof & Logic | 4 |
| MATH 2015 | Mathematics for Game Programmers | 4 |
| MATH 3010 | Linear Algebra | 4 |
| MATH 3015 | Discrete Mathematics | 4 |

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| MATH 3045 | Mathematical Proofs | 4 |
| MATH 4005 | Number Theory | 4 |
| MATH 4025 | Complex Variables | 4 |
| MATH 4030 | Real Analysis | 4 |

FOUNDATION #3: METHODOLOGICAL, QUANTITATIVE, AND DIGITAL EXPERTISE

| Code | Title | Credits |
|-----------|--------------------------------------|---------|
| MATH 1000 | College Mathematics | 4 |
| MATH 1005 | Contemporary Mathematics | 4 |
| MATH 1025 | Quantitative Reasoning | 4 |
| MATH 1050 | Mathematics for Business | 4 |
| MATH 1055 | Mathematics for Elementary Teachers | 4 |
| MATH 1065 | Statistics | 3-4 |
| MATH 1100 | Introduction to Discrete Mathematics | 4 |
| MATH 1110 | Geometry | 4 |
| MATH 1150 | Calculus for Business | 4 |
| MATH 2140 | Calculus I | 4 |
| MATH 2141 | Calculus II | 4 |
| MATH 3010 | Linear Algebra | 4 |
| MATH 3025 | Math Modeling | 4 |
| MATH 3040 | Calculus III | 4 |
| MATH 3065 | Ordinary Differential Equations | 4 |
| MATH 4005 | Number Theory | 4 |
| MATH 4025 | Complex Variables | 4 |

FOUNDATION #4: COMMUNICATION

| Code | Title | Credits |
|-----------|--------------------------------------|---------|
| MATH 1140 | Precalculus | 4 |
| MATH 2005 | History of Mathematics: Introductory | 4 |
| MATH 2010 | Introduction to Proof & Logic | 4 |
| MATH 3005 | History of Mathematics: Advanced | 4 |
| MATH 3045 | Mathematical Proofs | 4 |
| MATH 4010 | Abstract Algebra I: Group Theory | 4 |
| MATH 4030 | Real Analysis | 4 |

FOUNDATION #5: SOCIAL RESPONSIBILITY

| Code | Title | Credits |
|-----------|--------------------------------------|---------|
| MATH 2005 | History of Mathematics: Introductory | 4 |
| MATH 3005 | History of Mathematics: Advanced | 4 |

Program Details for Natural Sciences

FOUNDATION #1: BREADTH AND DEPTH OF KNOWLEDGE

| Code | Title | Credits |
|--------------|---------------------|---------|
| BIOL 1000 | Survey of Biology | 4 |
| BIOL 1002 | Human Biology | 4 |
| BIOL 1004 | Human Nutrition | 4 |
| BIOL 1006 | Genomics & You | 4 |
| or BIOL 1210 | Biology I: Lecture | |
| BIOL 1200 | Biology I with Lab | 4 |
| or BIOL 1212 | Biology II: Lecture | |
| BIOL 1201 | Biology II with Lab | 4 |

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| BIOL 1204 | Introduction to Cell Biology & Genetics | 4 |
| BIOL 1205 | Introduction to Organismal Biology | 4 |
| BIOL 1206 | Introduction to Population Biology | 4 |
| or BIOL 1310 | Anatomy and Physiology I: Lecture | |
| BIOL 1304 | Anatomy & Physiology I with Lab | 4 |
| or BIOL 1312 | Anatomy & Physiology II: Lecture | |
| BIOL 1305 | Anatomy & Physiology II with Lab | 4 |
| BIOL 1400 | Evolution & Ecology | 4 |
| BIOL 1402 | Introduction to Biological Anthropology | 4 |
| BIOL 1404 | Wildlife Conservation | 4 |
| CHEM 1002 | Chemistry in Context | 4 |
| or CHEM 1210 | Chemistry I: Lecture | |
| CHEM 1205 | Chemistry I with Lab | 4 |
| or CHEM 1210 | Chemistry I: Lecture | |
| CHEM 1206 | Chemistry II with Lab | 4 |
| or CHEM 1212 | Chemistry II: Lecture | |
| CHEM 3210 | Organic Chemistry I with Lab | 4 |
| or CHEM 3220 | Organic Chemistry I | |
| ENSC 1000 | Earth Science | 4 |
| ENSC 1002 | Energy: The Issues & the Science | 4 |
| ENSC 1004 | Global Climate Change | 4 |
| ENSC 1006 | Introduction to Ecology & Sustainability | 4 |
| ENSC 1200 | Environmental Science | 4 |
| ENSC 2000 | Principles of Environmental Sustainability | 4 |
| GEOL 1200 | Introduction to Geology | 4 |
| GEOL 2200 | Historical Geology with Lab | 4 |
| GSCI 1000 | Integrated Sciences | 4 |
| GSCI 1004 | Introduction to Forensic Science | 4 |
| GSCI 1006 | The Science of Cooking | 4 |
| GSCI 1020 | Physical Science | 4 |
| GSCI 1500 | Science Colloquium | 4 |
| HSCI 1010 | Introduction to Epidemiology | 4 |
| HSCI 1200 | Medical Terminology | 4 |
| PHYS 1000 | Conceptual Physics | 4 |
| PHYS 1100 | Introductory Astronomy | 4 |
| or PHYS 1210 | Physics I: Lecture | |
| PHYS 1200 | Physics I with Lab | 4 |
| or PHYS 1212 | Physics II: Lecture | |

