# INTEGRATED NATURAL SCIENCE

## Integrated Natural Science Major Information:

Integrated Natural Science focuses on understanding the fundamental principles of the natural world, from the micro- to the macroscopic. It provides a foundation for work in a variety of technology-rich fields. This flexible degree prepares students for many possible career paths in a variety of fields including healthcare and medicine, conservation, environmental sustainability, and consumer products, to name just a few.

Integrated Natural Sciences provides options for students who want a unique combination of biology, chemistry, physics, and mathematics courses that meet their personal and professional goals and prepare them for interdisciplinary careers.

Students learn to communicate effectively about scientific phenomena, analyze quantitative and qualitative data, and apply the concepts, models and theories from various fields of natural science to solve problems. In project groups and independently, from the 100 to 400 level courses, students engage in designing, implementing and evaluating scientific investigations. An Integrated Natural Science degree prepares students to be responsible professionals and effective citizens. The mean annual wage for college graduates working in occupations related to the degree Integrated Natural Sciences in Southeastern Wisconsin is nearly $90,000 and the employment rate for these graduates is high.

## Learning Outcomes:

1. Effectively uses the language, concepts, and models of science to fluently communicate about scientific phenomena (*Communication*)

- Consistently uses scientific vocabulary fluently and precisely in developing coherent and substantiated communications of scientific concepts and applications
- Effectively uses graphs, tables, diagrams, molecular structures, and equations to represent scientific data and relationships
- Adeptly matches communication content, style, and structure to the purpose of the communication and to the audience
- Consistently and thoroughly meets standards of academic integrity in selection and citation of source material and in use of data to construct arguments and draw conclusions

2. Accurately uses the methodologies of math and science to analyze quantitative and qualitative data (*Analysis, Problem Solving, Social Interaction*)

- Selects and applies appropriate strategies and scientific models to analyze and synthesize data
- Expresses valid interpretations based on a sound understanding of fundamental scientific concepts and analytical frameworks
- Demonstrates appropriate and effective social interaction skills and professional behaviors in group problem solving experiences in the classroom and laboratory
- Demonstrates creativity and sophistication in structuring, carrying out, and critiquing scientific investigations

3. Applies scientific frameworks to successfully solve problems through scientific investigation with attention to accuracy, safety, and an awareness of the implications of their practices (*Developing a Global Perspective, Valuing in Decisions Making*)

- Explains the theoretical underpinnings and demonstrates the practical application of laboratory techniques and instrumentation
- Applies valuing frameworks to make responsible decisions about the safe handling and conscientious disposal of reagents, the safe and appropriate use of equipment and technology, and the ethical use of scientific information
- Cultivates a professional identity by integrating experiences from academic and professional settings and by demonstrating initiative in engaging with contemporary issues in science and technology

## Major Req

### Integrated Natural Sciences (INSC.D.BA) Major Information 25-26 Catalog

| Code | Title | Credits |
|---|---|---|
| **CHOOSE ONE GROUP** | | **8-9** |
| Group 1 | | |
| MT-123 | College Algebra | |
| MT-124 | Trigonometry | |
| MT-256 | Probability and Statistics (General Education ) | |
| Group 2 | | |
| MT-124 | Trigonometry | |
| MT-148 | Functions & Modeling | |
| MT-256 | Probability and Statistics | 4 |
| Group 3 | | |
| MT-152 | Calculus 1 | |
| MT-256 | Probability and Statistics | |
| **Choose 4 Credits** | | **4** |
| PH-231 & 231L | Algebra-Based Physics I and Physics Lab | |
| PH-241 & 241L | Calculus-Based Physics 1 and Physics Lab (General Education ) | |
| Choose One 200-level Biology Couse (BI-221-BI-297) [1] | | 3-4 |
| **CORE REQUIREMENTS** | | |
| CH-213 & 213L | Chemistry of Bioorganic Molecules and Chemistry of Bioorganic Molecules Lab | 4 |
| BI-374 | BI Assessment in Effective Citizenship | 1 |
| or CH-374 | CH Assessment in Effective Citizenship | |
| or MT-374 | Math Assessment in Effective Citizenship | |
| BI-491 | Senior Environmental Seminar | 3 |
| **Choose 30 (200, 300, 400 level) Credits/8 Elective Courses from BI, CH, MT (must choose at least 2 subjects) [2]** | | **30** |
| **Total Credits** | | **57-59** |

