School of Natural Sciences and Mathematics

Molecular Biology and Business Administration (BS)

The Biology Program at UT Dallas emphasizes the unifying molecular and cellular nature of organisms. At the center of the Biology undergraduate curriculum are the biochemical, genetic, and cell biology concepts and tools used to study the genes of prokaryotes and eukaryotes, to study the proteins and ribonucleic acids (RNA) encoded by these genes, and to study how the expression of these genes is regulated during the development and lifetimes of organisms. Molecular Biology represents a fusion of the four disciplines of biochemistry, biophysics, genetics, and cell biology. Modern biology requires a background in other disciplines such as chemistry, mathematics, physics, and computer sciences. Principles from these disciplines have to be merged to understand and apply new biotechnology and genetic engineering techniques. It is desirable for entering students to have a broad interest and background in the sciences.

Both BS and BA degrees are offered in Biology at UT Dallas; a BS degree is offered in Molecular Biology. The BS degrees are intended as preparation for scientific careers in biology or careers in the health professions. The BA degree is intended as liberal arts biology major with less emphasis on calculus and more free hours for coursework in other disciplines. Each degree in Biology offers a streamlined double major with Business Administration or Crime and Justice Studies. Five-year Fast Track BS/ MS Biology and Molecular Biology degree programs are available.

Minors are offered in Biology, Biomolecular Structure, Microbiology, Molecular and Cell Biology, and Neurobiology.

Bachelor of Science in Molecular Biology and Business Administration (Double Major)

Degree Requirements (144 hours)\(^1\)

I. Core Curriculum Requirements: 42 hours\(^2\)

- Communication (6 hours)
  - 3 hours Communication (RHET 1302)
  - 3 hours Communication Elective (BCOM 3311)\(^3\)

- Social and Behavioral Sciences (15 hours)
6 semester credit hours Government (GOVT 2301 and GOVT 2302)

6 hours American History

3 hours Social and Behavioral Sciences Elective (ECON 2301)

Humanities and Fine Arts (6 hours)

3 hours Fine Arts (ARTS 1301)

3 hours Humanities (HUMA 1301)

Mathematics and Quantitative Reasoning (6 hours)

6 hours Calculus (MATH 2417 and MATH 2419)

Science (9 hours)

9 hours Chemistry (CHEM 1311 and CHEM 1111, CHEM 1312 and CHEM 1112, and CHEM 212)

II. Major Requirements: 93 hours

Biology Major Preparatory Courses (17 hours beyond Core Curriculum)

CHEM 1111 General Chemistry Laboratory I

CHEM 1112 General Chemistry Laboratory II

CHEM 1311 General Chemistry I

CHEM 1312 General Chemistry II

CHEM 2123 Introductory Organic Chemistry Laboratory I

CHEM 2125 Introductory Organic Chemistry Laboratory II

CHEM 2323 Introductory Organic Chemistry I

CHEM 2325 Introductory Organic Chemistry II

MATH 2417 Calculus I

MATH 2419 Calculus II

PHYS 2325 Mechanics and PHYS 2125 Physics Laboratory I

PHYS 2326 Electromagnetism and Waves and PHYS 2126 Physics Laboratory II

Biology Major Core Courses (33 hours)

BIOL 2111 Introduction to Modern Biology Workshop I

BIOL 2112 Introduction to Modern Biology Workshop II

**BIOL 2281** Introductory Biology Laboratory

**BIOL 2311** Introduction to Modern Biology I

**BIOL 2312** Introduction to Modern Biology II

**BIOL 3101** Classical and Molecular Genetics Workshop

**BIOL 3102** Eukaryotic Molecular and Cell Biology Workshop

**BIOL 3161** Biochemistry Workshop I

**BIOL 3162** Biochemistry Workshop II

**BIOL 3301** Classical and Molecular Genetics

**BIOL 3302** Eukaryotic Molecular and Cell Biology

**BIOL 3361** Biochemistry I

**BIOL 3362** Biochemistry II

  or **BIOL 3335** Microbial Physiology

**BIOL 3380** Biochemistry Laboratory

**BIOL 4461** Biophysical Chemistry

**Business Administration Major Preparatory Courses (16 hours beyond Core Curriculum)**

**ACCT 2301** Introductory Financial Accounting

**ACCT 2302** Introductory Management Accounting

**BA 3100** Professional Development

**BLAW 2301** Business and Public Law

**ECON 2301** Principles of Macroeconomics

**ECON 2302** Principles of Microeconomics

**OPRE 3333** Quantitative Business Analysis

  or **MATH 2333** Matrices, Vectors and Their Application

**Business Core Courses (27 hours)**

**BCOM 3311** Business Communication

**BCOM 4350** Advanced Business Communication

**FIN 3320** Business Finance

**MIS 3300** Introduction to Management Information Systems

**OPRE 3310** Operations Management
OBHR 3310 Organizational Behavior
MKT 3300 Principles of Marketing
BPS 4305 Strategic Management
IMS 3310 International Business
STAT 3360 Probability and Statistics for Management and Economics
or STAT 3332 Statistics for Life Sciences
or OPRE 3360 Managerial Methods in Decision Making Under Uncertainty

III. Elective Requirements: 9 hours

Guided Electives (9 hours)

Business (6 hours): To be selected from upper-division JSOM courses. If qualified, the student may select from JSOM graduate courses.

Biology (3 hours): To be selected from BIOL 4380, BIOL 3V96, BIOL 4391, or BIOL 4399.*

All students must complete at least 51 hours of upper-division courses to graduate.

1. Degree is 145 hours if students are required to take NATS 1101.
2. Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major requirements at UT Dallas.
3. A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
4. Six hours of Calculus are counted under Mathematics Core, and 2 hours of Calculus are counted as Biology Major Preparatory Courses.
5. Indicates a prerequisite class to be completed before enrolling for upper-division classes.
6. Requires permission of the Biology Undergraduate Advisor to ensure training in recombinant DNA analysis.

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