General Information - Undergraduate

# Admissions - Undergraduate

## Admissions Policy

The admissions policy at Rhode Island College is formulated by a committee of faculty, administrators and students. Generally, the most important factor in an admissions decision is the applicant’s academic credentials. However, since the college recognizes the value of special backgrounds and experiences, it bases its final decision on the applicant’s overall record. Additional factors considered include recommendations, academic potential, school and community activities, and—for certain applicants—standardized test scores. Students are selected without regard to race, color, creed, national or ethnic origin, gender, religion, disability, age, sexual orientation, gender identity or expression, marital status, citizenship, status as a special disabled veteran, recently separated veteran, Vietnam Era veteran or any other veteran who served in active duty. Applicants to Rhode Island College are expected to adhere to standards of academic honesty in completing the application process. By signing the application, the applicant attests that the information provided is complete and accurate to the best of the applicant’s knowledge. The admissions office may withdraw an application or rescind the acceptance offered, if a violation of academic honesty is discovered.

## Freshman Applicants

### Admission Requirements - Undergraduate

To qualify for admission, freshman applicants must possess a diploma from an accredited secondary school or expect to receive one before enrolling at Rhode Island College. Applicants' secondary school programs must include at least 18 units of college preparatory academic subjects, with the following requirements:

•     **4 units of college preparatory English.**

•     **3 units of mathematics, including algebra I, algebra II, and geometry**. Students planning to enter education, nursing, management, mathematics or the sciences are encouraged to complete four years of mathematics.

•     **2 units of history or social science**. Students should study U.S. history and government and the social sciences, which might include anthropology, economics, geography, political science and sociology.

•     **2 units of laboratory sciences**. Students planning to enter a technical, scientific or health-related field are strongly encouraged to complete courses in biology, chemistry and physics.

•     **2 units of the same foreign language**. College-bound students are encouraged to complete three years of a foreign language.

•     **5 units of diversified college preparatory courses.**  Appropriate courses may include additional units from the arts, mathematics, language, social sciences, science or other college preparatory electives offered by the high school.

Exceptions to some unit requirements may be allowed. Requests should be made in writing to the director of admissions.

An individual assessment will be made of each student participating in ESL study while attending secondary school. Such students are encouraged to submit documentation of their current level of proficiency in English. Also, their secondary schools are encouraged to provide such additional information as transcript annotations designating the college preparatory level for appropriate ESL sections, course descriptions and other indices of English proficiency sufficient to succeed in college.

Rhode Island College supports the efforts of secondary school officials and governing bodies to have their schools achieve regional accreditation status to provide reliable assurance of the quality of the educational preparation of applicants for admission.

### Application Procedures

Rhode Island College is a member of the The Common Application Group. To be considered for admission, freshman applicants must submit the following materials to the Office of Undergraduate Admissions by March 15 for fall semester enrollment or by November 15 for spring semester enrollment:

1.    **A completed application accompanied by a $50 nonrefundable application fee.**  Students may apply online at www.commonapp.org.

2.    **Official high school transcript(s) and academic recommendations.**  The applicant must arrange to have these materials forwarded to the admissions office. Applicants may be required to submit senior midyear grades for review.

**Test Optional Policy**
Rhode Island College does not require applicants to submit test results for initial admission to the College. If an applicant believes the results from the SAT or ACT supports their candidacy for admission, Rhode Island College encourages candidates to submit them. Candidates to Rhode Island College’s teacher education programs in the Feinstein School of Education and Human Development must submit standardized test results for consideration.

Students who reside in the United States but have secondary school (or equivalent) credentials from another country are not required to take the SAT. However, such students, if they have lived in the United States for less than five years, must have a minimum score of 79 on the Web-based version of the Test of English as a Foreign Language (TOEFL), 213 on the computer-based version or 550 on the paper-based version. The international English Language Testing System (IELTS) exam is accepted in lieu of the TOEFL. The minimum required score is 6.5.

Scores on the SAT Subject Tests (formerly Achievement Tests) may be submitted for additional consideration. These scores are not a requirement. (See Proficiency and Advanced Placement.)

Interviews are encouraged and may be required of some applicants. Applications are considered on a rolling basis and are acted upon as soon as all materials are received.

Admissions staff are available to answer any questions a prospective student may have about admission or about the college, and inquiries are welcomed. Campus tours are scheduled regularly; appointments may be made online or through the Office of Undergraduate Admissions.

## Transfer Applicants

### Admission Requirements - Undergraduate Transfer

Rhode Island College accepts transfer applications. To be considered for transfer admission, a minimum of 24 credit hours in a diversified program of study is required. Transfer applicants for January admission must have completed 24 credit hours by September 1, prior to the January semester. Applicants for September admission must have completed 24 credit hours by June 1, prior to the September semester. Students must also meet grade point average requirements as follows: a minimum GPA of 2.00 with 24 or more earned college credits.

### Application Procedures

Rhode Island College is a member of The Common Application group. To be considered for admission, transfer applicants must submit the following materials to the Office of Undergraduate Admissions by June 1 for fall semester enrollment or by November 15 for spring semester enrollment:

1.    **A completed application accompanied by a $50 nonrefundable application fee.**  Students may apply online at www.commonapp.org.

2.    **Official transcripts from all colleges attended, whether or not you expect or desire credit for such work**. Final spring semester transcripts are due by July 1. Students who complete summer courses before matriculation at Rhode Island College must arrange to send official transcripts to the admissions office. Credit from other colleges or universities will not be evaluated or posted until official transcripts are received.

3.    **Official high school transcripts** of students who will have earned fewer than 24 college credits before entering degree candidacy at Rhode Island College.

Transfer applicants with fewer than 24 college credits will be evaluated according to the standards used for freshman applicants. Those with more than 24 college credits will be evaluated primarily on their collegiate academic performance.

Students who reside in the United States but have secondary school (or equivalent) credentials from another country are not required to take the SAT. However, such students, if they have lived in the United States for less than five years, must have a minimum score of 79 on the Web-based version of the Test of English as a Foreign Language (TOEFL), 213 on the computer-based version or 550 on the paper-based version. The International English Language Testing System (IELTS) exam is accepted in lieu of the TOEFL. The minimum required score is 6.5.

### Transfer Credit

Transfer credit is usually granted for courses completed at a regionally accredited college in which the student has achieved a minimum grade of C; however, Rhode Island College reserves the right of final judgment on any such decision. At the discretion of the admissions office, college credit more than 10 years old may be accepted for transfer. The chair of the student’s major department will determine how the credit is to be applied in the student’s program of study. Students may be awarded a maximum of 75 transfer credits.

Students may request program credit for art courses taken at another institution by submitting a portfolio of work representing the courses for which credit is desired. The portfolio will be reviewed by a committee of studio art faculty to determine course credit transfer.

A minimum of 45 credit hours must be earned at Rhode Island College to fulfill degree requirements. Transfer students must also satisfy the College Mathematics Milestone and all General Education requirements.

## Transfer Applicants from the University of Rhode Island and the Community College of Rhode Island

According to the Rhode Island Board of Education’s “Policy for Articulation and Transfer,” all college credit earned in comparable courses at the University of Rhode Island and the Community College of Rhode Island with minimally acceptable grades is transferable to Rhode Island College. The "Transfer Guide" is available through the following Web site: www.ritransfers.org.

## 2+2 Program Transfer Plans with the Community College of Rhode Island

Rhode Island College has established a series of 2+2 Program Transfer Plans for Community College of Rhode Island students seeking the most efficient route to a bachelor’s degree. The first 14 plans developed are among the most popular transfer majors and are considered 2+2 plans for those students who enroll full-time. This enables students to complete two years at the Community College of Rhode, transfer as juniors to Rhode Island College, and graduate in two years, in most cases with a complimentary minor in addition to the major.  Students will follow the same application procedure used for transfer applicants and are guaranteed admission with a minimum cumulative G.P.A. of 2.0.  2+2 Program Transfer Plans may be found at www.ric.edu/2plus2transfers

# Academic Policies and Requirements - Undergraduate

## Graduation Requirements for all Undergraduate Students

The following requirements must be completed by undergraduate degree candidates at Rhode Island College in order to graduate:

1. The General Education requirements.

2. The College Writing Requirement.

3. Writing in the Discipline Requirement.

4. The College Mathematics Milestone.

5. The major requirements listed under each program, and, if applicable, requirements in the minor.

6. Experiential Learning Requirement.

7. A minimum of 120 earned credits.

8. The College Residency Requirement: a minimum of 45 credits must be taken at RIC, including a minimum of 50% of the major credits (with at least 12 credits in the major at the 300- or 400-level) and a minimum of 2 courses for a minor.

9. A minimum of a 2.0 G.P.A. in the major and minor (if applicable).

10. A minimum overall G.P.A. of 2.0 on a 4.0 scale.

## College Writing Requirement

All students are required to complete the College Writing Requirement. In most cases, this requirement is satisfied by the completion of FYW 100, FYW 100P or FYW 100H, with a minimum grade of C. However, the Feinstein School of Education and Human Development requires a minimum grade of B. Students who receive a C- or below in FYW 100, FYW 100P or FYW 100H will receive the college credit but will not have fulfilled the College Writing Requirement. This requirement may also be satisfied by (1) passing the appropriate College Level Examination Program (CLEP)/College Composition, with a minimum score of 50, and by reporting the score to RIC’s Admissions Office; or (2) by passing the course equivalent of FYW 100 with a C or better at another institution; in this latter case, the transcript from the institution at which the student enrolled in the equivalent course should be sent to RIC’s Admissions office. Most students will have the opportunity during New Student Orientation to choose which FYW course best meets their needs. Visit the FYW Program website at www.ric.edu/firstyearwriting for information on this process.

Students are encouraged to fulfill the College Writing Requirement in their first year of study at Rhode Island College. Students who have not fulfilled the College Writing Requirement before the completion of 30 attempted credits at the college will have a registration hold placed on their account until they have registered for the course. If the course is not completed successfully, the hold will be placed again.

## Writing in the Discipline

Building on the core course, FYW 100/FYW 100P/FYW 100H, each discipline has identified a required course or courses within the major in which students learn to write for that discipline. Completion of the major/program fulfills the Writing in the Discipline requirement.

## College Mathematics

 Students are encouraged to complete the College Mathematics Milestone by the end of their first year of study at the College. Students who have not fulfilled the milestone will have that noted on their Academic Requirements report and transcript.

Students who do not satisfy the College Mathematics Milestone by the end of their first year (30 or more attempted credit hours at Rhode Island College) will have a registration hold until the student is registered for the appropriate course.

Note:  Fulfillment of the College Mathematics Milestone is distinct from and does not substitute for completion of the Mathematics Category of General Education.

Entering students (first-year and transfer) shall have the following options for fulfilling the College Mathematics Milestone:

1.    All entering students will be required to take the Mathematics Placement Exam prior to or during New Student Orientation. Students who achieve an appropriate placement score will have met the Mathematics Milestone. (This examination is given at least six times each semester and, if necessary, may be repeated once. The examination is administered by the Mathematics Learning Center.)

2.    Students who do not achieve a satisfactory grade on the Mathematics Placement Exam (which may be taken twice) must enroll in MATH 010 prior to or during their first year at Rhode Island College. Students who fail to earn a satisfactory grade must re-enroll in MATH 010 until successful completion.

3.    Students who receive transfer credit for a course(s) deemed equivalent to a RIC math course (MATH 010, 120, 139, 143, 177 or higher) will have met the Mathematics Milestone.

## Majors

**Majors**
All students must complete an approved major/program. Requirements are listed under each major and can be found in the catalog by school or online at https://www.ric.edu/academics/undergraduate-programs. For some majors or programs, including pre-professional programs in education, nursing and social work, there is a secondary admission process. Students must first begin as intended majors and meet certain requirements in order to apply for formal acceptance into the major/program. Majors and programs may also include cognates, a group of related courses that support the requirements of the major. Students must earn a minimum cumulative grade point average of a 2.00 in their major in order to graduate. Please note that some individual majors may have higher GPAs or specific grade requirements, and this will be stated where the major is outlined the catalog.

***Declaring a Major***
Entering first-year students who are unsure of a choice of major may select one of six Exploring Majors: Arts, Business, Health Sciences, Humanities, Science/Math and Social & Behavioral Sciences. Each provides a three-semester plan or RhodeMap to help keep students on track to on time graduation. All undergraduate degree students must declare a major by the time they have earned 45 credits (includes all earned course and test credits). Students who fail to declare a major will have a registration hold placed.

***Changing Majors***
Students who wish to change their major or add a second major, should contact the department chair of the new or additional major. Names and contact information can be found at https://www.ric.edu/documents/academic-affairs-division-directory-2021-2022. Students who have a double major and wish to drop one of them should contact the records office.

***Student-Designed Majors***
Students may develop individualized majors to accommodate special needs and interests. These majors may focus on an area of study not covered in regular departmental offerings or may be interdisciplinary in nature. Student-designed majors are open to undergraduate degree candidates who have earned at least 40 credit hours and who have a minimum cumulative grade point average of 2.50. Proposals from students with more than 75 credit hours are normally not accepted. A completed proposal must be submitted to the Committee on Student-Designed Majors no later than October 1 or March 1 for action that same semester. Further information about this program and application materials may be obtained from the offices of the academic deans.

## Minors

**Minors**
Minors, while not required at the college, can enhance and broaden a student’s educational experience and add value for employment or graduate school. Minors require a minimum of 18 credits and most range from 18-24 credits. Minors are open to students in any major, not just a minor in the school of the student’s major. Most majors have a corresponding minor. At least two courses in the minor must be completed at the college. Students must earn a minimum cumulative grade point average of a 2.00 in their minor.

Minors are also available in the following areas: archaeology, behavioral neuroscience, biological anthropology, cultural anthropology, coaching, cybersecurity, data analytics, digital media production, educational studies, gerontology, international business, international governmental non-governmental studies, italian, jazz studies, linguistic anthropology, medical anthropology, public history, queer studies, rhetoric and writing, statistical modeling and web development.

***Transfer Minors***

The college has created transfer minors designed primarily for, but not limited to, community college transfer students who have completed designated associate degree programs. All coursework for the minor will have been completed at the student’s prior institution before matriculating as a new student or a readmit at the college. Transfer minors consist of 18-24 credits in a focused field of study for which a minor does not exist at RIC. The transfer minor will be posted on the student’s official RIC transcript as an additional academic credential.

***Available Transfer Minors:***

Bristol Community College

•     Deaf Studies

•     Fire Science

•     Law Enforcement

•     Occupational Therapy

•     Paralegal Studies

Community College of Rhode Island

•     Business Advisory Services

•     Computer Studies

•     Emergency Management/Homeland Security

•     Fire Science

•     Law Enforcement

•     Networking

•     Occupational Therapy

•     Paralegal Studies

•     Web Technologies

Distribution Courses

Distribution courses emphasize ways of thinking and methods of inquiry within various disciplines. Students are required to take one course in each of the following seven areas:

• Arts—Visual and Performing

• History

• Literature

• Mathematics

• Natural Science (lab required)

• Social and Behavioral Sciences

• Advanced Quantitative/Scientific Reasoning

Courses

Advanced Quantitative/Scientific Reasoning (AQSR)

Courses in the AQSR category have Mathematics or Natural Science prerequisites and often additional prerequisites. For the full list of prerequisites, see the course description section of this catalog.

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| ANTH 235 | Bones and Stones: How Archaeologists Know | 4 | Annually |
| ANTH 237 | Measuring Inequality, Analyzing Injustice | 4 | Annually |
| ANTH 306 | Primate Ecology and Social Behavior | 4 | F, Sp |
| ANTH 307 | Human Nature: Evolution, Ecology, and Behavior | 4 | F, Sp |
| BIOL 314 | Genetics | 4 | F |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
| CHEM 106 | General, Organic, and Biological Chemistry II | 4 | F, Sp, Su |
| CSCI 423 | Analysis of Algorithms | 4 | F (odd years), Sp |
| GEOG 201 | Mapping Our Changing World | 4 | F, Sp |
| GEOG 205 | Earth's Physical Environments | 4 | F, Sp |
| HIST 207 | History Through Numbers | 4 | F, Sp |
| HSCI 232 | Human Genetics | 4 | F |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| MATH 239 | Contemporary Topics in Mathematics II | 4 | F, Sp, Su |
| MATH 241 | Statistical Methods II | 4 | As needed |
| MATH 245 | Principles of Data Science | 4 | F, Sp |
| MATH 248 | Business Statistics I | 4 | F, Sp, Su |
| MATH 324 | College Geometry | 4 | Sp |
| MGT 249 | Business Statistics II | 4 | F, Sp, Su |
| PHIL 220 | Logic and Probability in Scientific Reasoning | 4 | F, Sp |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |
| PHYS 120 | The Extraordinary Physics of Ordinary Things | 4 | Sp |
| PHYS 309 | Nanoscience and Nanotechnology | 4 | F (even years) |
| POL 300 | Methodology in Political Science | 4 | F, Sp |
| PSCI 204 | Understanding the Physical Universe | 4 | F, Sp, Su |
| PSCI 208 | Forensic Science | 4 | F, Sp |
| PSCI 214 | Introduction to Meteorology | 4 | F |
| SOC 302W | Social Research Methods | 4 | F, Sp, Su |
| SOC 404 | Social Data Analysis | 4 | F, Sp, Su |
| SWRK 303 | Social Work Research Methods II | 4 | F, Sp, Su |
| TECH 306 | Automation and Control Systems | 4 | Annually |

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Arts—Visual and Performing (A)

ONE COURSE from

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| --- | --- | --- | --- |
| ART 101 | Drawing I: General Drawing | 4 | F, Sp |
| ART 104 | Design I: Two-Dimensional Design | 4 | F, Sp |
| ART 201 | Visual Arts in Society | 4 | As needed |
| ART 210 | Nurturing Artistic and Musical Development | 4 | F, Sp |
| ART 231W | Prehistoric to Renaissance Art | 4 | F, Sp, Su |
| ART 232W | Renaissance to Contemporary Art | 4 | F, Sp, Su |
| COMM 220/MUS 220 | Digital Audio Production I | 4 | F, Sp, Su |
| COMM 241 | Introduction to Cinema and Video | 4 | F, Sp, Su |
| COMM 244 | Digital Media Lab | 4 | F, Sp, Su |
| DANC 215W | Contemporary Dance and Culture | 4 | F, Sp |
| ENGL 113 | Approaches to Drama: Page to Stage | 4 | F, Sp |
| FILM 116 | Introduction to Film | 4 | F, Sp, Su |
| MUS 167 | Music Cultures of Non-Western Worlds | 4 | F, Sp |
| MUS 201 | Survey of Music | 4 | F, Sp, Su |
| MUS 203 | Elementary Music Theory | 4 | F, Sp, Su |
| MUS 220/COMM 220 | Digital Audio Production I | 4 | F, Sp, Su |
| MUS 223 | American Popular Music | 4 | F, Sp |
| MUS 225 | History of Jazz | 4 | F, Sp |
| PHIL 230 | Aesthetics | 4 | F, Sp, Su |
| THTR 240 | Appreciation and Enjoyment of the Theatre | 4 | F, Sp, Su |
| THTR 242 | Acting for Nonmajors | 4 | Su |

History (H)

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| HIST 101 | Multiple Voices: Africa in the World | 4 | F, Sp, Su |
| HIST 102 | Multiple Voices: Asia in the World | 4 | F, Sp, Su |
| HIST 103 | Multiple Voices: Europe in the World to 1600 | 4 | F, Sp, Su |
| HIST 104 | Multiple Voices: Europe in the World Since 1600 | 4 | F, Sp, Su |
| HIST 105 | Multiple Voices: Latin America in the World | 4 | F, Sp, Su |
| HIST 106 | Multiple Voices: Muslim People in the World | 4 | F, Sp, Su |
| HIST 107 | Multiple Voices: The United States in the World | 4 | F, Sp, Su |
| HIST 108 | History of Science and Medicine | 4 | Annually |
| HIST 117 | Special Topics in History | 4 | As needed |
| HIST 118 | Topics in U.S. History to 1877 | 3 | As needed |
| HIST 119 | Topics in U.S. History from 1877 to Present | 3 | As needed |

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Literature (L)

ONE COURSE from

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| --- | --- | --- | --- |
| ENGL 118 | Introduction to the Literary Experience | 4 | As needed |
| ENGL 120 | Studies in Literature and Identity | 4 | F, Sp, Su |
| ENGL 121 | Studies in Literature and Nation | 4 | F, Sp, Su |
| ENGL 122 | Studies in Literature and the Canon | 4 | F, Sp, Su |
| ENGL 123 | Studies in Literature and Genre | 4 | F, Sp, Su |
| FREN 115 | Literature of the French-Speaking World | 4 | F, Sp |
| ITAL 115 | Literature of Italy | 4 | F, Sp |
| PORT 115 | Literature of the Portuguese-Speaking World | 4 | F, Sp |
| SPAN 115 | Literature of the Spanish-Speaking World | 4 | F, Sp |

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Mathematics (M)

ONE COURSE from

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| --- | --- | --- | --- |
| MATH 139 | Math, Data, and the Contemporary Citizen | 4 | F, Sp, Su |
| MATH 177 | Quantitative Business Analysis | 4 | F, Sp, Su |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |

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Note: Completion of the Mathematics category of General Education does not satisfy the College Mathematics Milestone. In addition, students in the elementary education curriculum who complete MATH 144 (and its prerequisite, MATH 143) shall be considered to have fulfilled the Mathematics category of General Education.