FOUNDATION #2: PROBLEM SOLVING AND CRITICAL THINKING

| Code | Title | Credits |
|--------------|---|---------|
| BIOL 1402 | Introduction to Biological Anthropology | 4 |
| BIOL 1404 | Wildlife Conservation | 4 |
| BIOL 2002 | Populations & Diseases | 4 |
| BIOL 2004 | Bioterrorism | 2 |
| BIOL 2208 | Animal Behavior | 4 |
| or BIOL 2210 | Inside the Animal Mind: Insights into Animal Behavior Ecology & Evolution | |
| BIOL 2200 | Microbiology with Lab | 4 |
| or BIOL 2220 | Microbiology: Lecture | |
| BIOL 2201 | Tropical Ecology | 4 |
| BIOL 2204 | Ethnobotany | 4 |
| BIOL 3200 | The Biology of Being Human | 4 |

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| BIOL 3204 | Genetics | 4 |
| BIOL 3206 | Cell Biology | 4 |
| BIOL 3208 | Molecular Biology | 4 |
| BIOL 3210 | Biology of Microorganisms | 4 |
| BIOL 3212 | Biology of the Brain | 4 |
| BIOL 3214 | Human Physiology | 4 |
| BIOL 3302 | Evolution | 4 |
| BIOL 3304 | Conservation Biology | 4 |
| BIOL 3306 | Ecology | 4 |
| BIOL 3308 | Plant Ecology | 4 |
| BIOL 3502 | Cellular and Molecular Neuroscience | 4 |
| BIOL 3602 | Phytochemistry | 4 |
| BIOL 3604 | Plant Physiology | 4 |
| BIOL 4102 | Diseases of the Brain | 4 |
| BIOL 4206 | Immunology | 4 |
| BIOL 4310 | Aquatic Biology & Ecology | 4 |
| BIOL 4300 | Herpetology | 4 |
| BIOL 4302 | Animal Learning | 4 |
| BIOL 4304 | Ornithology | 4 |
| BIOL 4306 | Mammalogy | 4 |
| BIOL 4308 | Marine Mammalogy | 4 |
| BIOL 4400 | Principles of Pharmacology | 4 |
| BIOL 4408 | Molecular Biotechnology | 4 |
| BIOL 4410 | Plant Biotechnology | 4 |
| CHEM 3210 | Organic Chemistry I with Lab | 4 |
| or CHEM 3220 | Organic Chemistry I | |
| CHEM 3221 | Organic Chemistry II | 4 |
| CHEM 3300 | Physical Chemistry I | 4 |
| CHEM 3302 | Physical Chemistry II | 4 |
| CHEM 3400 | Biochemistry | 4 |
| CHEM 4200 | Inorganic Chemistry I | 4 |
| CHEM 4201 | Inorganic Chemistry II | 4 |
| CHEM 4300 | Environmental Chemistry I | 4 |
| CHEM 4301 | Environmental Chemistry II | 4 |
| CHEM 4400 | Biochemistry I | 4 |
| CHEM 4401 | Biochemistry II | 4 |
| ENSC 3000 | Meteorology | 4 |
| ENSC 3002 | Global Climates | 4 |
| ENSC 3004 | Dendrology | 2 |
| ENSC 3006 | Natural Disasters | 4 |
| ENSC 3008 | National Parks of the US: Geology Ecology & History | 4 |
| ENSC 3200 | Urban Ecology | 4 |
| ENSC 3202 | Forest Ecology | 4 |
| ENSC 3300 | Soil Science | 4 |
| ENSC 4202 | Biogeography | 4 |
| ENSC 4600 | Ecology & Earth Systems Field Research | 4 |
| ENSC 4800 | Environmental Science Capstone | 4 |
| GEOL 3200 | Geomorphology | 4 |
| GEOL 3202 | Hydrology | 4 |

