Integrative Science (ISCI) Major Requirements

**LEVEL 1: Building a Scientific Foundation (16 Credits from at least 2 disciplines)**

All courses are 4 credits unless noted (12 credits must be completed with a GPA of 2.00 or higher to be accepted into the major).

- **Biology:**
  - BIOL 101
  - BIOL 201
  - BIOL 202
  - BIOL 216
  - CHEM 125 + 201
  - CHEM 250 + 202
  - CHEM 251 + 203
  - CHEM 255 + 205
  - CSCI 130 or 140 or 150
  - CSCI 200
  - CHEM 239
  - ENSR 175
  - MATH 118 or 119
  - MATH 120

- **Chemistry:**
  - CHEM 125 + 201
  - CHEM 250 + 202
  - CHEM 251 + 203
  - CHEM 255 + 205

- **Computer Science:**
  - CSCI 130 or 140 or 150
  - CSCI 200
  - CSCI 239
  - CSCI 230
  - CSCI 239
  - CSCI 200

- **Mathematics:**
  - MATH 118 or 119
  - MATH 120
  - MATH 124

- **Integrative Science:**
  - ISCI 130 (Applied Pathophysiology)

**LEVEL 2: First Integration Point (2-4 Credits)**

Students will have an opportunity to construct a written analysis of an integrative scientific question or issue of their choice. They will explain and demonstrate the important role of oral communication. They will demonstrate their quantitative and information literacy to investigate this scientific issue and effectively synthesize concepts, scientific processes, and/or theories from at least two scientific disciplines to help understand and/or solve the scientific question or issue. Students should be prepared for active discussion and research using primary literature. Prerequisites: at least 16 credits from the Natural Science division in at least two different disciplines or permission of the instructor.

- **ISCI 201 (2)** spring only
- **ESSS 273 Health and Fitness (4)** fall only

**LEVEL 3a: Building Depth and Breadth (20 credits)**

No more than 12 credits from these 20 credits can be taken from one discipline. **Note that some courses may have prerequisites in addition to the courses taken in Level 1. It is the student’s responsibility to verify that all prerequisites are complete prior to enrolling in upper division coursework.**

- **Biology (All 300 level BIOL courses excluding BIOL373A Exploring Medicine):**
  - BIOL 3
  - BIOL 3
  - BIOL 3

- **Chemistry (All 300 level CHEM courses):**
  - CHEM 3
  - CHEM 3
  - CHEM 3
  - CHEM 3
  - CHEM 3
  - CHEM 3
  - CHEM 3

- **Computer Science (All 300 level CSCI courses):**
  - CSCI 3
  - CSCI 3
  - CSCI 3

- **Mathematics (All 300 level MATH courses):**
  - MATH 3
  - MATH 3
  - MATH 3

- **Integrative Science:**
  - ISCI 310 (Applied Pathophysiology)

- **Physics (All 300 level PHYS courses):**
  - PHYS 3
  - PHYS 3
  - PHYS 3

- **Exercise Science:**
  - ESSS306 (Kinesiology)
  - ESSS308 (Exercise Physiology)

- **Nutrition:**
  - NUTR 301 (Diet Health and Disease Prevention)
  - NUTR 302 (Physiology of Weight Regulation)
  - NUTR 320 (Micronutrient Metabolism and Nutritional Supplementation) (2 cr)
  - NUTR 323 (Public Health Nutrition)
  - NUTR 326 (Global Health and Nutrition)
  - NUTR 330 (Nutritional Biochemistry)

- **Environmental Studies:**
  - ENVR 300 (ENVR Topics—Natural Science): 30Q (Env. Health)
  - ENVR 311 (Intro to GIS)
  - ENVR 331 (Science of Global Climate Change)
  - ENVR 333 (Sustainable Agriculture)
LEVEL 3b: Building Depth and Breadth: Additional coursework (8 credits)
An additional eight credits of upper division (300 level) coursework must be completed by the student. Numerous courses may count towards this requirement. The student may complete an additional eight credits of natural science coursework, which may or may not be included in the list above. In addition, students are encouraged to complete these credits with coursework from outside the natural science division IF THE COURSEWORK IS COHERENT WITH THE STUDENT’S TRACK, CONCENTRATION OR AREA OF STUDY. All upper division elective courses must be selected in consultation with the faculty advisor and approved by the Integrative Science chair.

_____ XXXX 3_____
_____ XXXX 3_____

LEVEL 4: Second Integration Point (2-4 Credits)
Students must complete one two or four-credit course intended to develop the ability to integrate and apply information from at least two disciplinary fields in order to solve a problem or explore complex issues in an original way. Developing effective written and oral communication and inquiry/analysis skills will also be a component of this course. These courses cannot also be counted toward the level 3a or level 3b requirement.

_____ ISCI 301 (2) fall only
_____ ISCI 310 Applied Pathophysiology (4) fall only
_____ NUTR 330 Nutritional Biochemistry and Assessment (4) fall only
_____ ESSS 306 Kinesiology (4) fall only
_____ ESSS 308 Exercise Physiology (4) spring only

LEVEL 5: Integrated Science Capstone (4 Credits)
In completing the Integrative Science Capstone, students will apply skills, abilities, theories, and/or methodologies gained through the Integrative Science curriculum to a new situation in order to solve a difficult problem or explore a complex issue in an original and interdisciplinary way, and effectively communicate the outcomes and implications of their work.

_____ ISCI 378 (4) spring only
_____ BIOL 397 Internship (4)
_____ ESSS 397 Internship (4)

Should students apply for distinction in the major, they would enroll in one of the following sets of research. The must obtain an A for distinction in this coursework:

_____ ESSS Research
- ESSS 316 Research Methods (2) spring junior year
- ESSS 395 Research Seminar I (1) fall senior year
- ESSS 396 Research Seminar II (1) spring senior year

_____ NUTR Research
- NUTR 380 Research Seminar I (2) spring junior year (fall senior year if abroad)
- NUTR 381 Research Seminar II (2) fall senior year
- NUTR 396 Nutrition Research Capstone (2) spring senior year

* No more than 12 credits can be counted toward another major or minor.

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Common Curriculum requirements:
FYS I & FYS II  ES  EL  Theo 111  FA  HM & HM (different departments)  FAE
GL 111, 112, 211  GE  IC  TU  NS  MT  SS