Natural Science (NS)

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 100 | Fundamental Concepts of Biology | 4 | F, Sp, Su |
| BIOL 108 | Basic Principles of Biology | 4 | F, Sp, Su |
| BIOL 111 | Introductory Biology I | 4 | F, Sp, Su |
| BIOL 112 | Introductory Biology II | 4 | F, Sp, Su |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
| CHEM 105 | General, Organic and Biological Chemistry I | 4 | F, Sp, Su |
| PSCI 103 | Physical Science | 4 | F, Sp, Su |
| PSCI 211 | Introduction to Astronomy | 4 | F, Sp |
| PSCI 212 | Introduction to Geology | 4 | F, Su |
| PSCI 217 | Introduction to Oceanography | 4 | Sp |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
| PHYS 110 | Introductory Physics | 4 | Sp, F, Su |

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Faculty of Arts and Sciences

Undergraduate Degree Programs

Earl Simson, Dean

Joan Dagle, Associate Dean

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| --- | --- | --- |
| **Major** | **Degree** | **Concentration** |
| Africana Studies (p. ) | B.A. |   |
| Anthropology (p. ) | B.A. |   |
| Art (Studio) (p. ) (p. ) | B.A. or B.F.A. | Ceramics |
|   | B.A. or B.F.A. | Digital Media |
|   | B.A. or B.F.A. | Graphic Design |
|   | B.A. or B.F.A. | Metalsmithing and Jewelry |
|   | B.A. or B.F.A. | Painting |
|   | B.A. or B.F.A. | Photography |
|   | B.A. or B.F.A. | Printmaking |
|   | B.A. or B.F.A. | Sculpture |
| Art Education\* (p. ) | B.S. |   |
| Art Education\* (p. ) | B.F.A. | Ceramics *(Admission currently suspended.)* |
|   | B.F.A. | Digital Media *(Admission currently suspended.)* |
|   | B.F.A. | Graphic Design *(Admission currently suspended.)* |
|   | B.F.A. | Metalsmithing and Jewelry *(Admission currently suspended.)* |
|   | B.F.A. | Painting *(Admission currently suspended.)* |
|   | B.F.A. | Photography *(Admission currently suspended.)* |
|   | B.F.A. | Printmaking *(Admission currently suspended.)* |
|   | B.F.A. | Sculpture *(Admission currently suspended.)* |
| Art History (p. ) | B.A. |   |
| Behavioral Health Studies (p. ) | B.S. |   |
| Biology\*\* (p. ) | B.S. |   |
| Chemistry\*\* (p. ) | B.A. |   |
|   | B.A. | Environmental Chemistry |
|   | B.S. | Biochemistry  |
|   | B.S. | Environmental Chemistry |
|   | B.S. | Professional Chemistry |
| Communication (p. ) | B.A. | Journalism |
|   | B.A. |  Media Communication  |
|   | B.A. | Public and Professional Communication |
|   | B.A. | Public Relations and Advertising |
|   | B.A. | Speech, Language, and Hearing Science |
| Computer Information Systems (p. ) | B.S. |   |
| Computer Science (p. ) | B.A. |   |
| Computer Science (p. ) | B.S. |   |
| Dance Performance (p. ) | B.A. |   |
| Data Science (p. ) | B.S. |   |
| English\*\* (p. ) | B.A. |   |
|   | B.A. | Creative Writing |
|   | B.A. | Professional Writing |
| Environmental Studies  (p. ) | B.A.  |   |
| Film Studies (p. ) | B.A. |   |
| Gender and Women’s Studies (p. ) | B.A. |   |
| Geography (p. ) | B.A. |   |
| Global Studies  (p. ) | B.A.  |   |
| Health Sciences (p. ) | B.S. |   |
|   | B.S. | Dental Hygiene Completion |
|   | B.S. | Human Services |
|   | B.S. | Medical Laboratory Sciences |
|   | B.S. | Respiratory Therapy Completion |
| History\*\* (p. ) | B.A. |   |
| Justice Studies (p. ) | B.A |   |
| Liberal Studies (p. ) | B.A. |   |
| Mathematics\*\* (p. ) | B.A. |   |
| Medical Imaging (p. ) | B.S. | Certified RT Computed Tomography |
|   | B.S. | Certified Medical Imager Management |
|   | B.S. | Certified RT Vascular Interventional Radiography |
|   | B.S. | Diagnostic Medical Sonography |
|   | B.S. | Magnetic Resonance Imaging |
|   | B.S. | Nuclear Medicine Technology |
|   | B.S. | Radiography |
| Modern Languages (p. ) | B.A. | Francophone Studies |
|   | B.A. | French |
|   | B.A. | Latin American Studies |
|   | B.A. | Portuguese |
|   | B.A. | Spanish |
| Music (p. ) | B.A. |   |
| Music\* (p. ) | B.M. | Music Education |
|   | B.M. | Performance |
| Philosophy (p. ) | B.A. |   |
|   | B.A. | Ethics and Society |
|   | B.A. | History of Philosophy |
|  | B.A. | Knowledge and Reality |
| Physics\*\* (p. ) | B.S. |   |
| Political Science (p. ) | B.A. |   |
| Psychology (p. ) | B.A. |   |
| Public Administration (p. ) | B.A. |   |
| Sociology (p. ) | B.A. |   |
| Theatre (p. ) | B.A. | Design/Technical |
|   | B.A. | General Theatre |
|   | B.A. | Musical Theatre |
|   | B.A. | Performance |

\*Art education and music education are designed for students seeking grades pre-K–12 teaching certification.

\*\*Students seeking grades 7–12 teaching certification in these majors should see Secondary Education.

Minors

Africana Studies (p. )

Anthropology (p. )—Archaeology, Biological, Cultural, Linguistic, Medical

Archaeology (p. )

Art (p. )—Ceramics, Digital Media, Graphic Design, Metalsmithing and Jewelry, Painting, Photography, Printmaking, Sculpture

Art History (p. )

Behavioral Neuroscience (p. )

Biological Anthropology (p. )

Biology (p. )

Chemistry (p. )

Communication (p. )

Computer Science (p. )

Computer Information Systems (p. )

Creative Writing (p. )

Cyber Security (p. )

Cultural Anthropology (p. )

Dance Performance (p. )

Data Science

Digital Media Production (p. )

English (p. )

Environmental Studies (p. )

Film Studies (p. )

Francophone Studies (p. )

French (p. )

Gender and Women’s Studies (p. )

Geography (p. )

Gerontology (p. ) (p. )

Global Studies (p. )

Health Sciences (p. )

History (p. )

International Nongovernmental Organizations Studies (p. )

Italian (p. )

Jazz Studies (p. )

Justice Studies  (p. )

Latin American Studies (p. )

Linguistic Anthropology (p. )

Mathematics (p. )

Medical Anthropology (p. )

Music (p. )

Philosophy (p. )

Physics (p. )

Political Science (p. )

Portuguese (p. )

Professional Writing (p. )

 (p. )Psychology (p. )

Public History (p. )

Queer Studies (p. )

Sociology (p. )

Spanish (p. )

Statistical Modeling (p. )

Theatre (p. )

Web Development (p. )

Professional preparation programs are offered in predental, (p. ) prelaw, (p. ) premedical, and preoptometry (p. ).

**– PLEASE NOTE –**All undergraduate full-degree programs require the completion of at least 120 credit hours, including (1) General Education requirements, (2) the college writing requirement, (3) the college mathematics milestone, and (4) the course requirements listed under each program.

# Chemistry

**Department of Physical Sciences**

**Department Chair:**Andrea Del Vecchio

**Chemistry Program Faculty: Professors** Almeida, Cooley, Lamontagne, Knowlton, E. Magyar, J. Magyar, Williams Jr.; **Associate Professors**Towle-Weicksel**,** Leung

Students **must** consult with their assigned advisor before they will be able to register for courses. This program also has specific retention requirements, which may be obtained from the advisor.

Chemistry B.A.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| CHEM 103H | Honors General Chemistry I | 4 | As Needed |
|  |   |  |  |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
|  | -Or- |  |  |
| CHEM 104H | Honors General Chemistry II | 4 | As Needed |
|  |   |  |  |
| CHEM 205W | Organic Chemistry I | 4 | F |
| CHEM 206W | Organic Chemistry II | 4 | Sp |
| CHEM 310 | Biochemistry | 4 | F |
| CHEM 403 | Inorganic Chemistry I | 3 | F |
|  |   |  |  |
| CHEM 404W | Analytical Chemistry | 4 | Sp (even years) |
|  | -Or- |  |  |
| CHEM 416W | Environmental Analytical Chemistry | 4 | Sp (odd years) |
|  |   |  |  |
| CHEM 405 | Physical Chemistry I | 3 | F |
| CHEM 407W | Physical Chemistry Laboratory I | 1 | F |

CHOOSE ONE OF THE OPTIONS below

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 406 | Physical Chemistry II | 3 | As Needed |
|  | -Or- |  |  |
|  |   |  |  |
| CHEM 412 | Inorganic Chemistry II | 2 | Sp |
|  | -And- |  |  |
| CHEM 413 | Inorganic Chemistry Laboratory | 1 | Sp |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 414 | Instrumental Methods of Analysis | 4 | Sp (odd years) |
|  | -Or- |  |  |
| CHEM 418 | Marine Environmental Chemistry | 4 | As Needed |
|  | -Or- |  |  |
| CHEM 419 | Biochemistry Mechanisms | 3 | Sp |
|  | -Or- |  |  |
| CHEM 422 | Biochemistry Laboratory | 3 | Sp |
|  | -Or- |  |  |
| CHEM 425 | Advanced Organic Chemistry | 4 | F (odd years) |
|  | -Or- |  |  |
| CHEM 435 | Pharmacology and Toxicology | 3 | As needed |

Note: MATH 314 Calculus III is a prerequisite for CHEM 406.

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |

Note: Prior to enrolling in any Chemistry course students must have completed the college mathematics milestone.

Subtotal: 50-51

Course Requirements — Concentration in Environmental Chemistry

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
| CHEM 205W | Organic Chemistry I | 4 | F |
| CHEM 206W | Organic Chemistry II | 4 | Sp |
| CHEM 310 | Biochemistry | 4 | F |
| CHEM 403 | Inorganic Chemistry I | 3 | F |
| CHEM 405 | Physical Chemistry I | 3 | F |
| CHEM 407W | Physical Chemistry Laboratory I | 1 | F |
| CHEM 416W | Environmental Analytical Chemistry | 4 | Sp (odd years) |
| CHEM 418 | Marine Environmental Chemistry | 4 | As Needed |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |
|  |   |  |  |
| PSCI 212 | Introduction to Geology | 4 | F, Su |
|  | -Or- |  |  |
| PSCI 217 | Introduction to Oceanography | 4 | Sp |

Subtotal: 55

Chemistry B.S

Course Requirements — Concentration in Biochemistry

The B.S. degree program is approved by the American Chemical Society.

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| CHEM 103H | Honors General Chemistry I | 4 | As Needed |
|  |   |  |  |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
|  | -Or- |  |  |
| CHEM 104H | Honors General Chemistry II | 4 | As Needed |
|  |   |  |  |
| CHEM 205W | Organic Chemistry I | 4 | F |
| CHEM 206W | Organic Chemistry II | 4 | Sp |
| CHEM 310 | Biochemistry | 4 | F |
| CHEM 403 | Inorganic Chemistry I | 3 | F |
|  |   |  |  |
| CHEM 404W | Analytical Chemistry | 4 | Sp (even years) |
|  | -Or- |  |  |
| CHEM 416W | Environmental Analytical Chemistry | 4 | Sp (odd years) |
|  |   |  |  |
| CHEM 405 | Physical Chemistry I | 3 | F |
| CHEM 407W | Physical Chemistry Laboratory I | 1 | F |
| CHEM 419 | Biochemistry Mechanisms | 3 | Sp |
| CHEM 422 | Biochemistry Laboratory | 3 | Sp |
| CHEM 491-493 | Research in Chemistry | 1 | As needed |

Note: CHEM 491, CHEM 492, CHEM 493: Research in Chemistry can be fulfilled through any combination of these courses. It is strongly suggested that students take research credits in multiple semesters, beginning in their junior year for a total of 3 credit hours.

CHOOSE ONE OF THE OPTIONS below:

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 406 | Physical Chemistry II | 3 | As Needed |
|  | -And- |  |  |
| CHEM 408 | Physical Chemistry Laboratory II | 1 | As Needed |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 412 | Inorganic Chemistry II | 2 | Sp |
|  | -And- |  |  |
| CHEM 413 | Inorganic Chemistry Laboratory | 1 | Sp |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 414 | Instrumental Methods of Analysis | 4 | Sp (odd years) |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 418 | Marine Environmental Chemistry | 4 | As Needed |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 425 | Advanced Organic Chemistry | 4 | F (odd years) |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 111 | Introductory Biology I | 4 | F, Sp, Su |
| BIOL 112 | Introductory Biology II | 4 | F, Sp, Su |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |

Note: Prior to enrolling in any Chemistry course students must have completed the college mathematics milestone.

Subtotal: 67-68

Course Requirements — Concentration in Environmental Chemistry

The B.S. degree program is approved by the American Chemical Society.

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| CHEM 103H | Honors General Chemistry I | 4 | As Needed |
|  |   |  |  |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
|  | -Or- |  |  |
| CHEM 104H | Honors General Chemistry II | 4 | As Needed |
|  |   |  |  |
| CHEM 205W | Organic Chemistry I | 4 | F |
| CHEM 206W | Organic Chemistry II | 4 | Sp |
| CHEM 310 | Biochemistry | 4 | F |
| CHEM 403 | Inorganic Chemistry I | 3 | F |
| CHEM 405 | Physical Chemistry I | 3 | F |
| CHEM 407W | Physical Chemistry Laboratory I | 1 | F |
| CHEM 414 | Instrumental Methods of Analysis | 4 | Sp (odd years) |
| CHEM 416W | Environmental Analytical Chemistry | 4 | Sp (odd years) |
| CHEM 418 | Marine Environmental Chemistry | 4 | As Needed |
| CHEM 491-493 | Research in Chemistry | 1 | As needed |

Note: CHEM 491, CHEM 492, CHEM 493: Research in Chemistry can be fulfilled through any combination of these courses. It is strongly suggested that students take research credits in multiple semesters, beginning in their junior year, for a total of 3 credit hours.

CHOOSE one of the options below:

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 406 | Physical Chemistry II | 3 | As Needed |
|  | -And- |  |  |
| CHEM 408 | Physical Chemistry Laboratory II | 1 | As Needed |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 412 | Inorganic Chemistry II | 2 | Sp |
|  | -And- |  |  |
| CHEM 413 | Inorganic Chemistry Laboratory | 1 | Sp |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 425 | Advanced Organic Chemistry | 4 | F (odd years) |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 111 | Introductory Biology I | 4 | F, Sp, Su |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |
| PSCI 212 | Introduction to Geology | 4 | F, Su |

Note: Prior to enrolling in any Chemistry course students must have completed the college mathematics milestone.

Subtotal: 69-70

Course Requirements ­— Concentration in Professional Chemistry

The B.S. degree program is approved by the American Chemical Society.

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| CHEM 103H | Honors General Chemistry I | 4 | As Needed |
|  |   |  |  |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
|  | -Or- |  |  |
| CHEM 104H | Honors General Chemistry II | 4 | As Needed |
|  |   |  |  |
| CHEM 205W | Organic Chemistry I | 4 | F |
| CHEM 206W | Organic Chemistry II | 4 | Sp |
| CHEM 310 | Biochemistry | 4 | F |
| CHEM 403 | Inorganic Chemistry I | 3 | F |
|  |   |  |  |
| CHEM 404W | Analytical Chemistry | 4 | Sp (even years) |
|  | -Or- |  |  |
| CHEM 416W | Environmental Analytical Chemistry | 4 | Sp (odd years) |
|  |   |  |  |
| CHEM 405 | Physical Chemistry I | 3 | F |
| CHEM 406 | Physical Chemistry II | 3 | As Needed |
| CHEM 407W | Physical Chemistry Laboratory I | 1 | F |
| CHEM 408 | Physical Chemistry Laboratory II | 1 | As Needed |
| CHEM 414 | Instrumental Methods of Analysis | 4 | Sp (odd years) |
| CHEM 491-493 | Research in Chemistry | 1 | As needed |

Note: CHEM 491, CHEM 492, CHEM 493: Research in Chemistry can be fulfilled through any combination of these courses. It is strongly suggested that students take research credits in multiple semesters, beginning in their junior year for a total of 3 credit hours.

CHOOSE one of the options below:

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 412 | Inorganic Chemistry II | 2 | Sp |
|  | -And- |  |  |
| CHEM 413 | Inorganic Chemistry Laboratory | 1 | Sp |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 418 | Marine Environmental Chemistry | 4 | As Needed |
|  |   |  |  |
|  | -Or- |  |  |
| CHEM 425 | Advanced Organic Chemistry | 4 | F (odd years) |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| MATH 314 | Calculus III | 4 | F, Sp |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |

Note: Prior to enrolling in any Chemistry course students must have completed the college mathematics milestone.

Subtotal: 65-66

Chemistry Minor

Course Requirements

The minor in chemistry consists of a minimum of 19 credit hours (five courses), as follows:

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
| CHEM 104 | General Chemistry II | 4 | Sp, Su |
| CHEM 205W | Organic Chemistry I | 4 | F |
| CHEM 206W | Organic Chemistry II | 4 | Sp |

and one chemistry course at the 400-level (3-4 credits).

