BIOTECHNOLOGY, M.S.

The master of science (M.S.) in biotechnology provides students with an overarching view of modern biotechnology operations, addressing fundamental scientific and legal matters, innovative technologies and complex business issues. Students thrive in an environment rich in academic and industrial collaboration, leaving the program prepared to assume leadership roles in the biotechnology industry. Practical and results oriented, this two-year program provides the foundation necessary for succeeding and advancing in one of the fastest growing and most complex industries in the world. Top-rated UW–Madison faculty and talented business partners in Wisconsin combine their expertise to provide hands-on, problem-solving experiences while offering flexible schedules for students, including convenient weekend and evening courses.

COURSES

See program website (http://www.ms-biotech.wisc.edu/curriculum.cfm) for required sequence of courses.

FUNDING

Direct financial support from the M.S. in Biotechnology Program is not available. However, students may contact the Office of Student Financial Aid (http://www.finaid.wisc.edu) to discuss federal loan programs and other lending opportunities.

REQUIREMENTS

MINIMUM DEGREE REQUIREMENTS AND SATISFACTORY PROGRESS

To make progress toward a graduate degree, students must meet the Graduate School Minimum Degree Requirements and Satisfactory Progress (http://guide.wisc.edu/graduate/#policiesandrequirementstext) in addition to the requirements of the program.

MASTER’S DEGREES

M.S.

MINIMUM GRADUATE DEGREE CREDIT REQUIREMENT

30 credits

MINIMUM GRADUATE RESIDENCE CREDIT REQUIREMENT

30 credits

MINIMUM GRADUATE COURSEWORK (50%) REQUIREMENT

At least 50% of credits applied toward the graduate degree credit requirement must be completed in graduate-level coursework; courses with the Graduate Level Coursework attributed are identified and searchable in the university's Course Guide (http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle).

PRIOR COURSEWORK REQUIREMENTS: GRADUATE WORK FROM OTHER INSTITUTIONS

No prior coursework from other institutions may be applied toward program requirements.

PRIOR COURSEWORK REQUIREMENTS: UW–MADISON UNDERGRADUATE

No prior coursework from UW–Madison undergraduate career may be applied toward program requirements.

PRIOR COURSEWORK REQUIREMENTS: UW–MADISON UNIVERSITY SPECIAL

No prior coursework taken as a UW–Madison University Special student may be applied toward program requirements.

CREDITS PER TERM ALLOWED

15 credits

PROGRAM-SPECIFIC COURSES REQUIRED

Contact the program for information on any additional required courses.

OVERALL GRADUATE GPA REQUIREMENT

3.00

OTHER GRADE REQUIREMENTS

The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

PROBATION POLICY

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

ADVISOR / COMMITTEE

Every graduate student is required to have an advisor. To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.

An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies.

A committee often accomplishes advising for the students in the early stages of their studies.

ASSESSMENT AND EXAMINATIONS

Contact the program for information on required assessments and examinations.

TIME CONSTRAINTS

Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students
completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

**LANGUAGE REQUIREMENTS**

Contact the program for information on any language requirements.

**ADMISSIONS**

A significant strength of the program is the diversity and experience of the student cohort entering each year.

- Professional work experience is required, which is the primary criteria used in the admission process.
- Applicants should have a bachelor’s degree, minimum 3.0 GPA (on a 4.0 scale).
- Applicants must have a minimum of two semesters of biology or other related life-science courses.

The primary criteria used in the admission process are:

- Work experience
- Grade point average
- Letters of recommendation
- Personal statement of academic career goals

A completed application file will consist of:

- Submitted online application (http://grad.wisc.edu/apply) with paid application fee
- Statement of purpose containing reasons and goals for graduate study
- Professional resume
- 3 letters of recommendation (done electronically on the Graduate School online application)
- Official transcripts from each previous undergraduate and postgraduate institution
- List of awards, honors, and/or publications

The Graduate Record Exam (GRE) is not required for admission.

When all application materials have been received, an in-person or phone interview will be scheduled. Students admitted to the program are expected to own a laptop with wireless connectivity for use throughout their program experience.

**LEARNING OUTCOMES**

**KNOWLEDGE AND SKILLS**

- Apply core scientific and business principles to distinguish the difference between scientific and commercial success, and gain insight into the challenge of balancing product usefulness with positive return on investment.
- Understand how regulation is developed and how it interacts with business and finance to influence the formation and growth of technology companies.
- Understand and apply modern biotechnology methods and practice, as well as effective written and oral scientific communication, through hands-on participation in the laboratory.

- Apply knowledge of seven functional specialties (regulatory affairs, quality assurance, biomanufacturing, quality control, non-clinical development, clinical development and project management) to the coordinated process of product development.
- Understand the processes, technologies, scientific principles and major challenges of the early drug discovery process as it continues to evolve.
- Evaluate the potential of a product or technology based on the organizational resources required for full commercialization.
- Understand firm-level strategic development, and apply strategic business principles in day-to-day operations.
- Demonstrate an ability to identify a global problem, and how biotechnology may offer a novel solution(s).
- Integrate the technical, sociological and leadership skills that are necessary to design, use and defend a global project management plan.

**PROFESSIONAL CONDUCT**

- Integrate topics in science, policy, law and business in order to lead the development and commercialization of new and promising technologies.
- Recognize and apply principles of ethical and professional conduct to develop long-term networks and relationships with industry partners.
- Understand the ethical and safety issues that help shape public policies on biotechnology and its applications.