

DRUG DISCOVERY & DEVELOPMENT

Drug Discovery & Development Overview

The proposed program is being organized in collaboration between the Departments of Biochemistry and Structural Biology (BSB) and Pharmacology at UT Health San Antonio, as an educational arm of the Center for Innovative Drug Discovery (CIDD). This two-year program (32 SCH) will serve multiple purposes. The primary goal will be to train the next-generation workforce that will be needed in the growing biotech sector in South Texas, where San Antonio is proving to be one of the fastest growing markets in Texas. The program design will incorporate comprehensive education and training in the processes of designing, characterizing, testing, and bringing to market pharmacotherapeutic drugs to treat the most vexing diseases we face, including cancer, neurodegenerative diseases, cardiovascular disease, diabetes, osteoporosis, and infectious disease. In addition to a rigorous set of courses, including both required and elective components, there will be a research-based thesis. There will also be enrichment components where students will be exposed to the variety of job opportunities in the broad field of drug discovery, from the earliest phases of discovery at the bench, to the stages of development of a successful drug, and the regulatory and legal aspects of drug development. In this way, it will maximize early training of the diverse range of jobs within medical therapeutics.

This is a newly proposed program, pending approval from The University of Texas System and the Texas Higher Education Coordinating Board. The anticipated inaugural matriculating class is Fall 2025.

Drug Discovery & Development Admission Requirements

All of the required application information, including official transcripts from all institutions attended, must be submitted in order for an applicant to be considered by the M.S. Drug Discovery & Development program Admissions Committee. In general, students should have a sufficient educational background in the biological or biochemical sciences prior to admission to the program. The following minimal requirements will be applied:

1. A baccalaureate degree from an accredited institution in the United States or proof of an equivalent degree and training at a foreign institution.
2. Required prior coursework: 2 years of biological science for science majors with labs; organic and inorganic chemistry with labs. Highly recommended: biochemistry and physiology
3. Minimal grade point average (GPA): No lower than B (3.0 on a 4.0 scale).
4. International applicants from countries where English is not the native language must earn a minimum score of 84 on the Test of English as a Foreign Language (TOEFL), a score of 7.0 on the Academic version of the International English Language Testing System (IELTS) or a score of 115 on the Duolingo English Test. International applicants who have completed or will complete their degree prior to matriculation at an accredited U.S. Institution may be exempted from the TOEFL/IELTS requirement.
5. Letters of recommendation (three) attesting to the applicant's readiness for graduate level studies. These letters should be submitted with the online application to the GSBS.
6. Research experience is not required, but will be considered.
7. Application deadlines can be found on the program's admission page.

Drug Discovery & Development Degree Requirements

Over a 2-year (4-semester) period, students are expected to fulfill all requirements of the M.S. in Drug Discovery & Development Program. Each semester will include a minimum of 8.0 credit hours, approximately 32 credit hours for the entire program.

Year 1: Students must enroll in all required courses and maintain a grade point average at or above 3.0 for all class work. In addition, in order to maintain satisfactory research/academic progress, students are required, prior to the end of the Year 1 fall semester, to identify and engage a faculty member in the program who will serve as the student's research advisor. Students must perform original research in the laboratory of their research advisors starting in spring of year 1. Guidance and evaluation of research progress will be aided by a Research Supervising Committee. Students will be required to meet with the committee each semester from spring, Year 1 onwards, and obtain an S grade. Any I or U grade will result in probation and will need to be remedied by the following meeting. Successive I or U grades for Research, without approved extenuating circumstances, can be grounds for dismissal from the program.

Year 2: In addition to monitoring regular student progress, the Research Supervising Committee, together with the research advisor, will determine if the thesis research is adequate for granting the M.S. degree. This decision is confirmed by a public presentation of the thesis research and a closed-door oral defense of the thesis for the benefit of the Research Supervising Committee.