Note: Prior to enrolling in any Chemistry course students must have completed the college mathematics milestone.

Total Credit Hours: 19-20

# Global Studies

**Global Studies Program Co-Directors:** Moonsil Kim and April Kiser

Students **must**consult with their assigned advisor before they will be able to register for courses.

Students are advised to consult with the faculty contact for the Global Studies major and minor for creating a personalized plan at the time they declare this major or minor.

**Retention Requirements**

A minimum cumulative grade point average of 2.75 in the Global Studies major or minor.

Global Studies B.A.

Course Requirements

Core Courses

|  |  |  |  |
| --- | --- | --- | --- |
| GLOB 200W | Global Studies and the World | 4 | F, Sp |
| GLOB 461W | Seminar in Global Studies | 4 | F, Sp |

Distribution Courses

World Geography

|  |  |  |  |
| --- | --- | --- | --- |
| GEOG 200 | World Regional Geography | 4 | F, Sp |

Global Historical Perspectives

|  |  |  |  |
| --- | --- | --- | --- |
| HIST 204 | Global History since 1500 | 3 | F, Sp |
|  | -And- |  |  |
|  | ONE COURSE from: |  |  |
| HIST 218 | American Foreign Policy: 1945 to the Present | 3 | F |
| HIST 220 | Ancient Greece | 3 | Alternate years |
| HIST 221 | The Roman Republic | 3 | Alternate Years |
| HIST 222 | The Roman Empire | 3 | Alternate Years |
| HIST 223 | Medieval History | 3 | Alternate years |
| HIST 224 | The Glorious Renaissance | 3 | F |
| HIST 234 | Challenges and Confrontations: Women in Europe | 3 | As needed |
| HIST 235 | Voices of the Great War | 3 | Alternate years |
| HIST 236 | Post-Independence Africa | 3 | Annually |
| HIST 238 | Early Imperial China | 3 | As needed |
| HIST 239 | Japanese History through Art and Literature | 3 | Alternate years |
| HIST 241 | Colonial and Neocolonial Latin America | 3 | Annually |
| HIST 242 | Modern Latin America | 3 | Annually |
| HIST 258 | Environmental History | 3 | Annually |
| HIST 306 | Protestant Reformations and Catholic Renewal | 3 | As needed |
| HIST 307 | Europe in the Age of Enlightenment | 3 | As needed |
| HIST 308 | Europe in the Age of Revolution, 1789 to 1850 | 3 | As needed |
| HIST 309 | Europe in the Age of Nationalism, 1850 to 1914 | 3 | As needed |
| HIST 310 | Twentieth-Century Europe | 3 | As needed |
| HIST 311 | The Origins of Russia to 1700 | 3 | Alternate years |
| HIST 312 | Russia from Peter to Lenin | 3 | Alternate years |
| HIST 313 | The Soviet Union and After | 3 | Alternate years |
| HIST 318 | Tudor-Stuart England | 3 | As needed |
| HIST 325 | Superpower America 1945-1990 | 3 | Annually |
| HIST 330 | History of American Immigration | 3 | As needed |
| HIST 336 | The United States and the Emerging World | 3 | Sp |
| HIST 340 | The Muslim World from the Age of Muhammad to 1800 | 3 | As needed |
| HIST 341 | The Muslim World in Modern Times, 1800 to the Present | 3 | As needed |
| HIST 342 | Islam and Politics in Modern History | 3 | As needed |
| HIST 345 | Conflict, Globalization, and Modern East Asia | 3 | As needed |
| HIST 348 | Africa under Colonial Rule | 3 | Annually |

Additional 200-300-level history classes on a global perspective might be used in consultation with advisor. All HIST classes listed here have HIST 101, HIST 102, HIST 103, HIST 104, HIST 105, HIST 106, HIST 107 or HIST 108, or consent of department chair as their prerequisite.

Note: Students cannot take History Connections course to satisfy this requirement.

Global Political Systems

|  |  |  |  |
| --- | --- | --- | --- |
| POL 203 | Global Politics | 4 | F, Sp |
|  | -And- |  |  |
|  | ONE COURSE from: |  |  |
| INGO 300 | International NGOs and Nonprofits | 4 | F |
| INGO 301 | Global Development | 4 | Sp |
| INGO 304 | Internship in International NGOs and Nonprofits | 1-4 | As needed |
| POL 303 | International Law and Organization | 4 | Sp |
| POL 315 | Western Legal Systems | 4 | As needed |
| POL 337 | Urban Political Geography | 3 | As needed |
| POL 341 | The Politics of Developing Nations | 4 | Sp |
| POL 342 | The Politics of Global Economic Change | 4 | Every third semester |
| POL 343 | The Politics of Western Democracies | 4 | As needed |
| POL 344 | Human Rights | 4 | Sp (alternate years) |
| POL 345 | International NGOs and Nonprofits | 4 | F |
| POL 346 | Foreign Policy | 4 | As needed |
| POL 347 | Political Activism and Social Justice | 4 | Sp (Alternate years) |
| POL 348 | Middle Eastern and North African Politics | 4 | F |

Additional 300-level classes on a global perspective from INGO or POL might be used in consultation with advisor.

Additional prerequisites and notes:

\*POL 344 has completion of at least 30 college credits.

\*POL 347 has minimum of 30 completed college credits..

\*Students cannot receive credit for both INGO 300 and POL 345.

\*Students cannot receive credit for both POL 337 and GEOG 337.

\*Student can take INGO 304 for 3 credits if they have taken INGO 303 for one credit, otherwise they must take it for four credits, though these need not all be taken at the same time.

Global Economic Systems

|  |  |  |  |
| --- | --- | --- | --- |
|  | ONE COURSE from: |  |  |
| ECON 200 | Introduction to Economics | 4 | F, Sp, Su |
| ECON 214 | Principles of Microeconomics | 3 | F, Sp, Su |
| ECON 215 | Principles of Macroeconomics | 3 | F, Sp, Su |
|  | -And- |  |  |
|  | ONE COURSE from: |  |  |
| ECON 331 | Topics in Global Economics | 4 | Annually (even years) |
| ECON 335 | Economics of Race and Gender | 4 | Annually (even years) |
| ECON 337 | Economics of Climate Change and Sustainability | 4 | Annually (odd years) |
| ECON 421 | International Economics | 4 | As needed |
| ECON 422 | Economics of Developing Countries | 4 | As needed |
| ECON 437 | Environmental Economics | 4 | As needed |

Additional 300-400-levelclass on a global perspective from ECON might be used in consultation with their advisor.

Additional prerequisites:

\*ECON 214 and ECON 215 have completion of College Mathematics Milestone

\*ECON 421, ECON 422, and ECON 437 have ECON 214; ECON 215; and MATH177

Culture, Geography, Society

Additional 300-400 level course on a global perspective from ANTH, SOC, or GEOG might be used in consultation with their advisor.

Additional prerequisites:

\*ANTH 310 has completion of at least 60 college credits and ANTH 104 or COMM 255, or consent of instructor.

\*ANTH 312 has ANTH 102 or consent of department chair

\*ANTH 334,  ANTH 345, and ANTH 461 have completion of at least 60 college credits.

\*SOC 435 should be taken for 4 credits and it has completion of at least 30 college credits with a minimum 2.5 GPA or graduate status, and consent of Instructor or Department Chair. Some fieldwork sites may have additional requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| ANTH 101 | Introduction to Cultural Anthropology | 4 | F, Sp |
|  | -And- |  |  |
|  | ONE COURSE from: |  |  |
|  |   |  |  |
| ANTH 301/ENST 301 | Ethnobotany | 4 | Alternate years |
| ANTH 309 | Medical Anthropology | 4 | Alternate years |
| ANTH 310 | Language and Culture | 4 | Alternate years |
| ANTH 312 | Archaeology of Mesopotamia and South Asia | 4 | Alternate years |
| ANTH 333 | Comparative Law and Justice | 4 | F, Sp |
| ANTH 334 | Steamships and Cyberspace: Technology, Culture, Society | 4 | Alternate years |
| ANTH 338 | Urban Anthropology | 4 | Alternate years |
| ANTH 345 | Museums, Cultures, and Others | 4 | Alternate years |
| ANTH 461/FNED 461 | LatinX in the United States | 4 | Annually |
| GEOG 337 | Urban Political Geography | 3 | As needed |
| GEOG 338 | People, Houses, Neighborhoods, and Cities | 3 | As needed |
| SOC 314 | The Sociology of Health and Illness | 4 | Annually |
| SOC 324 | Immigration and Justice | 4 | Annually |
| SOC 333 | Comparative Law and Justice | 4 | F, Sp |
| SOC 345 | Victimology | 4 | F, Sp, Su |
| SOC 435 | Fieldwork in Sociology | 4-16 | As needed |

Art, Literature, Communication

|  |  |  |  |
| --- | --- | --- | --- |
|  | ONE COURSE from: |  |  |
| COMM 348 | Global Communication | 4 | F |
| ENGL 335 | Literatures of the World to 1500 | 4 | As needed |
| ENGL 336 | Reading Globally | 4 | As needed |
| FILM 353 | National Cinemas | 4 | Alternate years |
| FREN 313 | Modern France and the Francophone World | 4 | Alternate years |
| FREN 323 | Survey of French Literature from the Middle Ages to 1789 | 4 | Alternate years |
| FREN 324 | Survey of French Literature from 1789 to the Present | 4 | Alternate years |
| ITAL 321 | Italian Literature and Civilization through Renaissance | 4 | Alternate years |
| ITAL 322 | Italian Literature and Civilization Post-Renaissance | 4 | Alternate years |
| MLAN 360 | Seminar in Modern Languages | 3 | Annually |
| PORT 302 | Portuguese Literature and Culture | 4 | Alternate years |
| PORT 303 | Insular Literatures and Cultures | 4 | Alternate years |
| PORT 304 | Brazilian Literature and Culture | 4 | Alternate years |
| PORT 305 | Lusophone African Literatures and Cultures | 4 | As needed |
| SPAN 310 | Spanish Literature and Culture: Pre-Eighteenth Century | 4 | F |
| SPAN 311 | Spanish Literature and Culture: From Eighteenth Century | 4 | Sp |
| SPAN 312 | Latin American Literature and Culture: Pre-Eighteenth Century | 4 | F |
| SPAN 313 | Latin American Literature and Culture: From Eighteenth Century | 4 | Sp |

Additional 300-400 level classes on a global perspective in ART, COMM, DANC, ENGL, FILM, FREN, ITAL, MLAN, MUS, PORT, SPAN, or THTR might be used in consultation with their advisor

Note: Students cannot take Connections course to satisfy this requirement.

Additional prerequisites:

\*COMM 348 has COMM 240

\*ENGL 335 and 336 have ENGL 200, ENGL 200W, or ENGL 201

\*FILM 353 has FILM 116, or consent of program director.

\*FREN 313, FREN 323, and FREN 324 have FREN 202 or FREN 202W, or consent of department chair.

\*ITAL 321 and ITAL 322 have ITAL 202, or consent of department chair.

\*MLAN 360 has completion of two 300-level courses and one cognate course in a modern languages concentration and an overall GPA of 2.67.

\*PORT 302, PORT 303, PORT 304, and PORT 305 have PORT 202 or PORT 202W, or consent of department chair.

\*SPAN 310, SPAN 311, SPAN 312, and SPAN 313 have SPAN 202 or SPAN 202W, or consent of department chair

Total Credit Hours: 43-46

Global Studies Minor

The minor consists of 22-24 credit hours or six courses, as follows:

Course Requirements

Core Courses

|  |  |  |  |
| --- | --- | --- | --- |
| GEOG 200 | World Regional Geography | 4 | F, Sp |
| GLOB 200W | Global Studies and the World | 4 | F, Sp |
| HIST 204 | Global History since 1500 | 3 | F, Sp |
| POL 203 | Global Politics | 4 | F, Sp |
|  | ONE COURSE from 200-300 level classes from the Global Studies Distribution courses of the chosen concentration |  |  |
|  | ONE COURSE from 300-400 level classes from the Global Studies Distribution courses of the chosen concentration |  |  |

Note: Some courses may have additional prerequisites

Concetrantions

Global History

Global Politics

Global Culture and Society

Global Art and Communication

Regional Studies

Others (may be determined in discussion with the program director)

Total Credit Hours: 21-23

# Mathematical Sciences

**Department of Mathematical Sciences**

**Department Chair:**Rebecca Sparks

**Data Science Program Faculty: Professors** Abrahamson, Costa, Humphreys, La Ferla, Sparks, Teixeira, Zhou; **Associate Professors** Burke, Gall, Harrop, Kovac, Pinheiro, Medwid, Ravenscroft; **Assistant Professors** Wang

Students **must** consult with their assigned advisor before they will be able to register for courses.

*Note: Students cannot count toward the major more than two courses with grades below C-.*

Data Science B.S.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
|  |   |  |  |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| MATH 248 | Business Statistics I | 4 | F, Sp, Su |
|  |   |  |  |
| MATH 245 | Principles of Data Science | 4 | F, Sp |
| MATH 314 | Calculus III | 4 | F, Sp |
| MATH 345 | Linear Models for Data Science | 4 | F |
| MATH 436 | Discrete Mathematics | 3 | F, Sp |
| MATH 441 | Introduction to Probability | 4 | F |
| MATH 445 | Advanced Statistical Methods | 4 | Sp |
| MATH 460 | Seminar in Data Science | 3 | Sp |
| CSCI 157 | Introduction to Algorithmic Thinking in Python | 4 | F, Sp |
| CSCI 428 | Machine Learning | 4 | Sp |
|  |   |  |  |
| CIS 455W | Database Programming | 4 | F, Sp |
|  | -Or- |  |  |
| CSCI 455 | Introduction to Databases | 4 | F |
|  |  |  |  |
| CIS 470 | Introduction to Data Analytics | 4 | F |
| CIS 472 | Data Visualization | 4 | As needed |
| ENGL 230W | Workplace Writing | 4 | F, Sp, Su |
| PHIL 207 | Technology and the Future of Humanity | 3 | F, Sp |

Subtotal: 65-66

Mathematics B.A.

**Department of Mathematical Sciences**

**Department Chair:** Rebecca Sparks

**Mathematics Program Faculty: Professors** Abrahamson, Costa, Humphreys, La Ferla, Sparks, Teixeira, Zhou; **Associate Professors** Burke, Christy, Gall, Harrop, Kovac, Pinheiro, ; **Assistant Professors** Medwid, Turki, Wang

Students **must** consult with their assigned advisor before they will be able to register for courses.

*Note: Students cannot count toward the major more than two courses with grades below C-.*

Course Requirements

Courses

Prior to enrolling in any mathematics course above 120, all students must have completed the College Mathematics Milestone.

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| MATH 300W | Bridge to Advanced Mathematics | 4 | Sp |
| MATH 314 | Calculus III | 4 | F, Sp |
| MATH 315 | Linear Algebra | 4 | F |
| MATH 411 | Calculus IV | 4 | F (odd years) |
| MATH 416 | Ordinary Differential Equations | 4 | Sp (as needed) |
|  | -Or- |  |  |
| MATH 417 | Introduction to Numerical Analysis | 4 | Sp (as needed) |
| MATH 432 | Introduction to Abstract Algebra | 4 | Sp |
| MATH 441 | Introduction to Probability | 4 | F |
| MATH 461W | Seminar in Mathematics | 3 | Sp |

TWO COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 416 | Ordinary Differential Equations | 4 | Sp (as needed) |
|  | -Or- |  |  |
| MATH 417 | Introduction to Numerical Analysis | 4 | Sp (as needed) |
| MATH 418 | Introduction to Operations Research | 3 | Sp (even years) |
| MATH 431 | Number Theory | 3 | F, Sp |
| MATH 436 | Discrete Mathematics | 3 | F, Sp |
| MATH 445 | Advanced Statistical Methods | 4 | Sp |

Note: Cannot double-count MATH 416 or MATH 417 in the electives list from which you select two courses.

Cognates

CHOOSE Category A or B

ONE COURSE from

**Category A**

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 405 | Physical Chemistry I | 3 | F |
| CSCI 312 | Computer Organization and Architecture I | 4 | F, Sp |
| CSCI 422 | Introduction to Computation Theory | 4 | Sp (As needed) |
| CSCI 423 | Analysis of Algorithms | 4 | F (odd years), Sp |
| ECON 314 | Intermediate Microeconomic Theory and Applications | 4 | F |
| ECON 315 | Intermediate Macroeconomic Theory and Analysis | 4 | Sp |
| MGT 249 | Business Statistics II | 4 | F, Sp, Su |
| MKT 333 | Market Research | 4 | F, Sp |
| PHIL 305W | Intermediate Logic | 4 | Sp (even years) |

ONE COURSE from

**Category B**

|  |  |  |  |
| --- | --- | --- | --- |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
|  | -And- |  |  |
| CSCI 211 | Computer Programming and Design | 4 | F, Sp |
|  | -Or- |  |  |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |

Total Credit Hours: 48-54

Mathematics Minor

Course Requirements

The minor in mathematics consists of a minimum of 21 credit hours (six courses), as follows:

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |
| MATH 248 | Business Statistics I | 4 | F, Sp, Su |

and at least THREE additional mathematics courses at the 300-level or above, except MATH 409.

Prior to enrolling in any mathematics course above 120, all students must have completed the College Mathematics Milestone.

Total Credit Hours: 21-24

Statistical Modeling Minor

Course Requirements

The minor in Statistical Modeling consists of a minimum of 20 credit hours (five courses), as follows:

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
|  |   |  |  |
| MATH 240 | Statistical Methods I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| MATH 248 | Business Statistics I | 4 | F, Sp, Su |
|  |   |  |  |
| MATH 245 | Principles of Data Science | 4 | F, Sp |
| MATH 345 | Linear Models for Data Science | 4 | F |
| MATH 445 | Advanced Statistical Methods | 4 | Sp |

Total Credit Hours: 20

Mathematical Studies M.A.

Admission Requirements

1. A completed application form accompanied by a $50 nonrefundable application fee.

2. Official transcripts of all undergraduate and graduate records.

3. A minimum cumulative grade point average of 3.00 on a 4.00 scale in undergraduate course work.

4. A minimum of 30 credit hours of courses beyond precalculus mathematics.

5. Three letters of recommendation.

6. A plan of study approved by the advisor and appropriate dean.

**BA/MA in Mathematical Studies Admission Option:**
Undergraduate students matriculated at Rhode Island College can apply for conditional admission to the Master of Arts in Mathematical Studies program after completing 60 undergraduate credits. Students conditionally admitted to the M.A. program begin taking graduate courses after completing 90 undergraduate credits. Students who remain in good standing and continue to meet admission requirements upon completion of the bachelors degree will be granted full admission to the M.A. program. Application requirements remain the same as above. Applicants must complete M300 and at least 6 of the required 12 math courses for the B.A. program prior to taking graduate level courses.

Degree Requirements

Core Courses

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 512 | Foundations of Higher Analysis | 3 | As needed |
| MATH 515 | Introduction to Complex Variables | 3 | As needed |
| MATH 519 | Set Theory | 3 | As needed |
| MATH 522 | Combinatorics | 3 | As needed |
| MATH 528 | Topology | 3 | As needed |
| MATH 530 | Advanced Linear Algebra | 3 | As needed |
| MATH 532 | Algebraic Structures | 3 | As needed |
| MATH 551 | Topics in Proof | 3 | As needed |

Course Requirements

THREE core courses chosen with the program director's consent.