FOUNDATION #3: METHODOLOGICAL, QUANTITATIVE, AND DIGITAL EXPERTISE

| Code | Title | Credits |
|--------------|-------------------------------------|---------|
| BIOL 2201 | Tropical Ecology | 4 |
| BIOL 2208 | Animal Behavior | 4 |
| or BIOL 2220 | Microbiology: Lecture | |
| BIOL 2400 | Plant Biology | 4 |
| BIOL 3200 | The Biology of Being Human | 4 |
| BIOL 3204 | Genetics | 4 |
| BIOL 3206 | Cell Biology | 4 |
| BIOL 3208 | Molecular Biology | 4 |
| BIOL 3210 | Biology of Microorganisms | 4 |
| BIOL 3212 | Biology of the Brain | 4 |
| BIOL 3214 | Human Physiology | 4 |
| BIOL 3302 | Evolution | 4 |
| BIOL 3304 | Conservation Biology | 4 |
| BIOL 3306 | Ecology | 4 |
| BIOL 3308 | Plant Ecology | 4 |
| BIOL 3310 | Tropical Ecology | 4 |
| BIOL 3400 | Marine Biology | 4 |
| BIOL 3404 | Primate Behavioral Ecology | 4 |
| BIOL 3408 | Advanced Biological Anthropology | 4 |
| BIOL 3502 | Cellular and Molecular Neuroscience | 4 |
| BIOL 3602 | Phytochemistry | 4 |
| BIOL 3604 | Plant Physiology | 4 |
| BIOL 4102 | Diseases of the Brain | 4 |
| BIOL 4206 | Immunology | 4 |
| BIOL 4300 | Herpetology | 4 |
| BIOL 4302 | Animal Learning | 4 |
| BIOL 4304 | Ornithology | 4 |
| BIOL 4306 | Mammalogy | 4 |
| BIOL 4308 | Marine Mammalogy | 4 |
| BIOL 4400 | Principles of Pharmacology | 4 |
| BIOL 4408 | Molecular Biotechnology | 4 |
| BIOL 4410 | Plant Biotechnology | 4 |
| CHEM 3210 | Organic Chemistry I with Lab | 4 |
| or CHEM 3220 | Organic Chemistry I | |
| CHEM 3221 | Organic Chemistry II | 4 |
| CHEM 3400 | Biochemistry | 4 |
| CHEM 3300 | Physical Chemistry I | 4 |
| CHEM 3302 | Physical Chemistry II | 4 |
| CHEM 4200 | Inorganic Chemistry I | 4 |
| CHEM 4201 | Inorganic Chemistry II | 4 |
| CHEM 4300 | Environmental Chemistry I | 4 |
| CHEM 4301 | Environmental Chemistry II | 4 |
| CHEM 4400 | Biochemistry I | 4 |
| CHEM 4401 | Biochemistry II | 4 |
| CSCI 1015 | Introduction to Database Design | 4 |
| ENSC 3000 | Meteorology | 4 |
| ENSC 3002 | Global Climates | 4 |
| ENSC 3004 | Dendrology | 2 |
| ENSC 3006 | Natural Disasters | 4 |

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| ENSC 3008 | National Parks of the US: Geology Ecology & History | 4 |
| ENSC 3200 | Urban Ecology | 4 |
| ENSC 3202 | Forest Ecology | 4 |
| ENSC 3300 | Soil Science | 4 |
| ENSC 4202 | Biogeography | 4 |
| ENSC 4600 | Ecology & Earth Systems Field Research | 4 |
| ENSC 4800 | Environmental Science Capstone | 4 |
| GEOL 3200 | Geomorphology | 4 |
| GEOL 3202 | Hydrology | 4 |
| GSCI 2200 | GPS & The New Geography | 4 |
| GSCI 3200 | Geographic Information Systems | 4 |
| GSCI 4200 | Materials Science | 4 |
| HSCI 3200 | Health Informatics | 4 |
| HSCI 4200 | Epidemiology | 4 |