[1] Pre-Pharmacy Students Must Choose BI 251

[2] Maximum of Fifteen 200 Level Credits Allowed

# Major Map

## Integrated Natural Sciences (INSC.D.BA) Map[4] 25-26 Catalog

**Freshman**

| Fall | Credits | Spring | Credits |
|---|---|---|---|
| ILA-100 or 200 | 0 | CM-125 | 3 |
| FSS-125 | 2 | HUM-150 | 4 |
| AC-151 | 0 | SC-120 & 120L | 4 |
| CM-120 or BU 151 | 4 | CH-213 & 213L | 4 |
| QL-122 | 4 | | |
| SC-119 & 119L | 4 | | |
| | **14** | | **15** |

**Sophomore**

| Fall | Credits | Spring | Credits |
|---|---|---|---|
| CM-225 | 3 | PPS-229 | 1 |
| BSC-215 | 2 | GLS-200, POL 225, PSY 110, or SW 200 | 3-4 |
| BI 200 level Course[2] | 4 | HFA-210 | 2 |
| ADV-299 | 0 | Choose one 3-4 Credit Intermediate (200 level or higher) Course in BI, CH, MT[3] | 3-4 |
| MT-123 & MT-124[1] | 3-5 | Choose one 3-4 Credit Intermediate (200 level or above) Course in BI, CH, MT[3] | 3-4 |
| FA-110 | 4 | | |
| | **16-18** | | **12-15** |

**Junior**

| Fall | Credits | Spring | Credits |
|---|---|---|---|
| HFA-310 | 2 | BI-374, CH 374, or MT 374 | 1 |
| PH-231 & 231L | 4 | MT-256 | 4 |
| Choose one 3-4 Credit Intermediate (200 level) Course in BI, CH, MT | 3-4 | Choose one 3-4 Credit Intermediate (200 level or higher) Course in BI, CH, MT[3] | 3-4 |
| General Electives | 4 | Choose one 3-4 Credit Intermediate (300 level or higher) Course in BI, CH, MT[3] | 3-4 |
| General Elective | 4 | General Elective | 4 |
| | **17-18** | | **15-17** |

**Senior**

| Fall | Credits | Spring | Credits |
|---|---|---|---|
| Choose One Globally Effective Citizen Course From: AHS 409/GEC 307, GEC 302, GEC 312, GEC 314, GEC 315, GEC 316, GEC 317, GEC 320, GEC 323, GEC 324, GEC 328, GEC 332, GEC 333, GEC 336/SW 336, GEC 393, GEC 398 | 3 | BI-491 | 3 |
| Choose one 3-4 Credit Intermediate (300 level or higher) Course in BI, CH, MT[3] | 3-4 | Choose one 3-4 Credit Intermediate (300 level or higher) Course in BI, CH, MT[3] | 3-4 |
| Choose one 3-4 Credit Intermediate (300 level or higher) Course in BI, CH, MT[3] | 3-4 | Choose one 3-4 Credit Intermediate (300 level or above) Course in BI, CH, MT[3] | 3-4 |
| General Elective | 3 | Choose one 3-4 Credit Intermediate (300 level or above) Course in BI, CH, MT | 3-4 |
| General Elective | 3 | General Elective | 4 |
| | **15-17** | | **16-19** |

**Total Credits 120-133**

1. Choose MT-123 & MT-124 OR MT-148 OR MT-152
2. Pre-Pharmacy students should enroll in BI-251
3. Choose at least 8 elective courses (30+ credits) in BI, CH, or MT; 15 credits at 200 level or above, 15 credits at 300 level or above in at least 2 different disciplines. Check prerequisites carefully.
4. Academic maps are to be used as a guide and assume a Fall start. Official course requirements for each student are housed in Self-Service/Student Planning. Course sequences are subject to change – check with the Academic Advising Office for updated maps.