9-12 additional credits in Mathematics at an appropriate level, chosen with program director's consent.

9-12 credits in Mathematics OR related disciplines chosen with Program Director's consent. Choices may include but are not limited to course in Mathematics Education, Computer Science, Physics, Finance or Economics.

Subtotal: 30-33

Feinstein School of Education and Human Development

Undergraduate Degree Programs

(*see also* Undergraduate Certificate Programs)

Jeannine Dingus-Eason, Dean

|  |  |  |
| --- | --- | --- |
|  | **Degree** | **Concentration** |
| Community and Public Health Promotion (p. ) | B.S. | Health and Aging  |
|   |   | Public Health Promotion |
|   |   | Women’s Health |
| Early Childhood Education (p. ) | B.S. | Concentration in Teaching(Certification for PreK–Grade 2) |
|  | B.S. | Concentration in Community Programs |
|   | B.S. | Concentration in Birth to Age Three  |
|  | **Degree**  | **Concentration/Content** |
| Elementary Education (p. ) | B.A. | Teaching Concentration in Middle Level General Science (Certification for Elementary Education Grades 1–6 and Science Middle Level Grades 5-8 ) |
|   | B.A. |  Teaching Concentration in Middle Level Mathematics (Certification for Elementary Education Grades 1–6 and Middle Level Mathematics Grades 5-8)  |
|   | B.S. | Concentration in Special Education (see options under Special Education (p. ))   |   |
|   | **Degree**  | **Content Major** |   |
|   | B.A. | English (Certification for Grades 1–6) *(Admission currently suspended)* |   |
|   | B.A. | Multidisciplinary Studies (Certification for Grades 1–6) *(Admission currently suspended)* |
|   | B.A. | Social Studies (Certification for Grades 1–6) *(Admission currently suspended)* |
|   |
|  | **Degree** | **Major** |
| Health Education (p. ) | B.S. |   |
| Physical Education (p. ) | B.S. |   |
| Secondary Education (p. ) | B.A. | Biology *This program is currently not accepting applications.* |
|   | B.A. | Chemistry *This program is currently not accepting applications.* |
|   | B.A. | English |
|   | B.A. | General Science  (with additional certification in one of the following: biology, chemistry, physics, or middle level education) |
|   | B.A. | History |
|   | B.A. | Mathematics |
|   | B.A. | Physics *This program is currently not accepting applications.* |
|   | B.A. | Social Studies |
|   | B.S. | Technology Studies |
| Special Education (p. ) | B.S. | Elementary Special Education  |
|   | B.S. | Elementary Special Education and Severe Intellectual Disabilities |
|   | B.S. | Severe Intellectual Disabilities, Ages Three to Twenty-One |
|  Wellness and Exercise Science (p. ) |  B.S.  |   |
| World Languages Education  (p. ) | B.A. | Concentration in French  |
|   | B.A. | Concentration in Portuguese  |
|   | B.A. | Concentration in Spanish  |
| Youth Development (p. ) | B.A. |   |

Note: For undergraduate art and music teacher certification programs, see Art Education B.S., Art Education B.F.A. or Music B.M.-with concentration in Music Education under Faculty of Arts and Sciences.

Also Note: Honors programs are offered in early childhood, elementary, secondary, and special education. Minors are offered in coaching, community and public health, and educational studies. A specialized program is available in adapted physical education, and an endorsement program is available in middle-school education.

– PLEASE NOTE –

All undergraduate full-degree programs require the completion of at least 120 credit hours, including (1) General Education requirements, (2) the college writing requirement, (3) the college mathematics milestone, and (4) the course requirements listed under each program.

For more details on graduation requirements, see Academic Policies and Requirements.

Minors

  (p. )Community and Public Health, Coaching, and Educational Studies.

Graduate Degree Programs

(*see also* Graduate Certificate Programs)

|  |  |  |
| --- | --- | --- |
| **Major** | **Degree** | **Concentration** |
| Advanced Studies in Teaching and Learning (p. ) | M.Ed. | *This program is currently not accepting applications.* |
| Counseling (p. ) | M.A. | School Counseling *(This program is undergoing redesign and is not accepting applications. We anticipate this process taking two years.)* |
| Counseling (p. ) | M.S. | Clinical Mental Health Counseling |
| Early Childhood Education (p. ) | M.Ed. |  |
| Education Doctoral Program (p. ) | Ph.D. |  |
| Educational Leadership (p. ) | M.Ed. | *(This program is undergoing redesign and is not accepting applications. We anticipate this process taking two years.)* |
| Elementary Education (p. ) (p. ) | M.A.T. |  |
| Elementary Education (p. ) | M.Ed. | (This program has suspended admissions.)  |
| Health Education (p. ) | M.Ed. | Health Education |
| Reading (p. ) | M.Ed. |  |
| School Psychology (p. ) | M.A./C.A.G.S. |  |
| Secondary Education (p. ) | M.A.T. |   |
|   | M.A.T. | Biology (This program is not accepting applications at this time.) |
|   | M.A.T. | English Pedagogy |
|   | M.A.T. | History (This program is not accepting applications at this time.) |
|   | M.A.T. | Mathematics Pedagogy |
|   | M.A.T.  | Pedagogy (This program is not currently accepting applications.) |
| Special Education (p. ) | M.Ed. | Early Childhood Special Education |
|  | M.Ed. | Elementary or Secondary Special Education |
|  | M.Ed. | Exceptional Learning Needs |
|  | M.Ed. | Severe Intellectual Disabilities (SID) |
|  | M.Ed. | Urban Multicultural Special Education |
| Teaching English to Speakers of Other Languages (p. ) | M.Ed. |  |
|   | M.Ed. | Bilingual Education  |
| World Languages Education (p. ) | M.A.T. |    |
| Youth Development (p. ) | M.A. |   |

Note: For graduate art and music teacher certification programs see M.A.T. in art education or M.A.T. in music education under the School of the Faculty of Arts and Sciences.

General Information

General Information for Undergraduate Programs

The Feinstein School of Education and Human Development provides undergraduate students with a wide­range of choices and opportunities for working with Rhode Island youth. The choices include a range of teacher certification programs for pre-school through high school to choices in community programs, working with youth of all age levels.

Upon admission to one of the Feinstein teacher preparation programs. students become teacher candidates and take courses many of which include extensive field experiences including observations, tutoring, and teaching in Rhode Island Schools. Programs for teacher preparation separated by grade levels include: Early Childhood Education, Elementary Education, Elementary Special Education, Middle Level and Secondary Education. Programs for teacher preparation for teaching students in grades Kindergarten through Twelve are: Art Education, Health Education, Music Education, Physical Education, World Languages, and Technology Education.

In addition, the Feinstein School of Education and Human Development offers a variety of community programs for students who want to work with Rhode Island youth and adults in varied community settings. These programs do not lead to teacher certification but provide our graduates with a broad range of employment opportunities.Additional information on community programs including early childhood, youth development and health and wellness follows: Application to Undergraduate Teacher Preparation Programs section of the catalog.

Application to Undergraduate Teacher Preparation Programs

Students who are in good standing at Rhode Island College may apply for admission to a teacher preparation program. For more information on the Admissions requirements and instructions for all undergraduate teacher preparation programs, see www.ric.edu/feinsteinSchoolEducationHumanDevelopment/Pages/assessment-admissions.aspx.

The instructions and admissions requirements for early childhood, elementary, secondary, special education, and all PK/K–12 programs are updated twice each year. Further information may be obtained from the office of the Associate Dean of FSEHD (Horace Mann) or from the appropriate department.

Students interested in the art education or music education program should contact the department chair as soon as they are admitted to the college for information about the required courses in the program and the requirements for admission to the program.

Most applicants acquire and complete the application materials while they are enrolled in FNED 246: Schooling for Social Justice. This course is a prerequisite for admission to all teacher preparation programs. Basic skills tests are required for admission and should be completed before or during enrollment in FNED 246. Transfer students must complete these tests as soon as possible. See #5 for information about test requirements.

Admission Requirements to Undergraduate Teacher Preparation Programs

The applicant’s academic performance and related experiences that indicate potential for success as a teacher are reviewed in the admission process. The application materials submitted by the student, listed below, must provide evidence of the following:

1.

**Credits:** Completion of at least **24 credit hours** at a nationally or regionally accredited college or university by the end of the semester in which the candidate applies for admission to a teacher preparation program.

2. **GPA:** A **minimum G.P.A. of 2.75** in all college courses taken at RIC prior to admission to a teacher preparation program.  Applicants whose GPA falls between 2.60 and 2.749 can apply for full admission with a GPA contingency.  The 2.75 GPA must be met before student teaching.Completion of the college mathematics milestone.

3. **Mathematics Milestone Requirement:** See RIC Math Milestone Requirement Information for completion of this requirement.

4.

**Writing Requirement:** The writing requirement can be met in the following ways:

• Earn a grade of B or better in FYW 100 or  100P, or an equivalent/transfer (as determined by RIC Admissions).

• Earn a score of 59 or better on the College Composition College Level Examination Program (CLEP) Test.

• Earn a score of 4 or 5 on the Advanced Placement (AP) Test for English Language and Composition.

5.

     **Basic Skills Tests.** All students in undergraduate initial teacher certification programs must take and pass basic skills tests (SAT, ACT, or Praxis Core) in math, reading and writing. Basic skills test information is also shared in FSEHD admission information sessions, in FNED 101 and 246 courses, by program advisors, and can be found on the FSEHD Undergraduate Programs and Admission page (See Testing Requirement at the bottom of the page.). Individuals with disabilities and nonnative speakers of English who plan to request alternative test administration should check in with the Disability Services Center in Fogarty Life Science room 137.

• Second Degree (Post-bachelors) students are **not required to submit** basic skills test scores.

• Students must meet the required scores for Math, Reading and Writing to be accepted in to the FSEHD.  See FSEHD Undergraduate Programs and Admission page (Testing Requirement at the bottom of the page.) for required scores and conditional admission score ranges.

• **Conditional Admission.** If any scores fall within the conditional range, students apply for conditional admission and are eligible for enrollment in a Math (CURR 232 Foundational School Mathematics for Teachers or Literacy (CURR 242 Foundational English Language Arts for Teachers) content module.

• If any test scores fall below the conditional admission range, students need to wait until the next semester to apply for admission**.**

6. **FNED 101.** Successful completion of FNED 101: Introduction to Teaching and Learning.

7. **FNED 246.** Completion of FNED 246: Schooling for Social Justice, with a minimum grade of B-. The minimum grade requirement applies even if an equivalent course from another institution is transferred to Rhode Island College.

8. **Submission of three FNED 246 Disposition Assessment Forms.** FNED 246 faculty submit an evaluation for each student enrolled. Each student will be given two links, one evaluation to be completed by the clinical supervisor practice and one to be completed as a student self- evaluation.

9.  **Program Specific Requirements.** Completion of program specific requirements. Each teacher preparation program has additional admissions requirements. Information about these requirements is available in the department to which the candidate is applying.

The admissions requirements above, can also be found at FSEHD Undergraduate Programs and Admission page (Scroll to the middle of the page).

FSEHD Community Service Requirement

FSEHD initial teacher candidates (undergraduate and second bachelors’ programs) must complete 25 hours of community service before student teaching. This requirement may be completed on an individual basis or through one or more of the courses in the program and generally begins with an experience during the FNED 246 course. See FSEHD Community Service Requirement.

Student Teaching Requirement

The FSEHD requires all teacher candidates (undergraduate, second degree, RITE, and M.A.T.) to complete all specific program requirements, pass the required Praxis exams, and complete the student teaching application prior to student teaching. See the FSEHD Office of Partnership and Placements (OPP) webpage for additional student teaching information.

Admission Requirements to Undergraduate Community Programs

Early Childhood (ECED) Community Programs, ECED Birth – 3, Community and Public Health Promotion, and Wellness and Exercise Science.

**Please note: Youth Development has its own requirements and application for admission. Visit the YDEV website for details.**

The applicant’s academic performance and related experiences that indicate potential for success are reviewed in the admission process. The application materials submitted by the student, listed below, must provide evidence of the following:

1.  **Credits:** Completion of at least **24 credit hours** at a nationally or regionally accredited college or university by the end of the semester in which the candidate applies for admission to a teacher preparation program.

2.**GPA:** A **minimum G.P.A. of 2.75** in all college courses taken at RIC prior to admission to a teacher preparation program.  Applicants whose GPA falls between 2.60 and 2.749 can apply for full admission with a GPA contingency.  The 2.75 GPA must be met before student teaching.

3.  **Mathematics Milestone Requirement:** See RIC Math Milestone Requirement Information for completion of this requirement.

4.  **Writing Requirement:** The writing requirement can be met in the following ways:

• Earn a grade of B or better in FYW 100 or 100P, or an equivalent/transfer (as determined by RIC Admissions)

• Earn a score of 59 or better on the College Composition College Level Examination Program (CLEP) Test

• Earn a score of 4 or 5 on the Advanced Placement (AP) Test for English Language and Composition.

6.  **FNED 101.** This requirement is ONLY for ECED B-3 and ECED Community programs. Successful completion of FNED 101: Introduction to Teaching and Learning.

• Submission of a student self-evaluation Disposition Assessment Form.

7.  **FNED 246.** This requirement is ONLY for ECED Community programs. Completion of FNED 246: Schooling for Social Justice, with a minimum grade of B-. The minimum grade requirement applies even if an equivalent course from another institution is transferred to Rhode Island College.

• **Submission of three FNED 246 Disposition Assessment Forms.** FNED 246 faculty submit an evaluation for each student enrolled. Each student will be given two links, one evaluation to be completed by the clinical supervisor practice and one to be completed as a student self- evaluation.

9.  **Program Specific Requirements.** Completion of program specific requirements. Each community program has additional admission requirements. Information about these requirements is available in the department to which the candidate is applying.

The admissions requirements above, can also be found at FSEHD Undergraduate Programs and Admission page (Scroll to the middle of the page).

Admission Procedures to Undergraduate Programs

Information about admission to the FSEHD undergraduate programs is provided by program advisors and can be found on the FSEHD Undergraduate Programs and Admission page (Scroll to the middle of the page.).  An admission orientation is provided each semester for students applying for admission the following semester.

• Students submit their FSEHD application for admission on Chalk and Wire, which is an online portfolio system.

• Once a student submits an application, the department chair in the respective department evaluates the information provided and makes a recommendation to the associate dean about the applicant’s admission to the FSEHD program. If an application is recommended for admission, the department chair also assigns an advisor to the applicant.

• The associate dean reviews the recommendation and each applicant who is accepted into a program is sent a letter of acceptance (via RIC email). Students who do not meet admissions requirements will be informed via email.

• Students accepted to the teacher preparation program become teacher candidates.

• Students who wish to transfer to or add another program within the FSHD school must inform the advisor or department chair of the decision and apply for admission to the new program. Information used in the original application may be used in the new application when appropriate.

Appeal Process

The applicant may appeal a decision for admission or re-admission to a program within 60 days of receiving the denial letter/email. The appeal may be based on policy or procedure and should be sent to the associate dean of the Feinstein School of Education and Human Development. Any applicant initiating an appeal must provide additional and substantiating evidence to support the appeal. Subsequent appeals should follow Rhode Island College policy for student appeals (see RIC **academic policies and procedures manual**.)

 Preparing to Teach Portfolio Requirement

The Feinstein School of Education and Human Development requires all teacher candidates in teacher preparation programs (undergraduate, second degree, RITE, and M.A.T.) to successfully complete a Preparing to Teach Portfolio prior to student teaching. In addition to program specific requirements the portfolio must also include two Feinstein School of Education and Human Development Assessments: a Teacher Candidate Mini Work Sample (TCMWS) and a Rhode Island Innovation Consortium Educator Evaluation (RI-ICEE) both of which are completed during one of the teacher candidate’s practicum courses. The portfolio must be rated as meeting standard or better for a teacher candidate to progress in and graduate from any teacher preparation program. General preparing to student teach requirements can be found on the Office of Partnerships and Placements page: www.ric.edu/feinsteinschooleducationhumandevelopment/Pages/Teacher-Candidates.aspx.

Faculty in each program evaluate the portfolios to insure all specific program requirements have been met. Once this is completed this information is sent to the associate dean.

Retention Requirement

All Feinstein School of Education and Human Development candidates are required to maintain an overall G.P.A. of 2.75 throughout their chosen program. Programs monitor the content G.P.A. as the required G.P.A. varies by program. Check with an advisor to learn about specific program requirements.

General Information for Undergraduate Feinstein School of Education and Human Development Community Programs

**The Department of Health and Physical Education offers two community programs: https://www.ric.edu/department-directory/department-health-and-physical-education/department-health-and-physical-education-undergraduate-programs**

**Community-Based Programs:** The Department of Health and Physical Education offers two community­based programs leading to a BS in Community and Public Health Promotion and a BS in Wellness and Exercise Science. These programs provide a rigorous plan of study grounded in theoretical foundations, research methods, along with evidence-informed, and reflective practice. Students receive practical application through required field-based experiences including a one-semester internship. Graduates from these programs are prepared for entry-level positions in their field and graduate study.

**B.S. in Community and Public Health Promotion:** Building on a public health foundation, students are prepared to positively influence the health of individuals and communities through interventions including education initiatives, policy changes, and health promotion programs. Students pursue coursework in community and public health topics such as human health and disease, nutrition, health policy, social and global perspectives on health, program planning and evaluation, pedagogy, epidemiology, and research and grant proposal writing in community and public health. Students acquire the knowledge, skills, and dispositions to promote health literacy and equity, and eliminate health disparities.

**B.S. in Wellness and Exercise Science:** Through a comprehensive curriculum, students acquire essential knowledge, skills, and competencies to provide a holistic perspective to wellness and exercise in a variety of fitness settings. Students pursue coursework in anatomy and physiology, motor development, kinesiology, exercise physiology, exercise prescription, health and wellness, fitness and wellness programming, and research in wellness and exercise science. Students are prepared to work in the exercise and wellness professions where they promote lifelong learning. personal fitness and wellness. and quality of life for various populations.

**The Department of Elementary Education offers two Early Childhood community programs: https://www.ric.edu/department-directory/department-elementary-education/department-elementary-education-undergraduate-programs/early-childhood-education-bs**

**Concentration in Community Programs:** The Elementary Education Department offers a Concentration in Community Programs leading to a B.S. in Early Childhood Education. This program provides a plan of study that encompasses coursework aligned to the Rhode Island Early Learning and Development Standards and focuses on early childhood development, effective teaching practices, principles of family engagement, and the integrated systems of early care and education. Students gain experience in classrooms through practicum courses and in early childhood community settings, such as community literacy programs, children's museums, or professional development organizations through a one-semester internship. Graduates from this program are prepared for early care and education positions including home-based service provider, family support specialist, child-care teacher, or education coordinator.

**Concentration in Birth to Three:** The Elementary Education Department offers a Concentration in Birth to Three leading to a B.S. in Early Childhood Education. This program provides a plan of study that was developed through collaboration with local and national leaders, and is aligned to the Zero to Three Competencies and the Rhode Island Early Leaming and Development Standards. The coursework encompasses principles of development in the early years, best practices for working with Infants, Toddlers, and their Families. Students engage in two semester long field placements and a one-semester internship in infant/toddler care and education settings. home-visiting programs, or Early Intervention. Graduates from this program are prepared to work with very young children and their families as a child care provider, home-based service provider, or Early Intervention provider.

