

BIOGEOCHEMISTRY

Degree Requirements

Requirements listed here are in addition to requirements listed in GCAC-208 Dual-Title Graduate Degree Programs (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-titles/>).

To qualify for a dual-title degree, students must satisfy the requirements of the major graduate program in which they are enrolled, in addition to the minimum requirements of the Biogeochemistry program. Students are required to have two advisers from separate disciplines: one individual serving as a primary adviser in their major degree program (i.e., Soil Science, BMMB, Material Science & Engineering, Chemistry, Ecology, Environmental Engineering, Geosciences, or Plant Pathology) and a secondary adviser in an area within a field covered by the dual-title program who is a member of the Biogeochemistry Graduate Faculty. The major program adviser normally will also be a member of the Biogeochemistry Graduate Faculty. The two faculty advisers can represent different academic programs, but this is not required, as faculty from a scientifically diverse department could represent very different areas of expertise.

To fulfill the course requirements for the dual-title in Biogeochemistry, students must complete a total of 15 graduate credits chosen in consultation with the adviser from an approved list of courses in the areas of:

- biochemistry and microbiology,
- environmental chemistry,
- environmental engineering,
- geochemistry,
- materials science and engineering,
- and soil science.

All students must pass a qualifying examination that includes an assessment of their potential in the field of biogeochemistry. In all cases, the result of a single qualifying exam for both entrance to the student's major Ph.D. program and this dual-title program will be reported to the Graduate School. The qualifying examination committee must include at least one member of the Biogeochemistry Graduate Faculty. Faculty members who hold appointments in both programs' Graduate Faculty may serve in a combined role. Because students must first be admitted to a graduate major program of study before they may apply to and be considered for admission into a dual-title graduate degree program, dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the qualifying examination may be delayed one semester beyond the normal period allowable.

The student's Ph.D. committee must include at least one member of the Biogeochemistry Graduate Faculty. Faculty members who hold appointments in both programs' Graduate Faculty may serve in a combined role. If the chair of the committee representing the student's major degree program is not also a member of the Graduate Faculty in Biogeochemistry, the member of the committee representing Biogeochemistry must be appointed as co-chair. The field of Biogeochemistry must be integrated into the comprehensive examination.

A Ph.D. dissertation that contributes fundamentally to the field of Biogeochemistry is required. A public oral presentation of the dissertation is required, which may be part of the final defense within the major degree program.

Ph.D. candidates must complete a dissertation on a topic that contributes fundamentally to the fields of both the student's major degree program and Biogeochemistry. In order to earn the dual-title Ph.D. degree, the dissertation must be accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense).