COLLEGE OF SCIENCE CORE REQUIREMENTS (Information For Biology Majors)

This document was last updated on June 14, 2012. It applies to students who enter Purdue Fall 2007 and after. The most recent information about Science degree requirements is available at:
http://www.science.purdue.edu/index.php/undergraduate-students/your-degree/curriculum-and-degree-requirements/1058-college-of-science-core-requirements-

COMPOSITION AND PRESENTATION

Freshman Composition: All students must complete one of these Freshman Composition options:
- ENGL 10600 (First-Year Composition)
- ENGL 10600 (Accelerated First-Year Composition).

Technical Writing and Presenting for International Students Only: Students in international or foreign status are required to use a course(s) to meet the TWTP requirement. Approved experiential learning options may not be used by this category of students. Special Circumstance: This course-only requirement is waived for international or foreign students from a country whose primary high school/equivalent instruction is in English. Students interested in being approved for a waiver to this course-only requirement are encouraged to speak with their academic advisor.

Technical writing: This requirement can be met by completing one of the following options:
1) Science-based technical communication course:
   - BIOL 23200 (Lab in Cell Structure & Function)
   - CHM 46200 (Intermediate Organic Chemistry)
   - COM 21700 (Science Writing & Presentation)
2) Other courses may be available (see your advisor for more information)
3) Scholarly publication (any one of the following three) (must follow CoS guidelines – check before writing paper(s))
   a. Paper accepted for publication in a peer-reviewed journal or peer-reviewed conference proceedings in which the student is the lead author or has written the large majority of the paper
   b. Paper a College of Science faculty member with expertise in the area deems of publishable quality
   c. Three approved papers of at least 1,500 words each at least one of which makes a strong or persuasive argument.

Technical presentation: Requirement can be met by completing one of the following options:
1) Science-based technical communication course:
   - BIOL 23200 (Lab in Cell Structure & Function)
   - CHM 46200 (Intermediate and Organic Chemistry)
   - COM 21700 (Science Writing & Presentation)
2) Other courses may be available (see your advisor for more information)
3) Presentation at a scientific meeting (sole or predominant presenter) (must follow CoS guidelines – check before presentation)
4) Presentation of work at an adjudicated poster session (must follow CoS guidelines – check before presentation)
   a. Presentation must be made in the presence of a certified judge
   b. Written feedback must be provided to the student
5) Presentation of work during an internship or co-op (must follow CoS guidelines – check before presentation)
6) Three approved 10-minute (or longer) presentations within science course(s) (must follow CoS guidelines – check before presentation)

MATHEMATICS

Students must take a minimum of a one-year sequence of single variable calculus. Options include:
- MA 16100 (Plane Analytic Geometry and Calculus I) and MA 16200 (Plane Analytic Geometry and Calculus II)
- MA 16500 (Analytic Geometry and Calculus I) and MA 16600 (Analytic Geometry and Calculus II)
- MA 23100 (Calculus for Life Sciences I) and MA 23200 (Calculus for Life Sciences II) (Not an option for other CoS majors)

STATISTICS

STAT 50300 (Statistical Methods for Biology) is the required statistics course for Biology majors.

TEAMBUILDING AND COLLABORATION

Students must learn the concepts involved in science team projects --team function, team roles, common goal, and utilizing strengths of team members. Must meet both Teamwork and Collaboration Principles and Experience. Principles must precede Experience. Can be met by completing one of the following options:
1) Teamwork and Collaboration Principles:
   - SCI 21000 (Team Work)
   - BIOL 32800 (Principles of Physiology)
   - CS 15800 (C Programming) (fall 2009 to present)
   - CS 17700 (Programming w/Multimedia Objects) (fall 2009 to present)
   - CS 18000 (Problem Solving and Object-Oriented Programming) (temporary approval Fall 2011)
   - ABC program
   - SCI 36000 Great Issues in Science & Society
   - PHYS 17200 (Modern Mechanics)
   - ENTR capstone course
   - Approved EPICS, Co-op, Internship, or Research Experience
   - ROTC
2) Approved teambuilding and collaboration activity that satisfies requirements of both the principles and experience:
   - CS 15800 (C Programming) (spring and summer 2010)
   - EDCI 49800 (Supervised Teaching Experience)
   - ENGR 13100 (Engr. Problem Solving & Computer Tools)

COMPUTING

Students must take a course in computing concepts taught using an interpreted or compiled programming language. Course content will include basic control structures and function calls. One of these (or an equivalent course) must be completed:
- CS 15800 (Programming I)
- CS 15900 (Programming Applications for Engineers)
- CS 17700 (Programming With Multimedia Objects)
- CS 18000 (Programming I)

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The multidisciplinary requirement can be met by completing one of the following options:

1) Complete a course or experience which involves a multidisciplinary approach to examining a problem or issue, preferably involving multidisciplinary teams at the junior level or above. Approved choices include:
   - approved research project or internship (must get CoS approval prior to the project/internship)
   - Entrepreneurship certificate
   - EPICS (one or more credits)
   - BIOL 39500 (Household Biology & Chemistry)
   - BIOL 44800 (Multidisciplinary Design of Systems & Devices for Physiological Measurements)
   - BIOL 47800 (Introduction to Bioinformatics)
   - BIOL 56200 (Neural Systems)
   - CHM 59900 (Applied Bioinformatics)
   - EDCI 42100 (The Teaching of Biology in Secondary Schools)
   - HONR 39900 (Biotechnology: Social & Ethical Issues)
   - HONR 39900 (Biotechnology: Social & Ethical Issues)
   - MA 37300 (Financial Mathematics)
   - MA 49000 (Computational Cell Biology)

2) Complete an additional major or minor which gives the student experience in another discipline's approach to examining important problems and issues in that discipline. Such an additional major or minor must require at least 3 courses not required for the student’s major.

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