**Educational Studies Youth Development Program: https://www.ric.edu/department-directory/department-educational-studies/department-educational-studies-undergraduate-programs/youth-development-ba**

**Youth Development B.A.Program at Rhode Island College:** The Youth Development B.A. Program prepares professional youth workers for careers with young people {ages 3-21) within afterschool programs, recreation centers, community arts centers, youth residential housing, justice and probation sites, youth ministry, and governmental agencies. In addition to coursework in social work and education. our graduates also earn a non-profit studies certificate where they develop leadership and management skills.

Admission Requirements to Graduate (M.A., M.A.T., M.S., M.Ed., C.A.G.S., and C.G.S.) Programs

Admission to the Feinstein School of Education and Human Development master’s level programs is determined by the quality of the total application. Applicants must submit the materials listed below to the associate dean of graduate studies as a measure of their potential for success in graduate-level studies.

1. **A completed online application form accompanied by a $50 nonrefundable application fee.** Graduate school information and the application are available online at www.ric.edu/graduatestudies/Pages/default.aspx.

2. **Official transcripts of all undergraduate and graduate records.**

3. **A bachelor’s degree with a minimum cumulative grade point average (GPA) of 3.00 on a 4.00 scale in all undergraduate course work.** Applicants with undergraduate GPAs less than 3.00 may be admitted to degree candidacy upon submission of other evidence of academic potential.

4. **A teaching certificate** (for all school-related programs, except school psychology and health education).

5.

**An official report of scores on the Graduate Record Examination or the Miller Analogies Test**, except MS CMHC, M.Ed. ECE, and C.G.S. candidates. The M.A.T. applicant has a different admissions test that varies by program. The applicant should check with the appropriate department or the associate dean’s office. – approved by Grad Committee spring 2019

6. **Three Candidate Reference Forms** accompanied by **three letters of recommendation.**

7. **A Professional Goals Essay.**

8. **A Performance-Based Evaluation.**

See individual programs for additional program-specific requirements.

# Community and Public Health Promotion

**Department of Health and Physical Education**

**Department Chair: Jason Sawyer**

**Community and Public Health Promotion Coordinator:** Soumyadeep Mukherjee

**Community and Public Health Promotion Program Faculty: Professor** Cummings; **Assistant Professors** Clark, Mukherjee, Sawyer

Students must consult with their assigned advisor before they will be able to register for courses. Students must present current certification in basic first aid, adult-child-infant CPR and AED in order to enroll in an internship.

Community and Public Health Promotion B.S.

Admission Requirements

1. Completion of 24 credits.

2. Minimum G.P.A. 2.75.

3. Completion of College Math Milestone.

4. Minimum grade of B in FYW 100.

5. Minimum of B- in HPE 102 and HPE 202.

6. Submission of HPE 202 Faculty Reference Form.

Retention Requirements

1. A minimum cumulative G.P.A. of 2.75 each semester.

2. A minimum grade of B- in all other required program courses, except for BIOL 108, BIOL 231, BIOL 240, BIOL 335, and PSYC 110 or PSYC 215, which, when needed, require a minimum grade of C.

Note: BIOL 108 fulfills the Natural Science category of General Education.

Note: BIOL 335 fulfills the Advanced Quantitative/Scientific Reasoning category of General Education.

Course Requirements

Core Foundation Courses

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 108 | Basic Principles of Biology | 4 | F, Sp, Su |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 240 | Biostatistics | 4 | As needed |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| HPE 101 | Human Sexuality | 3 | F, Sp, Su |
| HPE 102 | Human Health and Disease | 3 | F, Sp, Su |
| HPE 202W | Community/Public Health and Health Promotion | 3 | F, Sp |
| HPE 221 | Nutrition | 3 | F, Sp |
| HPE 233 | Social and Global Perspectives on Health | 3 | F, Sp, Su |
| HPE 303W | Research in Community and Public Health | 3 | F, Sp |
| HPE 307 | Introduction to Epidemiology | 3 | F, Sp |
| HPE 410 | Managing Stress and Mental/Emotional Health | 3 | F, Sp |
|  |   |  |  |
| HPE 431 | Drug Education | 3 | F |
|  | -Or- |  |  |
| PSYC 217 | Drugs and Chemical Dependency | 4 | F, Sp |
|  |   |  |  |
| PSYC 110 | Introduction to Psychology | 4 | F, Sp, Su |
|  | -Or- |  |  |
| PSYC 215 | Social Psychology | 4 | F, Sp, Su |

Professional Courses

|  |  |  |  |
| --- | --- | --- | --- |
| HPE 300 | Health Education and Health Promotion Pedagogy | 3 | F, Sp |
| HPE 406 | Program Planning in Health Promotion | 3 | Sp or as needed |
| HPE 419 | Practicum in Community and Public Health | 3 | F |
| HPE 426W | Internship in Community and Public Health | 10 | F, Sp, Su |
| HPE 429 | Seminar in Community and Public Health | 2 | F, Sp, Su |

Concentrations

Choose Concentration A, B or C below.

A. Health and Aging

|  |  |  |  |
| --- | --- | --- | --- |
| GRTL 314 | Health and Aging | 4 | F, Sp, Su |
| SOC 217 | Sociology of Aging | 4 | F, Sp, Su |
| SOC 320 | Aging and the Law | 4 | Annually |

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| COMM 336 | Health Communication | 4 | Sp |
| HPE 451 | Recreation and Aging | 3 | As needed |
| NPST 300 | Institute in Nonprofit Studies | 4 | F |
| PSYC 339 | Psychology of Aging | 4 | Annually |
| SOC 314 | The Sociology of Health and Illness | 4 | Annually |

Subtotal: 83-85

B. Public Health Promotion

|  |  |  |  |
| --- | --- | --- | --- |
| COMM 336 | Health Communication | 4 | Sp |
| HPE 403 | Environmental Health | 3 | Annually |
| HSCI 105 | Medical Terminology | 2 | F, Sp |

TWO COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| ANTH 309 | Medical Anthropology | 4 | Alternate years |
| ANTH 347 | Environmental Justice | 4 | Alternate years |
| GEND 416/HPE 416 | Women’s Health | 4 | Annually |
| HCA 303W | Health Policy and Contemporary Issues | 3 | F, Sp |
| HPE 431 | Drug Education | 3 | F |
| NPST 300 | Institute in Nonprofit Studies | 4 | F |
| PSYC 217 | Drugs and Chemical Dependency | 4 | F, Sp |
| PSYC 230 | Human Development | 4 | F, Sp, Su |
| PSYC 424 | Health Psychology | 4 | Annually |
| SWRK 200 | Introduction to Social Work | 4 | F, Sp, Su |
| SOC 314 | The Sociology of Health and Illness | 4 | Annually |
| YDEV 300W | Introduction to Youth Development | 4 | F, Sp |

Subtotal: 83-86

C. Women’s Health

|  |  |  |  |
| --- | --- | --- | --- |
| GEND 200W | Gender and Society | 4 | F, Sp |
| GEND 201W | Introduction to Feminist Inquiry | 4 | F |
| HPE 416/GEND 416 | Women’s Health | 4 | Annually |

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| COMM 332 | Gender and Communication | 4 | F |
| COMM 336 | Health Communication | 4 | Sp |
| GEND 355 | Women and Madness | 4 | Alternate years |
| GEND 356 | Class Matters | 4 | F |
| GEND 357 | Gender and Sexuality | 4 | F |
| GEND 358 | Gender-Based Violence | 4 | Alternate years |
| NPST 300 | Institute in Nonprofit Studies | 4 | F |
| PSYC 356 | Psychology of Gender | 4 | F, Sp |
| SOC 342 | Women, Crime, and Justice | 4 | F, Sp |

Subtotal: 84-85

Community and Public Health Minor

The minor in Community and Public Health Studies consists of 18-20 credit hours (6 courses), as follows:

Course Requirements

Foundation

|  |  |  |  |
| --- | --- | --- | --- |
| HPE 102 | Human Health and Disease | 3 | F, Sp, Su |
| HPE 202W | Community/Public Health and Health Promotion | 3 | F, Sp |
| HPE 307 | Introduction to Epidemiology | 3 | F, Sp |

Professional Courses

ONE COURSE from

|  |  |  |  |
| --- | --- | --- | --- |
| HPE 233 | Social and Global Perspectives on Health | 3 | F, Sp, Su |
| HPE 300 | Health Education and Health Promotion Pedagogy | 3 | F, Sp |
| HPE 303W | Research in Community and Public Health | 3 | F, Sp |

TWO COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| ANTH 237 | Measuring Inequality, Analyzing Injustice | 4 | Annually |
| ANTH 309 | Medical Anthropology | 4 | Alternate years |
| COMM 336 | Health Communication | 4 | Sp |
| GEND 357 | Gender and Sexuality | 4 | F |
| HPE 101 | Human Sexuality | 3 | F, Sp, Su |
| HPE 221 | Nutrition | 3 | F, Sp |
| HPE 403 | Environmental Health | 3 | Annually |
| HPE 410 | Managing Stress and Mental/Emotional Health | 3 | F, Sp |
| HPE 416/GEND 416 | Women’s Health | 4 | Annually |
| HPE 431 | Drug Education | 3 | F |
| PSYC 424 | Health Psychology | 4 | Annually |
| SOC 314 | The Sociology of Health and Illness | 4 | Annually |

Total Credit Hours: 18-20

**Note:** ANTH 309 uses HPE 233 (among others) as a prerequisite.

# Wellness and Exercise Science

**Department of Health and Physical Education**

**Department Chair:**Jason Sawyer

**Wellness and Exercise Science Coordinator:** Jason Sawyer

**Wellness and Exercise Science Program Faculty: Professor** Castagno; **Associate Professors**Auld, Cummings, Tunnicliffe; **Assistant Professors** Clark, Mukherjee, Pepin, Sawyer.

Students must consult with their assigned advisor before they will be able to register for courses. Students must present current certification in basic first aid, adult-child-infant CPR, and AED in order to enroll in an internship.

Wellness and Exercise Science B.S.

Admission Requirements

1. Completion of 24 credits.

2. Minimum G.P.A. of 2.75.

3. Completion of College Math Milestone.

4. Minimum Grade of B in FYW 100.

5. Minimum of B- in HPE 140 and HPE 205.

6. Submission of HPE 205 Faculty Reference Form.

Retention Requirements

1. A minimum cumulative G.P.A. of 2.75 each semester.

2. A minimum grade of B- in all other required program courses, except for BIOL 108, BIOL 231, BIOL 335, and PSYC 110 or PSYC 215, which, when needed, require a minimum grade of C.

Note: BIOL 108 fulfills the Natural Science category of General Education.

Note: BIOL 335 fulfills the Advanced Quantitative/Scientific Reasoning category of General Education.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 108 | Basic Principles of Biology | 4 | F, Sp, Su |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
|  |   |  |  |
| ENGL 230W | Workplace Writing | 4 | F, Sp, Su |
|  | -Or- |  |  |
| MKT 201W | Introduction to Marketing | 4 | F, Sp, Su |
|  |   |  |  |
| HPE 102 | Human Health and Disease | 3 | F, Sp, Su |
| HPE 140 | Foundations: Physical Education and Exercise Science | 3 | F, Sp |
| HPE 201 | Prevention and Care of Athletic Injuries | 3 | Sp |
| HPE 205 | Conditioning for Personal Fitness | 3 | F, Sp |
| HPE 221 | Nutrition | 3 | F, Sp |
| HPE 233 | Social and Global Perspectives on Health | 3 | F, Sp, Su |
| HPE 243 | Motor Development and Motor Learning | 3 | F, Sp |
| HPE 278 | Coaching Skills and Tactics | 3 | F, Sp |
| HPE 301W | Principles of Teaching Activity | 3 | F, Sp |
| HPE 303W | Research in Community and Public Health | 3 | F, Sp |
| HPE 309W | Exercise Prescription | 3 | F |
| HPE 406 | Program Planning in Health Promotion | 3 | Sp or as needed |
| HPE 410 | Managing Stress and Mental/Emotional Health | 3 | F, Sp |
| HPE 411 | Kinesiology | 3 | F, Su |
| HPE 420 | Physiological Aspects of Exercise | 3 | F, Sp |
| HPE 421 | Senior Lecture: Wellness and Exercise Science | 3 | F |
| HPE 427 | Internship in Wellness and Exercise | 10 | F, Sp, Su |
| HPE 430 | Seminar in Wellness and Exercise | 2 | F, Sp, Su |
|  |   |  |  |
| PSYC 110 | Introduction to Psychology | 4 | F, Sp, Su |
|  | -Or- |  |  |
| PSYC 215 | Social Psychology | 4 | F, Sp, Su |

TWO COURSES from

|  |  |  |  |
| --- | --- | --- | --- |
| HPE 244 | Group Exercise Instruction | 3 | Sp |
| HPE 307 | Introduction to Epidemiology | 3 | F, Sp |
| HPE 308 | The Science of Coaching | 3 | Sp |
| HPE 310 | Strength and Conditioning for the Athlete | 3 | F |
| HPE 404 | School Health and Physical Education Leadership | 3 | Sp |
| HPE 408 | Coaching Applications | 3 | F |
| HPE 451 | Recreation and Aging | 3 | As needed |
| SOC 217 | Sociology of Aging | 4 | F, Sp, Su |

Total Credit Hours: 85-87

Table of Contents

School of Business

Marianne Raimondo, Interim Dean

Undergraduate Degree Programs

|  |  |  |
| --- | --- | --- |
| **Major** | **Degree** | **Concentration** |
| Accounting | B.S. |  |
| Economics | B.A. |  |
| Finance | B.S. |  |
| Health Care Administration | B.S. |  |
| Management | B.S. | General Management |
|  | B.S. | Human Resource Management |
|  | B.S. | Operations Management |
| Marketing | B.S. |  |

*Note: Minors are offered in all the degree programs listed above, as well as an International Business Minor. Honors programs are also offered in these degree programs, except for health care administration.*

– PLEASE NOTE –

All undergraduate full-degree programs require the completion of at least 120 credit hours, including (1) General Education requirements, (2) the College Writing Requirement, (3) the College Mathematics Milestone, and (4) the course requirements listed under each program. For more details on graduation requirements, see Academic Policies and Requirements.

Graduate Degree Programs

|  |  |  |
| --- | --- | --- |
| **Major** | **Degree** | **Concentration** |
| Health Care Administration | M.S. |  |
| Operations Management | M.S. | PROGRAM SUSPENDED |
| Professional Accountancy | M.P.Ac. | Accounting |
|  | M.P.Ac. | Personal Financial Planning |

Nursing B.S.N.

Carolynn Masters, Dean, Onanian School of Nursing

Bethany Petronio-Defanti, Associate Dean, Onanian School of Nursing

**Undergraduate Department Chair:**Sharon Galloway

**B.S.N. Undergraduate Program Director**: Lisa Connelly

**B.S.N. Program Faculty: Professor**Byrd**; Associate Professors** Blanchette, Blasdell, Galloway, Huntley-Newby, Kutenplon, Petronio-Defanti, Ross, N. Smith; **Assistant Professors** Bargteil, Boucher, de Gouvenain, DeNuccio, Fagre, Fearon-Lynch, Griffin, Hersperger, Lanzieri, Mendonça, Raposo, Sadlon, Schneider, Wholey, Williams**; Instructors** Gutierrez, Sarasin

**Simulation Director:** Penni Sadlon

Application to the School of Nursing

Admission to the School of Nursing is highly competitive. The applicant’s academic performance, indicating potential for success as a nurse, is reviewed and considered carefully in the admission process. The criteria listed below are minimum admission requirements and do not guarantee admission to the nursing program. Students admitted to the college as freshmen are given preference. Transfer and second-degree candidates are welcome to apply for a limited number of spaces.

Application Requirements for All General Declared Nursing Majors

1. Completion of Enrollment Form signed by the faculty advisor and submitted to the School of Nursing by **October 15** or **April 15** of the preceding semester. Students may apply to the nursing program no more than three times if they were not accommodated. Students who receive a denial may apply twice.

2. Completion of the college mathematics milestone and writing requirements.

3. A minimum cumulative grade point average of 3.00 on a 4.00 scale.

4. Completion of BIOL 231, CHEM 106, and PSYC 230, with a minimum grade of C; and a minimum overall grade point average of 2.67 (B-) in these courses.

Application Requirements for R.N. Students (with an associate's degree in nursing or hospital diploma)

1. Admission to Rhode Island College through the Office of Undergraduate Admissions at https://www.commonapp.org/ and declaration of nursing as the major.

2. After acceptance to the College, completion of second Enrollment Form signed by the faculty advisor and submitted to the School of Nursing by November 15 or April 15 of the semester prior to NURS 316.

3. Completion of NURS 207 and NURS 225 with a minimum grade of C.

4. Completion of the college mathematics milestone and writing requirements.

5. A minimum cumulative grade point average of 2.50.

6. Current unrestricted Rhode Island R.N. licensure.

Upon admission to the School of Nursing, criminal background investigation verification is required.

Admission Requirements for R.N. students applying to the R.N. to B.S.N. Program as second degree candidates are noted below under “Admission Requirements for Second Degree Candidates."

Application Requirements for Lateral Transfer Students

Students within the Rhode Island College community who desire a change of major to nursing must go to the B.S.N. Program director to request the change. The Undergraduate Department Chair will process the change of major through campus solutions.

Application Requirements for Transfer Students

Transfer students accepted into the college will need to file an Enrollment Form and will need to meet the same requirements as all general declared nursing majors. Nursing students transferring from other nursing programs are required to forward a letter of recommendation from the head of the previous program.

Application Requirements for Second Degree Candidates

Second degree candidates must first apply to the college through the Office of Undergraduate Admissions at https://www.commonapp.org/. Once all application materials are received and processed, a plan of study will be formulated with the B.S.N. program director.Acceptance as a second-degree student does not guarantee admission to the School of Nursing. The student should contact their nursing advisor regarding eligibility to make formal application to the school. Second degree candidates may petition to take the five beginning-level courses (NURS 220, NURS 222, NURS 223, NURS 224, and NURS 225) in one semester on a space-available basis if all cognate courses are completed.

Admission Requirements for Registered Nurse Second Degree students applying to the R.N. to B.S.N. Program include submission of the admission application to the Office of Undergraduate Admissions by June 1 for fall semester enrollment or by November 1 for spring semester enrollment. Once the application and all credentials have been received, the admissions office notifies the R.N. to B.S.N. candidate to schedule an appointment with the B.S.N. program director to determine the courses needed to meet the requirements for the second bachelor’s degree. Upon admission to the college, the R.N. to B.S.N. second-degree candidate will meet with an advisor to submit the second Enrollment Form to apply to the R.N. to B.S.N. Program.

Retention Requirements for All General Declared Nursing Majors

1. Completion of required prerequisite courses (cognate and nursing courses).

2. Completion of cognates before the junior year (intermediate level).

3. A minimum grade of C in each nursing course. Only one nursing course may be repeated. Students who sustain another failure (a grade below a C) in any nursing course will be dismissed from the program.

4. A minimum grade of C in each cognate course. Students with a grade of C- or below in a cognate course will have the option to progress in nursing (probationary status) for one semester while repeating the course in question.

5. Due to the rigors of the program and retention policies, enrollment in required nursing courses is limited to 12 credits per semester.

