

- V. For individuals interested in the Computer Science option: it is critical to contact the program adviser early in your time at Whitman College. The hierarchical nature of the mathematical coursework required for this option along with the scheduling rotation and enrollment limits of specific mathematics courses make this course of study challenging to accomplish in three years. Indeed, there are a variety of scenarios (including starting this path late) that may preclude an individual from pursuing this option without either additional time at Whitman (beyond the normal three years) or coursework taken elsewhere.
- VI. Individuals interested in biomedical engineering should be aware that the required pre-engineering coursework (i.e., classes to be completed at Whitman) varies widely from one partner institution to another. In particular, a student wanting to do biomedical engineering at Columbia should consider following the Physics track at Whitman and supplementing those courses to complete Columbia's requirements. In contrast, a student wanting to do biomedical engineering at Washington University in Saint Louis should follow the BBMB track at Whitman. Clearly, anyone wanting to pursue biomedical engineering should be in close contact with Whitman's 3/2 adviser.

## Forestry and Environmental Management

*Adviser: Nicholas Bader (Geology)*

Whitman College has an association with the Nicholas School of the Environment at Duke University, Durham, N.C. The Cooperative College Program is designed to coordinate the education of students at Whitman College with graduate programs in the broad area of resources and environment offered at Duke University. Participating students are accepted into either of two degree programs, the Master of Forestry (M.F.) or the Master of Environmental Management (M.E.M.). The cooperative program is designed to accommodate students after three years of study at Whitman or upon graduation from Whitman. Duke requires applicants to take the Graduate Record Exam (general test without any advanced subject tests) in October or December of the year prior to the desired year of entrance. Those students who complete the necessary qualifications and who choose to enter Duke after three years may qualify for one of the professional master's degrees with four semesters at Duke, in which at least 48 credits are earned. Upon completion of the requirements of the Duke program, the student will be awarded the Bachelor of Arts degree in the appropriate field by Whitman College. See the Nicholas School of the Environment website, [www.nicholas.duke.edu](http://www.nicholas.duke.edu), for additional information.

The major for the Whitman degree will be biology or geology, depending on the courses taken at Whitman. The specific requirements to be completed at Whitman College are as follows:

- I. For the biology major, the following courses are required: a minimum of 22 credits of biology to include Biology 111, 112, 205, 215 or 277, plus a minimum of eight additional credits in courses above the 200 level; Chemistry 125, 126, 135, 136, or 140; Economics 100 or 101, 102; Geology 125 (or 110 or 120); Mathematics 125, a statistics course. In addition, the following courses are recommended: Computer Science 167, Economics 307, a year of physics.
- II. For the geology major, the following courses are required: a minimum of 22 credits of geology to include Geology 125 (or 110 or 120), 227, 350, and at least 10 additional credits in courses numbered above 300; Biology 111, 112; Chemistry 125, 126, 135, 136, or 140; Economics 100 or 101, 102; Mathematics 125, a statistics course. In addition, the following courses are strongly recommended: Biology 215 or 277, Computer Science 167, Economics 307, and a year of physics.
- III. Students must have a minimum of two years of residence at Whitman and have completed a minimum of 94 credits.
- IV. Students who wish to participate in this program as a 3-2 candidate must obtain a recommendation from the Duke/Whitman 3-2 Committee. However, Duke University reserves the right to make the final decision regarding acceptability of the student for admission.

## Oceanography

*Advisers: Nicholas Bader (Geology) and Kate Jackson (Biology) (on Sabbatical, Spring 2018)*

Whitman College is associated with the School of Oceanography of the University of Washington in a program for liberal education in biological or geological oceanography. The plan requires five years of study; typically three years at Whitman College and two years at the University of Washington. Students complete a Bachelor of Arts degree in either Biology or Geology from Whitman College and a Bachelor of Science in Oceanography from the University of Washington. At Whitman College, all candidates must complete the appropriate requirements outlined below, receive a recommendation from Whitman College, and apply as transfer student to the University of Washington.

This plan requires careful scheduling. Students must declare one of these majors by the end of their fourth semester in residence at Whitman College (transfer students must declare at the end of their second semester in residence at Whitman College). Interested Whitman students should contact the Whitman Oceanography adviser in their first year at Whitman, and the University of Washington Oceanography academic adviser (Michelle Townsend, mtown@u.washington.edu) when they apply for transfer to coordinate with the admissions office, and to answer questions about course planning.

In order to secure a recommendation from Whitman, a student must satisfy the following requirements during his or her three years at Whitman:

- I. Earn at least 94 credits and spend three years at Whitman (62 credits and two years for transfer students) with a Whitman grade-point average of at least 3.0.
- II. Complete the First-Year Experience, required of all first-year students attending Whitman.
- III. Complete the General Studies Distribution Requirements at Whitman.
- IV. Complete certain mathematics and sciences courses including those listed below, with a cumulative GPA at Whitman in these courses of at least 3.0.

### **Required Math and Science Courses at Whitman College: All Candidates**

- I. *Mathematics*: 125, 126, and 225, 235 or an approved Statistics course (see Whitman Oceanography adviser for current list).
- II. *Chemistry*: 125, 126, 135, 136, and 245 (2 semesters “General Chemistry” with labs) or 140.
- III. *Geology*: 110, 120, or 125. It is strongly recommended that students also take an additional course at Whitman College pertinent to the field of Oceanography, such as Biology 178 or 278, or Geology 130.
- IV. *Biology*: 111 and 112
- V. *Physics*: 155 and 156, or the advanced version of 165 and 166 at Whitman College; or the Physics 121, 122, 123 series at the University of Washington; or Physics 155 at Whitman College and Ocean 285 at the University of Washington.

Also, it is strongly recommended that students take an introductory Marine or Atmospheric Science class at Whitman College, such as Biology 178 or 278, or Geology 130.

### **Additional Required Courses at Whitman College for Biology-Oceanography Majors**

Biology-Oceanography students must also take Biology 205, Chemistry 245, and one course from each of the three upper division Biology and/or BBMB courses in Molecular/Cell, Organismal, and Ecology/Evolution categories at Whitman College. At UW, they must take at least seven semester-equivalent credits of upper-division biology electives, and three semester-equivalent credits of independent research; and they must take the Biology Graduate Record Examination and attain a score sufficient to satisfy Whitman’s requirements.

### **Additional Required Courses at Whitman College for Geology-Oceanography Majors**

Geology-Oceanography students must also take Geology 227, 350, 358, 368, and four or more credits in geology courses numbered above 300 at Whitman College. At UW, they must take at least 12 semester-equivalent credits of upper-division geology electives; and they must take the geology department written major examination and attain a score sufficient to satisfy Whitman’s requirements.