

**MS in Biotechnology**  
University of Texas at Dallas  
<http://www.utdallas.edu/biotechMS>

***Biotech On Ramp***  
***Summer 2006***

***Getting Ready for the Core Courses***  
***You can take three 1 SCH courses.***

Biotechnology is a new and growing field, with many possibilities for students with diverse backgrounds to enhance their careers. However, many of these students do not have the background in both biology and mathematics that is required for success in the four core courses. In order to help students get up to speed, four 1 SCH courses will be offered in Summer 2006.

**Students with a strong math background**, who need access to modern biology, should take BIOL 5V00-06A (Biology Preparation – MS in Biotechnology I), BIOL 5V00-06M (Biology Preparation – MS in Biotechnology II), and MATH 5V06-06M (Mathematics Preparation – MS in Biotechnology II).

**Students with a strong biology background**, who need access to mathematics/statistics, should take MATH 5V06-06A (Mathematics Preparation – MS in Biotechnology I), BIOL 5V00-06M (Biology Preparation – MS in Biotechnology II), and MATH 5V06-06M (Mathematics Preparation – MS in Biotechnology II).

These courses may be counted as electives in the MS in Biotechnology degree program. Each of the four courses is 1 semester credit hour.

**In a hurry?** Go for non-degree (Biotech) admission! Bring a copy of your college transcript showing award of your undergraduate degree, pick up a paper application, get admitted, register, and pay your fees. We will be glad to have you on board. Regular Summer Admissions (online, see our web site) end approximately May 1, 2006

**For students without biology-intensive backgrounds:**  
**BIOL 5V00-06A Biology Preparation – MS in Biotechnology I**  
Monday & Wednesday 4:00 – 5:30 pm; first class meeting May 15

Amino Acids and Protein Primary Structure  
Protein Secondary and Tertiary Structure  
Protein Quaternary Structure & Modifications  
Nucleotides and Nucleic Acids  
Structure of Nucleic Acids/Sequencing

**For students without math-intensive backgrounds:**  
**MATH 5V06-06A Mathematics Preparation – MS in Biotechnology I**  
Tuesday & Thursday 4:00 – 5:30 pm; first class meeting May 16

Review of advanced algebra & analysis topics: logs and exponentials, sequences and sums, matrix algebra  
Differential calculus review  
Integral calculus review  
Vector calculus review, introduction to differential equations  
Discrete mathematics

**For all students preparing for the core courses:**  
**BIOL 5V00-06M Biology Preparation – MS in Biotechnology II**  
Monday & Wednesday 4:00 - 5:30 pm; first class meeting June 21. Note: Enrollment in BIOL 5V00-06M requires a B or better in BIOL 5V00-06A or consent of the instructor.

Recombinant DNA/PCR/Cloning  
Bioinformatics  
Genomics  
Proteomics

**MATH 5V06-06M Mathematics Preparation – MS in Biotechnology II**  
Tuesday & Thursday 4:00 - 5:30 pm; first class meeting June 22

Programming concepts and hidden Markov models  
Probability theory: discrete and continuous random variables, combinatorics, expectation & moments, density and distribution functions  
Statistics & data analysis I: linear and nonlinear regression, quality of fit, correlation  
Statistics & data analysis II: tests of significance, degrees of freedom, analysis of variance

Distribution of topics among the courses may vary.

February 28, 2006