6. The School of Nursing will notify students who have not met the retention criteria. The faculty of the School of Nursing reserves the right to require withdrawal or dismissal of a student who shows evidence, academically or personally, of an inability to carry out professional responsibilities in nursing. Students are expected to adhere to the School of Nursing code of academic honesty. Students have the right to appeal through the Student Outcomes Committee and the dean of the School of Nursing.

Retention Requirements for RN Students

1. A minimum grade of C in each nursing course. Only one nursing course may be repeated. Students who sustain another failure (a grade below a C) in any nursing course will be dismissed from the program.

2. Due to the rigors of the program and retention policies, enrollment in required nursing courses is limited to 12 credits per semester.

3. The School of Nursing will notify students who have not met the retention criteria. The faculty of the School of Nursing reserves the right to require withdrawal or dismissal of a student who shows evidence, academically or personally, of an inability to carry out professional responsibilities in nursing. Students are expected to adhere to the School of Nursing code of academic honesty. Students have the right to appeal through the Student Outcomes Committee and the dean of the School of Nursing.

Health Requirements

Every year students must provide the Health and Wellness Office with evidence of a negative PPD test or compliance with treatment. Before beginning some clinical nursing courses, students may be expected to meet additional health requirements. All nursing students must provide the following documentation:

1. A physical examination.

2. Two measles immunizations.

3. One rubella (German measles) immunization.

4. One mumps immunization.

5. One dose of tetanus/diphtheria/pertussis (Tdap) if it has been two or more years since last dose of tetanus/diphtheria (Td).

6. Hepatitis B vaccine (a series of three immunizations over a six-month period).

7. Annual QuantiFERON Gold negative blood test or an initial 2-step PP tuberculin skin test and yearly PPD updates.

8. Proof of chicken pox disease or immunization.

9. Influenza vaccine or declination form

10. COVID-19 Vaccination

Students will not be admitted to the first class meeting of a nursing practicum course without having complied with the health requirements. Proof of immunization may be obtained from your physician, high school, previous college or university, military record, and/or from blood titers.

Nursing majors should follow the guidelines on the college immunization form or call Health and Wellness at (401) 456-8055 for further information. Once all required information has been entered into a student's Patient Portal (instructions are on the Health Services website), and verified by Health and Wellness, the student is able to print a document of their immunization status.

Clinical Placements

Clinical learning provides students with the opportunity to carry out nursing care for persons of all ages and in all stages of the health-illness spectrum. The School of Nursing retains the right to place and schedule students in appropriate clinical settings. Although every effort will be made to place all students, it is possible that in any given semester sufficient placements may not be available. Students in clinical courses are responsible for their own transportation to the clinical area. Affiliating agencies require students to consent to criminal background checks; therefore, students must have periodic Background Criminal Investigation (BCI) checks.

Licensure

Graduates of the nursing program are eligible to take NCLEX-RN for licensure as a registered nurse in any state. An applicant who has been convicted of a felony may not be awarded a license by the Rhode Island Board of Nurse Registration and Nursing Education. For more information, contact the dean of the School of Nursing.

Nursing Fee

The School of Nursing contracts with educational resource companies to provide students with comprehensive testing and review materials, which enhance the program. Nursing students are billed by the college each semester for these services.

Handbook

The School of Nursing *Handbook for*  *Undergraduate Students in Nursing* provides detailed and essential information about the undergraduate nursing program. It is available online at www.ric.edu/nursing.

Students **must** consult with their advisor each semester before registering for courses. **ALL students must be certified for CPR BLS Provider Level every two years through the American Heart Association.**

Course Requirements - All General Declared Nursing Majors

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| NURS 220 | Foundations of Therapeutic Interventions | 3 | F, Sp |
| NURS 222 | Professional Nursing I | 3 | F, Sp |
| NURS 223 | Fundamentals of Nursing Practice | 4 | F, Sp |
| NURS 224 | Health Assessment | 3 | F, Sp |
| NURS 225W | Introduction to Writing and Research in Nursing | 2 | F, Sp |
| NURS 340 | Psychiatric/Mental Health Nursing | 6 | F, Sp |
| NURS 342 | Adult Health Nursing I | 6 | F, Sp |
| NURS 344 | Maternal Newborn Nursing | 6 | F, Sp |
| NURS 346 | Nursing of Children and Families | 6 | F, Sp |
| NURS 370 | Public and Community Health Nursing | 6 | F, Sp |
| NURS 372 | Adult Health Nursing II | 6 | F, Sp |
| NURS 374 | Contemporary Professional Nursing | 3 | F, Sp |
| NURS 375 | Transition to Professional Nursing Practice | 6 | F, Sp |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| BIOL 348 | Microbiology | 4 | F, Sp, Su |
| CHEM 106 | General, Organic, and Biological Chemistry II | 4 | F, Sp, Su |
| PSYC 230 | Human Development | 4 | F, Sp, Su |

Subtotal: 80

Course Requirements - Registered Nurse Students

*(Licensed graduates of accredited associate degree or hospital schools of nursing)*

Course

|  |  |  |  |
| --- | --- | --- | --- |
| NURS 207 | Baccalaureate Education for Nursing | 4 | F, Sp |
| NURS 225W | Introduction to Writing and Research in Nursing | 2 | F, Sp |
| NURS 316 | Physical Assessment of the Adult and Child | 4 | Sp |
| NURS 370 | Public and Community Health Nursing | 6 | F, Sp |
| NURS 376 | Contemporary Nursing Practices: Issues and Challenges | 6 | F, Sp |
|  | Nursing Transfer Electives | 37 |  |

*Note: R.N. to B.S.N. students must meet the minimum residency requirement of 45 credits and 120 credits for graduation, as well as the General Education requirements.*

Subtotal: 59

# BIOL - Biology

BIOL 100 - Fundamental Concepts of Biology (4)

Unifying concepts from various levels of biological organization are considered. This course is for students pursuing studies other than the natural sciences. Lecture and laboratory. 6 contact hours. Not open to biology and clinical laboratory science majors. Students cannot receive credit for both BIOL 100 and BIOL 109.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone.

Offered: Fall, Spring, Summer.

BIOL 103 - Human Biology (3)

The fundamental principles and concepts of biology as they pertain to the human organism are introduced. This course is intended for students who are pursuing studies in areas other than the natural sciences. Lecture.

Prerequisite: Completed college mathematics milestone.

Offered: Fall, Spring, Summer.

BIOL 108 - Basic Principles of Biology (4)

Basic biological principles are introduced. This course prepares students for courses in anatomy, physiology, and microbiology. Lecture and laboratory (dissection included). 6 contact hours. Not open to biology majors.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone.

Offered: Fall, Spring, Summer.

BIOL 111 - Introductory Biology I (4)

Emphasis is on the molecular and cellular nature of living systems. This course is intended for science majors and any student with an interest in science. Lecture and laboratory. 6 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone.

Offered: Fall, Spring, Summer.

BIOL 112 - Introductory Biology II (4)

Emphasis is on organismal and ecological levels of organization. This course is intended for science majors and any student with an interest in science. Lecture and laboratory (dissection included). 6 contact hours.

General Education Category: Natural Science.

Prerequisite: BIOL 111 with a minimum grade of C-.

Offered: Fall, Spring, Summer.

BIOL 213W - Plant and Animal Form and Function (4)

Students explore multicellularity by examining the anatomical and physiological adaptations of plants and animals to the common challenges of life. Mathematical problem-solving and scientific writing skills are practiced throughout. This is a Writing in the Discipline (WID) course.

Prerequisite: BIOL 111 and BIOL 112, with a minimum grade of C.

Offered: Fall, Spring.

BIOL 231 - Human Anatomy (4)

By using a systematic approach, study is made of the human organism with respect to the histological and gross anatomy. Lecture and laboratory (dissection included). 6 contact hours.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better, or BIOL 108, with a grade of C or better.

Offered: Fall, Spring, Summer.

BIOL 240 - Biostatistics (4)

Elementary probability theory serves as a foundation to learn research design, sampling, hypothesis testing, and statistical inferences in biology. Students use SPSS to statistically analyze problems typical of biological research.

Prerequisite: Completion of college mathematics milestone and a grade of C or better in BIOL 100, BIOL 108 or BIOL 112.

Offered: As needed.

BIOL 241 - Biology Research Colloquium (0.5)

Students attend formal scientific research seminars given by invited outside speakers from diverse fields of biology. Students discuss the research with the speaker and their peers. This course must be taken for two semesters. Graded S, U.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better, or BIOL 108, with a grade of C or better.

Offered: Fall, Spring.

BIOL 261 - The World's Forests (4)

Interactions between people and the three major types of forests of the world (boreal, temperate, and tropical) are explored from historical, ecological, cultural, socioeconomic, environmental, and ethical perspectives.

General Education Category: Connections.

Prerequisite: FYS 100, FYW 100/FYW 100P/FYW 100H, and at least 45 credits.

Offered: Fall (even years).

BIOL 314 - Genetics (4)

A balanced treatment of classical Mendelian concepts, population topics, and the recent advances in molecular genetics are presented. Lecture and laboratory. 6 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better.

Offered: Fall.

BIOL 318 - Ecology (4)

The ecosystem is introduced. Emphasis is on how the interaction of environmental factors has shaped, influenced, and controlled the distribution of biomes, communities, and populations. Lecture, laboratory, and field trips. 6 contact hours.

Prerequisite: : BIOL 111 and BIOL 112, with a grade of C or better, and BIOL 213 or BIOL 213W.

Offered: Fall.

BIOL 320 - Cell and Molecular Biology (4)

The structure and function of cells as living units are presented. Cell metabolism, reproduction, and steady-state controls are discussed. The biochemical and ultrastructural nature of cells is examined. Lecture and laboratory. 6 contact hours.

Prerequisite: BIOL 111, BIOL 112, with a grade of C or better, BIOL 314; CHEM 205.

Offered: Spring.

BIOL 321 - Invertebrate Zoology (4)

Study is made of common invertebrate types, their life histories, adaptive morphology, and physiology, with respect to their environment and to their phylogenetic position. Lecture and laboratory.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better.

Offered: As needed.

BIOL 324 - Vertebrate Zoology (4)

The origin, evolution, life history, and adaptation of the subphylum vertebrata are studied. Local fauna is stressed in the laboratory. Lecture and laboratory. 6 contact hours.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better.

Offered: As needed.

BIOL 329 - Comparative Vertebrate Anatomy (4)

Comparison of the anatomy and functions of the vertebrates from the evolutionary point of view is presented. Included is detailed dissection of selected representatives from five classes of vertebrates. Lecture and laboratory. 6 contact hours.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better.

Offered: As needed.

BIOL 330 - Developmental Biology of Animals (4)

A descriptive and experimental approach is applied to animal ontogeny, with consideration of cell fate determination, differentiation, morphogenesis, and pattern formation. Lecture and laboratory. 6 contact hours.

Prerequisite: BIOL 111, BIOL 112, with a grade of C or better and BIOL 314.

Offered: As needed.

BIOL 335 - Human Physiology (4)

Basic principles of physiology are introduced, with emphasis on homeostatic mechanisms. Attention is given to the functions of organ systems and coordination in the whole human organism. 6 contact hours.

General Education Category: Gen. Ed. Advanced Quantitative/Scientific Reasoning.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better, or BIOL 108, with a grade of C or better and BIOL 231.

Offered: Fall, Spring, Summer.

BIOL 348 - Microbiology (4)

Microbial structure and metabolism, dynamics of microbial populations, disease causation, microbial genetics, and virology are presented. Lecture and laboratory. 6 contact hours.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better, or BIOL 108, with a grade of C or better.

Offered: Fall, Spring, Summer.

BIOL 353 - The Plant Kingdom (4)

The major groups of plants are surveyed, with emphasis on evolutionary aspects, reproductive strategies, and ecological interrelationships. Structural features of plant cells, tissues, and organs are emphasized. Lecture and laboratory. 6 contact hours.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better, or consent of instructor.

Offered: As needed.

BIOL 354 - Plant Growth and Development (4)

Topics include photophysiology, nitrogen metabolism, phytohormones, translocation, mineral nutrition, and the anatomical structures associated with these processes. Lecture and laboratory. 6 contact hours.

Prerequisite: BIOL 111 and BIOL 112, with a grade of C or better, or consent of instructor.

Offered: As needed.

BIOL 421 - Biochemistry of Energy Metabolism (3)

The physical and chemical properties of carbohydrates and lipids are presented. Students cannot receive credit for both BIOL 421 and CHEM 421. Lecture.

Prerequisite: Completed college mathematics milestone, CHEM 206 and either BIOL 320 or CHEM 310.

Offered: As needed.

BIOL 429 - Medical Microbiology (4)

This is a study of medically important microorganisms, with emphasis on the molecular mechanisms of pathogenicity. 6 contact hours.

Prerequisite: BIOL 348; CHEM 205, CHEM 206.

Offered: As needed.

BIOL 431 - Immunology (3)

This is a study of animal immune responses, with emphasis on the properties of antigens and immunoglobulins, cellular communication, pathology, and the development and regulation of humoral and cellular immunity. Lecture.

Prerequisite: BIOL 111, BIOL 112, with a grade of C or better; CHEM 205; or consent of department chair.

Offered: As needed.

BIOL 435 - Comparative Animal Physiology (3)

This is an exploration of diverse physiological adaptations to environmental conditions. Particular emphasis is placed on the wide variety of mechanisms that animals use to cope with diverse environmental conditions.

Prerequisite: BIOL 111, BIOL 112 with a grade of C or better, and BIOL 314.

Offered: As needed.

BIOL 440 - Evolution (3)

An interdisciplinary approach is used to examine evolutionary trends of plants and animals, the origin of life, molecular evolution, and speciation. Lecture.

Prerequisite: BIOL 314.

Offered: As needed.

BIOL 443 - Fundamentals of Neurobiology (4)

A comprehensive survey of central nervous system (CNS) biology is presented. Emphasis is placed on molecular, cellular and physiological processes of the nervous system. 6 contact hours.

Prerequisite: BIOL 111, BIOL 112 and BIOL 314.

Offered: As needed.

BIOL 460W - Biology Senior Seminar (3)

Topics covering the breadth of biology content are synthesized in this capstone experience. Skills emphasized are writing and oral presentation in science. A content examination and literature review are required. Graded H, S, U. This is a Writing in the Discipline (WID) course.

Prerequisite: Senior status (90 credit hours successfully completed), BIOL 111, BIOL 112, with a grade of C or better, BIOL 314, BIOL 318, BIOL 320; or consent of department chair.

Offered: Fall, Spring.

BIOL 491-494 - Research in Biology (1)

The experimental aspects and recent advances in different fields of biology are examined. Research projects and papers on the work accomplished are required. Not open to students enrolled in the M.A. program in biology.

Prerequisite: Two 300-level biology courses and consent of instructor, department chair and dean.

Offered: Fall, Spring, Summer

BIOL 526 - Molecular Cell Physiology (3)

Topics may include solution chemistry, membrane structure, gene regulation, homeostasis, and cell organelle structure and function. Lecture.

Prerequisite: Graduate status, BIOL 320, CHEM 205, CHEM 206.

Offered: As needed.

BIOL 531 - Mammalian Endocrinology (3)

Topics include neuroendocrinology, hypothalamic-pituitary relationships, mechanisms of hormone action, endocrine aspects of reproduction, carbohydrate metabolism, calcium homeostasis, and water/electrolyte balance. Lecture.

Prerequisite: Graduate status, two 300-level or above biology courses and consent of department chair.

Offered: As needed.

BIOL 532 - Advanced Developmental Biology (4)

The molecular regulation of development, differentiation, control of the cell cycle, and regeneration are examined, with emphasis on recent research. Lecture and laboratory. 6 contact hours.

Prerequisite: Graduate status, BIOL 314, BIOL 320, BIOL 330, or equivalents.

Offered: As needed.

BIOL 533 - Research Methods in Molecular Biology (4)

Students undertake a single semester-long research project, which requires the integration of diverse biological facts, principles, and techniques in order to answer a novel biological question.

Prerequisite: Graduate status or senior undergraduate status, with consent of department instructor, chair and dean.

Offered: As needed.

BIOL 535 - Advanced Physiology I (4)

Examination of human physiology and pathophysiology in relationship to anesthesia practice. This course will utilize a systems approach to the topics of cellular physiology, neurophysiology, cardiovascular and respiratory physiology.

Prerequisite: Enrollment in the M.S.N. nurse anesthesia program or permission of the instructor.

Offered: Fall.

BIOL 536 - Advanced Physiology II (4)

Continuation of the examination of human physiologic concepts. This course will utilize a systems approach to the topics of renal and acid-base, gastrointestinal, and endocrine concepts.

Prerequisite: Graduate status and BIOL 535.

Offered: Spring.

BIOL 560 - Graduate Seminar (1)

Students investigate a current biological topic using primary literature and develop skills that contribute to effective oral and written presentations in science.

Prerequisite: Graduate status. Open to undergraduates with consent of instructor, department chair and dean.

Offered: Fall.

BIOL 651-654 - Advanced Topics in Biology (1-4)

Individual study is provided under the direction of a faculty member of the biology department. Topics vary.

Prerequisite: Normally open only to students enrolled in the M.A. program in biology.

Offered: Fall, Spring, Summer.

BIOL 691-696 - Directed Research (1-6)

Students investigate an experimental question in biology under the direction of an advisor.

Prerequisite: Enrollment in the C.G.S. in Modern Biological Sciences or M.A. in Biology program and consent of advisor and department chair.

Offered: Fall, Spring, Summer.

# CHEM - Chemistry

CHEM 103 - General Chemistry I (4)

Topics include atomic theory, periodicity, bonding, reactions, stoichiometry, gas laws, and thermochemistry. Laboratory experiments illustrate these concepts and develop laboratory techniques. Lecture and laboratory. 7 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone or appropriate score on the math placement exam.

Offered: Fall, Spring, Summer.

CHEM 103H - Honors General Chemistry I (4)

For students with a good background in science and mathematics. Topics are listed in and experiments are similar to CHEM 103, with increased emphasis on instrumentation and independent work. Lecture and laboratory. 7 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone or appropriate score on the math placement exam.

Offered: As Needed.

CHEM 104 - General Chemistry II (4)

Topics include states of matter, solutions, kinetics, acids and bases, equilibrium theory, thermodynamics, and electrochemistry. Lecture and laboratory. 7 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 103 or equivalent with a minimum grade of C-.

Offered: Spring, Summer.

CHEM 104H - Honors General Chemistry II (4)

For students with a good background in science and mathematics. Topics are listed in and experiments are similar to CHEM 104, with increased emphasis on instrumentation and independent work. Lecture and laboratory. 7 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 103H or equivalent with a minimum grade of C-.

Offered: As Needed.

CHEM 105 - General, Organic and Biological Chemistry I (4)

General chemistry in preparation for studying organic and biochemistry is introduced, including structure, bonding, energy, reactions, rates, equilibrium, acids and bases; and from organic chemistry, alkanes and alkenes. Lecture and laboratory. 6 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone or appropriate score on the math placement exam.

Offered: Fall, Spring, Summer.

CHEM 106 - General, Organic, and Biological Chemistry II (4)

Topics include alcohols, carbonyl compounds, amines, amides, carbohydrates, lipids, proteins, enzymes, bioenergetics, catabolism, biosynthesis, nucleic acids, hormones, and neurotransmitters. Lecture and laboratory. 6 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 104 or CHEM 105 with a minimum grade of C-.

