

TEXAS TECH UNIVERISTY
HEALTH SCIENCES CENTER
Graduate School Biomedical Sciences
M.S. Program Biotechnology

I. Program of Study

The Master of Science (M.S.) in Biotechnology program, located on the Abilene and Lubbock campuses, offers several options for students interested in careers in biotechnology companies; technical research positions in academia, industry, or government agencies; and/or preparing for entry into a doctoral program. The program offers two tracks: (1) a one-year, non-thesis option which provides a strong foundation of knowledge about core concepts with a limited, but concentrated, hands-on research experience; and (2) a 21-month, research track requiring two semesters of primarily didactic coursework and 12 months of full-time laboratory research.

The research track is typically a non-thesis degree with an optional thesis at the end of the second year by arrangement with the advisor. The research component may be completed either at a variety of biotechnology experiences (industry, government, patent office, medical facilities, ect.) or on campus with graduate faculty members with active research programs. In Abilene, faculty members in the Department of Immunotherapeutics and Biotechnology are well-funded researchers who study cancer biology, cancer immunology and immunotherapy, nanoparticle drug delivery, tumor micro-environments, and drug screening. Biotechnology faculty members on the Lubbock campus are located in basic sciences and clinical departments. As such, they represent a variety of research interests, such as addiction, Alzheimer's disease, cancer, diabetes, pain, protein biophysics, virology, and other subjects included across a wide range of biomedical sciences.

The program only admits new students in the

B. Program Mandates

All students are required to take the GSBS Core I-IV curriculum courses in the fall, the Biotechnology core curriculum in the spring, all Interprofessional Education (IPE) requirements (https://www.ttuhsu.edu/interprofessional-education/core_curriculum.aspx), 6 hours of research and at least 12 months of industry internship or academic research, excluding students enrolled in the one year option.

In the spring semester of the first year of study, students will conduct interviews with companies, regulatory agencies and faculty to determine their placement for their second-year research work in the program, as applicable.

C. Biotechnology Student Checklist – Research Track (Appendix 1)

D. Sequence of Events Upon Entering the Program

1. Introductions – All new graduate students will meet with the Biotechnology Graduate Program Advisor – Irene La-Beck (Abilene) & Komaraiah Palle (Lubbock) to plan first-year laboratory rotations and curriculum.
2. Laboratory Rotations – In the fall semester of the first-year curriculum, students take GSBS 5020: Laboratory Methods. Two lab rotations in the spring semester of the first-year curriculum are also required (GBTC 5337 – Techniques in Biotechnology Research). All new graduate students will interview with the biotechnology

7. Completion of the Degree Program:

A) Non-Thesis Option:

All didactic course work should be completed by the start of the second year for students in the research track

APPENDIX 1: Biotechnology Student Checklist Research Track

Degree Plan Checklist Worksheet		
Fall Year 1	Status	<i>13 hours</i>
GSBS 5000 Interprofessional Collab Practice		
GSBS 5471 Core I: Molecules		
GSBS 5372 Core II: Cells		
GSBS 5373 Core III: Genes		
GSBS 5174 Core IV: Seminar		
GBTC 5020 (2) Biotechnology Lab Methods		
Spring Year 1	Status	<i>10 or 11 hours</i>
GBTC 6101/6201 Biotechnology Seminar		
GBTC 6202 Biomedical Informatics		
GBTC 6301 Intro to Biotechnology		
GBTC 5337 Techniques in Biotechnology Research		
GSBS 5101 Responsible Conduct of Research		
Summer Year 1		<i>6 hours</i>
GBTC 7000/GBTC 6001 (6) Research or Internship		
Fall Year 2	Status	<i>9 hours</i>
GBTC 7000/GBTC 6001 (7) Research or Internship		
GBTC 5298 Biotechnology Project Report		
Spring Year 2	Status	<i>9 hours</i>
GBTC 7000/GBTC 6001 (7) Research or Internship		
GBTC 5299 Biotechnology Final Report		