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| HSCI 1010 | Introduction to Epidemiology | 4 |
| HSCI 4200 | Epidemiology | 4 |

Learning Outcomes

Foundation 1: Breadth and Depth of Knowledge

Foundation 2: Problem Solving and Critical Thinking

Foundation 3: Methodological, Quantitative, and Digital Expertise

Foundation 4: Communication

Foundation 5: Social Responsibility

Detailed Foundation Learning Outcomes

- Foundation 1a: Students will be able to demonstrate a conceptual understanding of their field by articulating foundational knowledge, including key concepts, methodologies, and theories.
- Foundation 1b: Students will be able to demonstrate a conceptual understanding of their field by explaining how their program includes breadth of knowledge in their subject area.
- Foundation 2a: Students will be able to demonstrate skills to analyze and solve unique situations and problems by designing, implementing, and evaluating strategies for answering open-ended questions for which solutions are not immediately evident.
- Foundation 2b: Students will be able to demonstrate skills to analyze and solve unique situations and problems by thinking critically and objectively about problems and identifying the best solutions.
- Foundation 3a: Students will be able to demonstrate a working knowledge of investigative, quantitative, and technological approaches and skills to engage in their fields by applying the quantitative and technical skills necessary to engage in their fields.
- Foundation 3b: Students will be able to demonstrate a working knowledge of investigative, quantitative, and technological approaches and skills to engage in their fields by evaluating information, analyzing data, and utilizing technologies relevant to their disciplines.
- Foundation 4: Students will be able to demonstrate the skills needed to communicate scientific, mathematical, and/or technical concepts to a variety of audiences.
- Foundation 5: Students will be able to demonstrate an awareness of the societal context in which science, mathematics, and technology operate by demonstrating a social awareness in order to understand the interplay between their field and society.

FOUNDATION #4: COMMUNICATION

| Code | Title | Credits |
|---------------------------|--|---------|
| BIOL 2208 or BIOL 2210 | Animal Behavior Inside the Animal Mind: Insights into Animal Behavior Ecology & Evolution | 4 |
| BIOL 2400 | Plant Biology | 4 |
| BIOL 3502 | Cellular and Molecular Neuroscience | 4 |
| BIOL 3604 | Plant Physiology | 4 |
| BIOL 4102 | Diseases of the Brain | 4 |
| BIOL 4302 | Animal Learning | 4 |
| BIOL 4400 | Principles of Pharmacology | 4 |
| ENSC 1000 | Earth Science | 4 |
| ENSC 4600 | Ecology & Earth Systems Field Research | 4 |
| ENSC 4800 | Environmental Science Capstone | 4 |
| GEOL 3202 | Hydrology | 4 |
| GSCI 1500 | Science Colloquium | 4 |

FOUNDATION #5: SOCIAL RESPONSIBILITY

| Code | Title | Credits |
|-----------|---|---------|
| BIOL 1404 | Wildlife Conservation | 4 |
| BIOL 2000 | Bioethics in Modern Medicine | 4 |
| BIOL 2002 | Populations & Diseases | 4 |
| BIOL 2004 | Bioterrorism | 2 |
| BIOL 3304 | Conservation Biology | 4 |
| BIOL 3306 | Ecology | 4 |
| BIOL 4700 | Contemporary Topics in Biology | 4 |
| ENSC 1002 | Energy: The Issues & the Science | 4 |
| ENSC 1004 | Global Climate Change | 4 |
| ENSC 1006 | Introduction to Ecology & Sustainability | 4 |
| ENSC 2000 | Principles of Environmental Sustainability | 4 |
| ENSC 3006 | Natural Disasters | 4 |
| ENSC 3008 | National Parks of the US: Geology Ecology & History | 4 |
| ENSC 3304 | Environmental Health | 4 |
| ENSC 3200 | Urban Ecology | 4 |
| ENSC 4200 | Contemporary Environmental Issues | 4 |
| ENST 3005 | Community Supported Agriculture | 4 |
| ENST 3010 | Sustainability & Agriculture | 4 |