Offered: Fall, Spring, Summer.

CHEM 205W - Organic Chemistry I (4)

Topics include structure, stereochemistry, nomenclature, and chemistry of hydrocarbons and alkyl halides, spectroscopy, reaction mechanisms, and computational chemistry. Lecture and laboratory. 7 contact hours.

Prerequisite: CHEM 104 with a minimum grade of C-.

Offered: Fall.

CHEM 206W - Organic Chemistry II (4)

Topics include reactions of functional groups, synthesis and mechanism, spectroscopic identification, and topics in biochemistry and computational chemistry. Lecture and laboratory. 7 contact hours.

Prerequisite: CHEM 205W.

Offered: Spring.

CHEM 310 - Biochemistry (4)

Topics include biological macromolecule structure, function and interactions, catalysis and kinetics of biochemistry, acid-base equilibrium in biological systems, and thermodynamics of binding and recognition. Lecture.

Prerequisite: CHEM 206W.

Offered: Fall.

CHEM 403 - Inorganic Chemistry I (3)

Topics include electronic structure of atoms, molecular symmetry, bond theories, acid-base chemistry, solids, redox and coordination chemistry.

Prerequisite: CHEM 206W.

Offered: Fall.

CHEM 404W - Analytical Chemistry (4)

Topics include the principles and applications of volumetric, gravimetric, and selected instrumental methods of analysis, including potentiometric and spectroscopic methods. Lecture and laboratory. 6 contact hours.

Prerequisite: CHEM 104

Offered: Spring (even years).

CHEM 405 - Physical Chemistry I (3)

Through rigorous quantitative approaches, properties of gases, kinetic molecular theory, thermodynamics, statistical mechanics, and chemical and phase equilibrium are presented. Differential and integral calculus are used extensively. Lecture.

Prerequisite: CHEM 104, MATH 213, and PHYS 102.

Offered: Fall.

CHEM 406 - Physical Chemistry II (3)

Through rigorous quantitative approaches, quantum mechanics, atomic structure, atomic spectra, chemical bonding, molecular spectra, and chemical kinetics are presented. Differential and integral calculus are used extensively. Lecture.

Prerequisite: CHEM 104, MATH 314, and PHYS 102.

Offered: As Needed.

CHEM 407W - Physical Chemistry Laboratory I (1)

Experiments involving topics covered in CHEM 405 are performed. The experimental methods of physical chemistry are developed. Error analysis, statistical methods, and computer applications are emphasized. 3 contact hours.

Prerequisite: Prerequisite or corequisite: CHEM 405.

Offered: Fall.

CHEM 408 - Physical Chemistry Laboratory II (1)

This is a continuation of CHEM 407W. Experiments involving chemical kinetics, molecular spectroscopy, photochemistry, computational chemistry, and other topics covered in CHEM 406 are performed. 3 contact hours.

Prerequisite: Prerequisite or corequisite: CHEM 406.

Offered: As Needed.

CHEM 412 - Inorganic Chemistry II (2)

Topics include molecular orbital theory, symmetry, spectral and magnetic properties of coordination compounds, and selected main group and organometallic chemistry.

Prerequisite: CHEM 403.

Offered: Spring.

CHEM 413 - Inorganic Chemistry Laboratory (1)

Experiments illustrate main group periodicity, coordination and organometallic compounds' properties, and techniques, including the use of inert atmospheres and microwave acceleration of rates. 3 contact hours.

Prerequisite: Prior or concurrent enrollment in CHEM 406 and CHEM 412.

Offered: Spring.

CHEM 414 - Instrumental Methods of Analysis (4)

Emphasis is on the areas of spectroscopy, electrochemistry, chromatography, and other identification and separation techniques using instrumental methods. Lecture and laboratory. 6 contact hours.

Prerequisite: CHEM 404W or CHEM 416W.

Offered: Spring (odd years).

CHEM 416W - Environmental Analytical Chemistry (4)

Topics include the principles and applications of volumetric, gravimetric, and selected instrumental methods of analysis, including potentiometric and spectroscopic methods, with emphasis on environmental applications. Lecture and laboratory. 6 contact hours.

Prerequisite: CHEM 104.

Offered: Spring (odd years).

CHEM 418 - Marine Environmental Chemistry (4)

Examines biogeochemical cycling of material in the environment, including major and trace element distributions in seawater, environmental chemical equilibria, nutrient distributions and role of ocean in global climate. Students cannot receive credit for both CHEM 417 and CHEM 418.

Prerequisite: CHEM 206.

Offered: As Needed.

CHEM 419 - Biochemistry Mechanisms (3)

Mechanistic approaches to metabolic processes are discussed, including but not limited to glycolysis, citric acid cycle, oxidative phosphorylation and photosynthesis. Lecture.

Prerequisite: CHEM 310 or consent of department chair.

Offered: Spring.

CHEM 421 - Biochemistry of Energy Metabolism (3)

The physical and chemical properties of carbohydrates and lipids are presented. Students cannot receive credit for both CHEM 421 and BIOL 421. Lecture.

Prerequisite: CHEM 206W and either BIOL 320 or CHEM 310.

Offered: As needed.

CHEM 422 - Biochemistry Laboratory (3)

Topics include basic laboratory concepts, including notebook documentation, ethics, and data interpretation, as well as experiments involving DNA cloning, protein purification, spectroscopic analysis, and functional assays. Laboratory.

Prerequisite: CHEM 310 or consent of department chair.

Offered: Spring.

CHEM 425 - Advanced Organic Chemistry (4)

Synthesis, structure determination, and mechanism are discussed in the context of natural product and bio-organic chemistry. Spectroscopic and computational methods are emphasized. Lecture and laboratory. 6 contact hours.

Prerequisite: CHEM 206W.

Offered: Fall (odd years).

CHEM 435 - Pharmacology and Toxicology (3)

The relationship between the chemical structure and biological activity of organic compounds is studied. Historical and current drug development and use are emphasized in relation to the biochemistry of disease.

Prerequisite: CHEM 205W and CHEM 206W, or consent of department chair.

Offered: As needed.

CHEM 467 - Honors Colloquium in Chemistry (05)

Advanced level topics in science are examined through participation in department colloquia with outside speakers and through a series of seminars. This course may be repeated for credit with a change in content. Graded S, U.

Prerequisite: CHEM 206W or consent of department chair.

Offered: Annually.

CHEM 490 - Independent Study in Chemistry (3)

Students study under the guidance of a member of the chemistry faculty. The particular area of chemistry is selected on the basis of the interest of the student and instructor.

Prerequisite: Consent of department chair.

Offered: As needed.

CHEM 491-493 - Research in Chemistry (1)

The student conducts original research in an area selected after consultation with the instructor and prepares a report on the work. A maximum of 6 credit hours may be earned in these courses.

Prerequisite: Consent of department chair.

Offered: As needed.

CHEM 519 - Biochemistry for Health Professionals (3)

This course is designed to provide nurse anesthetist students with a strong foundation of biochemistry.

Prerequisite: CHEM 105 and CHEM 106 or equivalent, enrollment in the M.S.N. nurse anesthesia program or consent of the instructor.

Offered: Fall.

# CSCI - Computer Science

CSCI 102 - Computer Fundamentals for Cyber Security (4)

Students will learn the technical details necessary to study cyber security. Topics include binary and hexadecimal, operating systems, hardware and software, networking, memory, storage management and databases.

Prerequisite: Completed college mathematics milestone.

Offered: Fall, Spring.

CSCI 157 - Introduction to Algorithmic Thinking in Python (4)

This course introduces algorithmic thinking and computer programming in the Python programming language. Topics include algorithms, flowcharts, top-down design, selection, repetition, modularization, input-output, and recursion.

Prerequisite: Completed college mathematics milestone.

Offered: Fall, Spring.

CSCI 209 - Discrete Structures Using Python (4)

Students will explore computer science topics in programming, algorithms, compilers, networks and cryptography. Fundamental mathematical concepts like finite=state machines, recurrence relations, graphs and probability will be applied using Python programs.

Prerequisite: CSCI 157 and MATH 120 or appropriate score on placement exam.

Offered: Fall, Spring.

CSCI 211 - Computer Programming and Design (4)

Fundamentals of problem specification, program design, and algorithm development are taught in the Java programming language. Topics include functions, selection, iteration, recursion, arrays, classes, and inheritance.

Prerequisite: CSCI 157 or consent of department chair.

Offered: Fall, Spring.

CSCI 212W - Data Structures (4)

Abstract datatypes and data structures are presented. Topics include time complexity, linked lists, stacks, queues, lists, hashing, trees, heaps, searching, sorting, and development of object-oriented programming techniques. This is a Writing in the Discipline (WID) course.

Prerequisite: CSCI 211 or CSCI 221.

Offered: Fall, Spring.

CSCI 302 - C++ Programming (3)

The fundamental concepts and constructs of the C++ programming language are examined. Topics include expressions, input/output, control structures, classes, inheritance, arrays, strings, and templates.

Prerequisite: CSCI 211 or CSCI 221.

Offered: As needed.

CSCI 305 - Functional Programming (4)

Functional programming focuses on the design process from problems to well-organized solutions. Topics include, design recipes, functions, lists, self-referential data structures, recursion, lambda functions, and abstraction with practical applications.

Prerequisite: CSCI 201 or CSCI 211 or equivalent, or consent of department chair.

Offered: As needed.

CSCI 309 - Object-Oriented Design (4)

Students will learn fundamental concepts, techniques and principles in object-oriented analysis and design. Topics include the object-oriented design process, interfaces, inheritance, polymorphism, graphical user interfaces and design patterns.

Prerequisite: CSCI 201 or CSCI 211.

Offered: Fall, Spring.

CSCI 313 - Computer Organization and Architecture (4)

Students investigate combinational and sequential circuits. System architecture including the central processing unit, memory, input/output, MIPS assembly language programming. Input/output and interrupt programming. System performance enhancements including caching and parallelism.

Prerequisite: CSCI 209 or CSCI 312; and CSCI 212 or CSCI 212W.

Offered: Fall, Spring.

CSCI 324 - Dynamic Web Development (4)

Students are introduced to basic concepts, issues, and techniques related to designing, developing, and deploying websites. Technology will include current practice and tools for server-side programming. Programming projects are required.  Students cannot receive credit for both CIS 324 and CSCI 324.

Prerequisite: CSCI 157 or CIS 301, or consent of department chair.

Offered: Fall.

CSCI 325 - Organization of Programming Language (3)

Programming language constructs are presented, with emphasis on the run-time behavior of programs. Topics include language definition, data types and structures, and run-time considerations.

Prerequisite: CSCI 212 or CSCI 212W or CSCI 315.

Offered: Fall (even years), Spring.

CSCI 401W - Software Engineering (3)

The software development process is examined from initial requirements analysis to operation and maintenance. Student teams develop a software system from requirements to delivery, using disciplined techniques. This is a Writing in the Discipline (WID) course.

Prerequisite: CSCI 212 or CSCI 212W, or CSCI 309 or CSCI 315, and at least two additional computer science courses at the 300-level or above. or consent of department chair.

Offered: Fall (even years), Spring.

CSCI 402 - Cyber Security Principles (4)

Students will explore topics such as software security, secure programming, network security, cryptography and virtual machines. Students will study cyber security history and the legal discourse surrounding the field.

Prerequisite: CSCI 102 and CSCI 157; or CSCI 211.

Offered: Fall, Spring.

CSCI 410 - Digital Forensics (4)

Students will investigate digital forensic science methods and processes and apply them to the discovery, collection and analysis of evidence. Topics include documenting procedures, securing data and providing expert testimony.

Prerequisite: CSCI 402.

Offered: Fall.

CSCI 415 - Software Testing (4)

Software testing principles, concepts, and techniques are presented within the context of the software development life cycle. Topics include software test design, test process, test management, and software testing tools.

Prerequisite: CSCI 212 or CSCI 212W, or CSCI 315, or consent of department chair.

Offered: Spring.

CSCI 416 - Web Design (4)

Students are introduced to concepts, issues and techniques related to designing website interfaces using a variety of tools. Study includes HTML, CSS, and JavaScript. Students cannot receive credit for both CIS 416 and CSCI 416.

Prerequisite: CSCI 157 or CIS 301.

Offered: Spring.

CSCI 423 - Analysis of Algorithms (4)

Techniques for designing algorithms and analyzing their efficiency are covered. Topics include "big-oh" analysis, divide-and-conquer, greedy method, efficient sorting and searching, graph algorithms, dynamic programming, and NP-completeness.

General Education Category: Advanced Quantatitive/Scientific Reasoning

Prerequisite: CSCI 209 or MATH 436; either CSCI 212 or CSCI 212W, or CSCI 315; and MATH 212.

Offered: Fall (odd years), Spring.

CSCI 427 - Introduction to Artificial Intelligence (3)

Fundamental artificial intelligence methods are introduced, including search, inference, problem solving, and knowledge representation. AI applications, such as natural language understanding and expert systems, are introduced.

Prerequisite: CSCI 212 or CSCI 212W or CSCI 315.

Offered: As needed.

CSCI 428 - Machine Learning ()

Students will learn to develop intelligent systems and analyze data.  Topics include supervised, unsupervised and deep learning algorithms.  Current packages and tools will be used to solve real-world problems.

Prerequisite: CSCI 212W, or CIS 470 and CSCI 157, or consent of department chair.

Offered: Spring

CSCI 432 - Network and Systems Security (4)

Students will study a survey of network and systems security topics such as packet analysis, penetration testing and intrusion detection. Students will practice with tools/techniques used by security professionals.

Prerequisite: CSCI 402.

Offered: Spring.

CSCI 435 - Operating Systems (4)

Students explore topics of modern operating systems such as process management and synchronization, CPU scheduling and memory management. Emphasis is placed on increasing OS performance, while enhancing privacy and security.

Prerequisite: CSCI 313 and either CSCI 212, or CSCI 212W, or CSCI 315.

Offered: Fall, Spring (even years).

CSCI 437 - Network Architectures and Programming (4)

An introduction to fundamental concepts of computer networks. Topics include the internet reference model, TCP/IP, flow control, congestion control, routing, switching, network programming, and data capturing and analysis.

Prerequisite: : CSCI 212 or CSCI 212W, or CSCI 315.

Offered: As needed.

CSCI 455 - Introduction to Databases (4)

Students explore the fundamental concepts of database systems. Topics include relational databases, database modeling and design, SQL, query processing and optimization, distributed and noSOL, databases and database security.

Prerequisite: CSCI 212 or CSCI 212W, or CSCI 315.

Offered: Fall.

CSCI 467 - Computer Science Internship (4)

Students work at a business or nonprofit organization integrating classroom study with work-based learning, supervised by a faculty member.

Prerequisite: Major in computer science, minimum GPA of 2.67 in computer science courses, completion of or concurrent enrollment in CSCI 401 or CSCI 401W, and consent of department chair.

Offered: As needed.

CSCI 476 - Advanced Topics in Computer Science (4)

Recent developments and topics of current interest in computer science are studied. This course may be repeated for credit with a change in content.

Prerequisite: CSCI 212 or CSCI 212W, or CSCI 315.

Offered: Spring.

CSCI 490 - Directed Study in Computer Science (1-4)

This course is open to students who have demonstrated superior ability in computer science. Designed to be a substitute for a traditional course under the instruction of a faculty member. This course may be repeated for credit once with a change in content.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

CSCI 491 - Independent Study in Computer Science (1-4)

This course is open to students who have demonstrated superior ability in computer science. Students select a topic and undertake concentrated research or creative activity mentored by a faculty member. This course may be repeated for credit once with a change in content.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

# ECON - Economics

ECON 200 - Introduction to Economics (4)

This course fosters an understanding of the market economy and contemporary economic problems, such as economic growth and inflation, unemployment, income distribution, and the role of government. Students cannot receive credit for ECON 200 if they have successfully completed or are currently enrolled in ECON 214.

General Education Category: Social and Behavioral Sciences.

Offered: Fall, Spring, Summer.

ECON 214 - Principles of Microeconomics (3)

Microeconomics is introduced, including such areas of decision making as individual demand theory, cost theory, production theory, and the structure of markets.

Prerequisite: Completion of College Mathematics Milestone.

Offered: Fall, Spring, Summer.

ECON 215 - Principles of Macroeconomics (3)

The U.S. economy as a whole is considered and problems of inflation and recession are explored by examining aggregate demand, aggregate supply, national product and income, and the influence of money and interest rates on the economy.

Prerequisite: Completion of College Mathematics Milestone.

Offered: Fall, Spring, Summer.

ECON 314 - Intermediate Microeconomic Theory and Applications (4)

Theoretical foundations covered in ECON 214 are expanded upon and myriad applications of these theories are developed, using graphical and mathematical techniques. The role of microeconomics in managerial decision making is also explored.

Prerequisite: ECON 214, ECON 215 and MATH 177.

Offered: Fall.

ECON 315 - Intermediate Macroeconomic Theory and Analysis (4)

Macroeconomic models are used to analyze economic growth, unemployment, and inflation. Also examined are the effectiveness of fiscal and monetary policies, using models depicting the interactions of product, resource, and financial markets.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: Spring.

ECON 331 - Topics in Global Economics (4)

The course will introduce students to the basic operation of various economies while presenting facts of development and trade policies that are relevant for the study of the world economy.

Prerequisite: ECON 200 and Completion of College Math Milestone, or ECON 214, or ECON 215.

Offered: Annually (even years).

ECON 335 - Economics of Race and Gender (4)

This course emphasizes study of both non-labor and labor market outcomes, and analysis of government policies, regulations, race and gender equality, and international comparisons on racial-ethnic and gender.

Prerequisite: ECON 200 and Completion of College Math Milestone or ECON 214.

Offered: Annually (even years).

ECON 337 - Economics of Climate Change and Sustainability (4)

Students are introduced to the economic causes of climate change. A global perspective combined with emphasis on the role of uncertainty and sustainable development is used to explore policy responses.

Prerequisite: ECON 200 and Completion of College Math Milestone, or ECON 214.

Offered: Annually (odd years).

ECON 390 - Directed Study (4)

Designed to be a substitute for a traditional course under the instruction of a faculty member.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

ECON 421 - International Economics (4)

The theory of international trade is analyzed. Topics include the benefits of trade and the effects of tariffs, quotas, and customs unions. Also covered are the theories of international monetary relations, capital flows, and exchange rates.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: As needed.

ECON 422 - Economics of Developing Countries (4)

The characteristics of developing countries and the process of economic development are examined. Topics include poverty, inequality, unemployment, capital formation in industry and agriculture, and the effects of foreign trade and aid.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: As needed.

ECON 431 - Labor Economics (4)

The structures and operations of human resource markets are analyzed, including pricing and allocation of labor resources, wage differentials, income distribution, discrimination, and unemployment.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: As needed.

ECON 433 - Economics of Government (4)

The role of the public sector in the United States and its effect on the economy are studied. Discussion includes the impact of federal, state, and local government expenditure and revenue.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: As needed.

ECON 435 - Urban Economics (4)

Economic analysis is applied to the development and problems of urban areas. Urban issues, such as poverty, housing, and transportation, are examined and the market forces that determine why and where urban areas develop.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: As needed.

ECON 436 - Industrial Organization and Market Structure (4)

The economics of industrial organization and the organization of firms and industries are analyzed using microeconomic theories and empirical data. Public policy issues are assessed, including antitrust and regulatory mechanisms.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: As needed.

ECON 437 - Environmental Economics (4)

Focus is on current environmental problems and policies. Topics include valuing the environment, approaches to controlling local and regional air pollution, energy policy, climate change, global warming, and sustainable economic growth.

Prerequisite: ECON 214, ECON 215; MATH 177.

Offered: As needed.

ECON 449W - Introduction to Econometrics (4)

Quantitative methods used in testing theoretical propositions in economics and business are presented. Emphasis is on the use of regression, time-series models, and other econometric methods. Lecture and computer laboratory. This is a Writing in the Discipline (WID) course.

Prerequisite: ECON 214, ECON 215; MATH 248.

Offered: Fall, Spring.

ECON 462W - Seminar in Economic Research (4)

Students integrate economic literature, theory, data and empirical methodologies, write, and present a research paper in the style of a journal article.This is a Writing in the Discipline (WID) course.

Prerequisite: : ECON 314, ECON 449 or ECON 449W, and one additional economics course at the 400-level.

Offered: Spring.

ECON 467 - Directed Internship in Economics (4)

Students are assigned to a business, government, industrial, or a not-for-profit organization and supervised by a mentor. A two-hour biweekly seminar is included.

Prerequisite: Junior standing, a major or minor in a School of Management program and consent of internship director and appropriate faculty member.

Offered: Fall, Spring, Summer.

ECON 490 - Independent Study in Economics (4)

Students select a topic and undertake concentrated research under the supervision of a faculty advisor.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

ECON 491 - Independent Study I (4)

This course emphasizes the development of research for students admitted to the economics honors program. The research topic is selected and conducted under the supervision of a faculty advisor.

Prerequisite: Admission to the economics honors program and consent of instructor, department chair and dean.

Offered: As needed.

ECON 492 - Independent Study II (4)

This course continues the development of research begun in ECON 491. The honors research is completed under the consultation of a faculty advisor. A research paper and presentation are required.

Prerequisite: ECON 491 and consent of instructor, department chair and dean.

Offered: As needed.

# MATH - Mathematics

MATH 010 – Mathematics Milestone for Future Success (4)

Satisfactory completion of this course fulfills the College Mathematics Milestone. Topics include problem solving, beginning algebra, geometry, measurement, introductory probability and statistics, and graphs and charts. Graded S, U.

Offered: Fall, Spring, Summer.

MATH 117 - Calculus: A Short Course (3)

Topics include differentiation and integration, including an introduction to partial differentiation.

Offered: As needed.

MATH 120 - Intermediate Algebra (4)

Intended for students needing intermediate algebra skills, especially for MATH 177 and 209. Topics include linear and quadratic equations, inequalities, exponents, radicals, algebraic fractions, and quadratic, logarithmic and exponential functions.

Prerequisite: MATH 010 or appropriate score on the placement exam.

Offered: Fall, Spring, Summer.

MATH 139 - Math, Data, and the Contemporary Citizen (4)

This course introduces students to the power and usefulness of data and its mathematical application to their personal lives and to the function of the societies in which they belong.

General Education Category: Mathematics

Prerequisite: Completed college mathematics milestone or appropriate score on the mathematics placement exam.

Offered: Fall, Spring, Summer.

MATH 143 - Mathematics for Elementary School Teachers I (4)

Emphasis is on problem solving, model building, and algorithm development appropriate for the mathematics curriculum in the elementary/middle school. Topics include numeration and the development of number systems. Lecture and laboratory.

Prerequisite: Completed college mathematics milestone or appropriate score on the mathematics placement exam.

Offered: Fall, Spring, Summer.

MATH 144 - Mathematics for Elementary School Teachers II (4)

A continuation of MATH 143, this course includes geometry and measurement, counting problems, probability, and statistics. Lecture and laboratory.

General Education Category: Mathematics for elementary education students only.

Prerequisite: Completed college mathematics milestone or appropriate score on the mathematics placement exam and MATH 143, with a minimum grade of C, or consent of department chair.

Offered: Fall, Spring, Summer.

MATH 177 - Quantitative Business Analysis (4)

Topics include linear and selected nonlinear functions, linear systems, matrix methods, linear programming, average rate of change, derivatives and marginal analysis. Applications to management and economics are stressed throughout.

General Education Category: Mathematics.

Prerequisite: MATH 120 or appropriate score on placement exam.

Offered: Fall, Spring, Summer.

MATH 209 - Precalculus Mathematics (4)

The functions, concepts, and techniques of algebra and trigonometry considered essential in the study and applications of calculus are introduced and/or reinforced.

General Education Category: Mathematics.

Prerequisite: MATH 120 or appropriate score on placement exam.

Offered: Fall, Spring, Summer.

MATH 210 - College Trigonometry (3)

This is an in-depth study of trigonometry. Topics include a comprehensive analysis of trigonometric and inverse trigonometric functions and solutions of triangles, vectors, and polar coordinates.

Prerequisite: Three units of college preparatory mathematics and MATH 120 or consent of department chair.

Offered: Spring.

MATH 212 - Calculus I (4)

This course covers the fundamental concepts, techniques, and applications of the differential calculus of one variable and begins the study of integration.

General Education Category: Mathematics.

Prerequisite: MATH 209 or appropriate score on placement exam.

Offered: Fall, Spring, Summer.

MATH 213 - Calculus II (4)

A continuation of MATH 212, topics include derivatives and integrals of logarithmic, exponential, and inverse trigonometric functions; techniques of integration; infinite series; and related applications.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: MATH 212

Offered: Fall, Spring, Summer.

MATH 220 - Formalizing Mathematical Thought (4)

This course is an introduction to abstract and generalized thinking including formal mathematical proof. Students cannot receive credit for MATH 220 if credit was received for MATH 300.

Prerequisite: MATH 143, MATH 144, and MATH 209.

Offered: Fall (alternate years - even-numbered years.)

MATH 239 - Contemporary Topics in Mathematics II (4)

Topics studied include, and are not limited to: applications to management, electoral politics and fair and equitable conflict resolution.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: MATH 139 or consent of department chair.

Offered: Fall, Spring, Summer.

MATH 240 - Statistical Methods I (4)

Descriptive statistics; confidence intervals and hypothesis testing; random variables; estimations and tests of significance; and correlation and regression are studied. Students cannot receive credit for both MATH 240 and MATH 248.

General Education Category: Mathematics.

Prerequisite: Completed college mathematics milestone or appropriate score on the mathematics placement exam.

Offered: Fall, Spring, Summer.

MATH 241 - Statistical Methods II (4)

Continuation of MATH 240 at elementary level. Covers analysis of variance, multiple regression, and non-parametric statistics. Emphasis on large data sets being analyzed through computer software, and interpretation of results. Students cannot receive credit for both MATH 241 and MGT 249, nor for MATH 241 if credit was received for MATH 445.

General Education Category: Advanced Quantitative/Scientific Reasoning

Prerequisite: MATH 240

Offered: As needed.

MATH 245 - Principles of Data Science (4)

Students will be introduced to statistical computing using an appropriate software package. Topics include techniques for visualizing and managing data, statistical modeling including regression, and ANOVA.

Prerequisite: MATH 240 or MATH 248

Offered: Fall, Spring.

MATH 248 - Business Statistics I (4)

Topics include descriptive statistics, probability distributions, expected values, sampling distributions, and an introduction to estimation and hypothesis testing. Students cannot receive credit for both MATH 240 and MATH 248.

General Education Category: Gen. Ed. Advanced Quantitative/Scientific Reasoning.

Prerequisite: MATH 177 or consent of department chair.

Offered: Fall, Spring, Summer.

MATH 300W - Bridge to Advanced Mathematics (4)

The standard techniques of deductive proof in mathematics are applied to basic results regarding sets, relations, functions, and other topics.This is a Writing in the Discipline (WID) course.

Prerequisite: MATH 212 or consent of department chair.

Offered: Spring.

MATH 314 - Calculus III (4)

A continuation of MATH 213, this course covers three-dimensional analytic geometry, elementary vector analysis, functions of several variables, partial differentiation, and multiple integration.

Prerequisite: MATH 213.

Offered: Fall, Spring.

MATH 315 - Linear Algebra (4)

Matrices, linear systems, vector spaces, vector geometry, linear transformations, and appropriate applications are covered.

Prerequisite: MATH 300 or MATH 300W, with a minimum grade of C.

Offered: Fall.

MATH 324 - College Geometry (4)

Advanced topics in Euclidean geometry are considered using synthetic, analytic, vector, and transformational formats. Included are axiomatics and non-Euclidean geometry, topics in logic, and methods of proof appropriate for geometry.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: MATH 212.

Offered: Spring.

MATH 345 - Linear Models for Data Science (4)

Students will apply matrix theory to the study and implementation of linear models to problems in data science. Topics include basic matrix theory with applications to optimization, and machine learning.

Prerequisite: MATH 315 or both MATH 245 and MATH 212.

Offered: Fall.

MATH 409 - Mathematical Problem Analysis (4)

Problem-solving strategies in mathematics are identified. The level of problems and their analyses is designed to give students confidence in their ability to handle problems and a basis for the teaching of problem analysis.

Prerequisite: MATH 143, MATH 144, and either MATH 209 or consent of department chair.

Offered: Fall (alternate years - odd-numbered years.)

MATH 411 - Calculus IV (4)

A continuation of MATH 314, study includes Lagrange multipliers, line integrals, Green's Theorem, transformations and the Jacobian, and an introduction to analysis involving limits and the derivative.

Prerequisite: MATH 314.

Offered: Fall (odd years).

MATH 416 - Ordinary Differential Equations (4)

The fundamentals of differential equations are studied in the context of applications. Topics include analytical and numerical solutions of first- and second-order equations, systems of equations, and modeling.

Prerequisite: Prior or concurrent enrollment in MATH 314.

Offered: Spring (as needed).

MATH 417 - Introduction to Numerical Analysis (4)

Algorithms and computer programs are used/developed to solve various mathematical problems. Topics include numerical solutions of equations, numerical differentiation and integration, and interpolation and approximation of functions.

Prerequisite: MATH 213 and one computer science course, or consent of department chair.

Offered: Spring (as needed).

MATH 418 - Introduction to Operations Research (3)

Operations research is the systematic application of mathematical techniques for generating better decisions for real-world problems. Besides linear programming, topics may include queuing and network analysis.

Prerequisite: MATH 212 or consent of department chair.

Offered: Spring (even years).

MATH 431 - Number Theory (3)

Topics include number systems, divisibility, primes and factorization, Diophantine problems, congruences, and Euler's and Fermat's Theorems.

Prerequisite: MATH 212.

Offered: Fall, Spring.

MATH 432 - Introduction to Abstract Algebra (4)

The definitions and properties of groups, rings, and fields are studied. Properties of familiar number systems are exhibited as special cases of these more general and abstract systems.

Prerequisite: MATH 300 or MATH 300W and MATH 315.

Offered: Spring.

MATH 436 - Discrete Mathematics (3)

Several important areas in noncontinuous mathematics are introduced, including graph theory and its applications, difference equations, and finite-state machines.

Prerequisite: MATH 212.

Offered: Fall, Spring.

MATH 441 - Introduction to Probability (4)

Topics include the development of both discrete and continuous probability theory, combinatorics, mathematical expectation, joint distributions, and sampling distributions.

Prerequisite: MATH 314.

Offered: Fall.

MATH 445 - Advanced Statistical Methods (4)

Students will be introduced to methods that are necessary to analyze large data sets commonly encountered in data science and statistics.

Prerequisite: MATH 345, or MATH 315, or both MATH 436 and prior or concurrent enrollment in CSCI 423.

Offered: Spring.

MATH 458W - History of Mathematics (4)

The history of mathematical thought and the development of mathematics from ancient to modern times are studied. This is a Writing in the Discipline (WID) course.

Prerequisite: MATH 300 or MATH 300W, with a minimum grade of C.

Offered: Fall.

MATH 460 - Seminar in Data Science (3)

Students will participate in a project in which they consider a scientific question, collect and analyze a substantial data set, and formally communicate their results.

Prerequisite: MATH 445

Offered: Spring.

MATH 461W - Seminar in Mathematics (3)

Students analyze, synthesize and expand on mathematics learned in preceding courses, culminating in a substantial project and presentation. This is a Writing in the Discipline (WID) course.

Prerequisite: MATH 441 and prior or concurrent enrollment in MATH 432.

Offered: Spring.

MATH 490 - Directed Study in Mathematics (3)

This course is open to students who have demonstrated superior ability in mathematics. Designed to be a substitute for a traditional course under the instruction of a faculty member. This course may be repeated for credit once with a change in content.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

MATH 491 - Independent Study in Mathematics (1)

This course is open to students who have demonstrated superior ability in mathematics. Students select a topic and undertake concentrated research or creative activity mentored by a faculty member. This course may be repeated for credit once with a change in content.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

MATH 509 - Mathematical Modeling (3)

This course covers various mathematical models including continuous-time models in population dynamics, applications of linear algebra to statistics and optimization including linear regression, linear programing, and other related topics.

Prerequisite: Graduate status or consent of department chair.

Offered: As needed.

MATH 510 - Exploring Calculus: Renew, Revit, Reexamine (3)

A deeper analysis of the definitions, concepts and theorems of single variable calculus is presented.  Classical and reform approaches are explored.  Connections to higher mathematics are examined.

Prerequisite: Graduate status or consent of department chair.

Offered: As needed.

MATH 512 - Foundations of Higher Analysis (3)

Fundamental concepts in the theory of calculus are presented. Topics include limits, continuity and uniform continuity, differentiation, the Riemann integral, sequences and series, and convergence criteria.

Prerequisite: Graduate status, MATH 300 or MATH 300W, and MATH 314.

Offered: As needed.

MATH 515 - Introduction to Complex Variables (3)

Techniques and concepts of the algebra and calculus of functions of one complex variable are studied, including trigonometric, exponential, and logarithmic functions.

Prerequisite: Graduate status, prior or concurrent enrollment in MATH 314.

Offered: As needed.

MATH 519 - Set Theory (3)

The foundations of set theory and logic are studied in the context of their application in the construction of number systems, from the natural numbers through the reals.

Prerequisite: Graduate status, MATH 300 or MATH 300W, MATH 314, MATH 432, or consent of department chair.

Offered: As needed.

MATH 522 - Combinatorics (3)

The existence, construction, and properties of systems of finite sets whose arrangements satisfy various balance properties are explored. Topics may include combinatorial designs, cyclic construction methods and current research.

Prerequisite: Graduate status or consent of department chair.

Offered: As needed.

MATH 528 - Topology (3)

Study is made of sets and sequences, various topological spaces, including metric, compactness, connectedness, curves, and mappings.

Prerequisite: Graduate status, MATH 300 or MATH 300W, and MATH 314.

Offered: As needed.

MATH 530 - Advanced Linear Algebra ()

Advanced topics in linear algebra are explored. Topics may include inner product spaces, self-adjoint operators, Jordan canonical form, and the spectral theorem.

Prerequisite: Graduate status or consent of department chair.

Offered: As needed.

MATH 532 - Algebraic Structures (3)

Selected topics in the development of groups, rings, modules, and fields are covered, including homomorphisms, permutation groups, basic Galois Theory, ring extension problems, and ideals.

Prerequisite: Graduate status, MATH 300 or MATH 300W, and MATH 314.

Offered: As needed.

MATH 540 - Advanced Differential Equations (3)

Advanced topics in differential equations are explored. Topics may include systems of linear and nonlinear equations, boundary value problems, multiple solutions, numerical methods, stability, and current research.

Prerequisite: Graduate status or consent of department chair.

Offered: As needed.

MATH 551 - Topics in Proof (3)

Varying topics in mathematical proof are examined, from number systems and functions to abstract spaces.

Prerequisite: Graduate status and consent of department chair.

Offered: As needed.

MATH 552 - Topics in Applied Mathematics (3)

Varying topics in applied mathematics are examined, from numerical and analytical investigations to modeling.

Prerequisite: Graduate status and consent of department chair.

Offered: As needed.

MATH 553 - Topics in Pure Mathematics (3)

Varying topics in pure mathematics are examined, from number theory and advanced geometries to abstract algebra.

Prerequisite: Graduate status and consent of department chair.

Offered: As needed.

# PSCI - Physical Science

PSCI 103 - Physical Science (4)

The processes and natural laws that control our physical environment are investigated. Emphasis is on laboratory experiment. Lecture and laboratory. Students cannot receive credit for both PSCI 103 and PHYS 101-PHYS 102. 6 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone or appropriate score on the math placement exam.

Offered: Fall, Spring, Summer.

PSCI 204 - Understanding the Physical Universe (4)

Fundamental principles in physical science such as force, energy, cycles and the structure of matter are introduced and used to investigate varied applications and current issues in the physical sciences. 5 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: BIOL 100 and MATH 144 or consent of instructor.

Offered: Fall, Spring, Summer.

PSCI 207 - Introduction to Environmental Chemistry (3)

The flow of material and energy through the Earth system is introduced. Principles of element cycles, climate science, and coastal processes are also investigated.

Offered: Annually.

PSCI 208 - Forensic Science (4)

Students learn about modern forensic techniques used in crime scene analysis. Emphasis is on the methods used to collect and interpret crime scene data.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: Any Mathematics or Natural Science.

Offered: Fall, Spring.

PSCI 211 - Introduction to Astronomy (4)

Our solar system, the sun and other stars, galaxies, and the universe are explored. Astronomical phenomena are explained using basic physical principles. Lecture and laboratory.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone or appropriate score on the math placement exam.

Offered: Fall, Spring.

PSCI 212 - Introduction to Geology (4)

Focus is on the structure and composition of the earth and the processes that have shaped the earth. Topics include minerals, origin of magma, volcanic activity, and weathering and soil formation. Lecture and laboratory.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone or appropriate score on the math placement exam.

Offered: Fall, Summer.

PSCI 214 - Introduction to Meteorology (4)

This class focuses on the structure, composition and phenomena of the atmosphere. Students examine local and global scale weather patterns, and century to millennial scale climate change.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: Completion of any mathematics or natural science general education distribution.

Offered: Fall.

PSCI 217 - Introduction to Oceanography (4)

Topics include mapping the sea floor, formation of the ocean basins, sediments as recorders of ocean history, the composition and physical properties of seawater, ocean circulation, El Ninos, waves, and tides. Lecture and laboratory.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics milestone or appropriate score on the math placement exam.

Offered: Spring.

PSCI 262 - Space: The Final Frontier (4)

Students explore the cultural impacts on the imagination of space, the science and technological discoveries for space science, and how space has fueled science fiction literature, film and popular culture.

General Education Category: Connections.

Prerequisite: FYS 100, FYW 100/FYW 100P/FYW 100H and 45 credit hours.

Offered: Fall, Spring, Summer.

PSCI 357 - Historical and Contemporary Contexts of Science (3)

The development of science and technology is explored through case histories from the physical, biological, and environmental sciences. 4 contact hours.

Prerequisite: Any Natural Science course.

Offered: As needed.

PSCI 490 - Directed Study in Physical Science (3)

Designed to be a substitute for a traditional course under the instruction of a faculty member. A particular area of physical science is studied on the basis of the interest of the student and the instructor.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.

PSCI 491-493 - Research in Physical Science (1)

The student conducts original research in an area selected after consultation with the instructor and prepares a report of their work. A maximum of 6 credit hours may be earned in these courses.

Prerequisite: Consent of instructor, department chair and dean.

Offered: As needed.