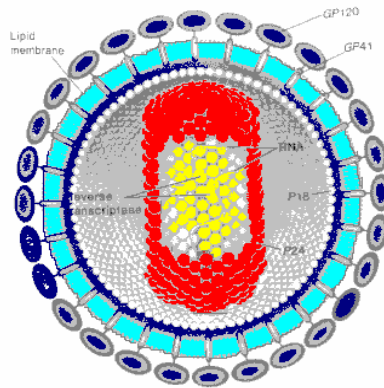


The University of Texas at Dallas



DEPARTMENT OF MOLECULAR AND CELL BIOLOGY

Student Reference Guide

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I. THE UNIVERSITY

The University of Texas at Dallas began as a Graduate Research Center which housed the Southwest Center for Advanced Studies. This Institute was devoted to research in geosciences, atmospheric and space sciences, theoretical physics, and molecular biology. Upon joining the UT system in 1969, UTD established the biology, geoscience, and physics graduate programs and in 1974 an upper division undergraduate curriculum was created.

The University of Texas at Dallas has flourished dramatically since then. In 1990, a four-year undergraduate degree program was established which placed emphasis on science and engineering. New admission standards were set by state law. These standards and the demanding curricula that UTD emphasizes insure that we will have the finest and most successful graduates in the marketplace.

Quality academics are the number one priority to The University of Texas at Dallas. The University takes pride in the development of our students. Enrollment is increasing considerably every year. In the fall of 2005, there were 9,243 undergraduate and 5,237 graduate students enrolled. UTD looks forward to assisting our future students with their academic development.

II. THE SCHOOL OF NATURAL SCIENCE & MATHEMATICS

The School of Natural Science and Mathematics is the cornerstone for the University. The first programs were developed here, and it is a major reason UTD is as successful as it is today. Bachelor's, M.S., and Ph.D. degrees in biology, biochemistry, chemistry, geosciences, mathematics, molecular biology, and physics. M.S. degrees are also offered in Biotechnology and in Bioinformatics and Computational Biology.

The undergraduate program in Biology provides a basic foundation in molecular and cell biology to prepare students for graduate studies in biology (B.S.), for professional studies in a wide variety of health-related areas, for secondary teaching, and for employment as research assistants in pharmaceutical, biotechnology, government, and environmental science laboratories (B.S., B.A.).

The School of Natural Sciences and Mathematics also stresses the need to develop accomplished teachers. Opportunities to complete Texas Teachers Certification requirements are provided to students in Biology, Chemistry, Life/Earth Science, Earth Science, Math, and Physics.

III. THE DEPARTMENT OF MOLECULAR AND CELL BIOLOGY

There are more than 100 graduate students and 900 undergraduate majors in the Department of Molecular and Cell Biology. The Biology Programs at The University of Texas at Dallas promote the development of close relationships between faculty and students. The special, individual attention that each student receives insures the positive maturation of our biology students. Thus, we stress an active and aggressive advisory program for our students.

A. THE UNDERGRADUATE PROGRAMS

The undergraduate Biology Program at The University of Texas at Dallas is one of the fastest growing programs on campus. The four-year program gives the student an option of pursuing either a B.S. or B.A. degree. For those who are preparing for scientific careers in biology or careers in health professions, the B.S. degree would be ideal. For the student who wishes to spend more time in other disciplines (with less emphasis on calculus), the B.A. degree would be more appropriate.

Our program emphasizes molecular and cellular biology. Many different topics are examined, but the heart of the program is focused on studies of gene expression in prokaryotes and eukaryotes, and on the structure and function of the ribonucleic acids and proteins encoded by these genes.

It is in the student's best interest to have a broad background in the sciences to better prepare themselves for the future. Molecular and cell biology are rapidly changing fields, and they require a varied quantitative background that involves chemistry, physics, computer science and mathematics. A broader base of science disciplines increases your chances of understanding and applying new techniques in biotechnology and genetic engineering.

Biology graduates can pursue a wide variety of careers including medical, dental, physician assistant, optometry, veterinary medicine, pharmacy, or other health-related professions such as physical therapy. The student is also well prepared for graduate school and/or industry, if a research position is desired.

BACHELOR OF SCIENCE IN BIOLOGY CORE REQUIREMENTS

124 hours are required for a B.S. degree in Biology, with the following course distribution:

General education core requirements outside of science and mathematics: 27 hours

Rhetoric (6 hours)
U.S. History (6 hours)
U.S./Texas Government (6 hours)
Visual & Performing Arts (3 hours)
Humanities (3 hours)
Social and Behavioral Sciences (3 hours)

Mathematics and science requirements outside of biology: 32 hours

Calculus (8 hours)
General Chemistry with lab (8 hours)
Organic Chemistry with lab (8 hours)
Physics (Calculus-based) with lab (8 hours)

Biology courses: 32 hours

BIOL 2311, 2111 Introduction to Modern Biology I, and Workshop
BIOL 2312, 2112 Introduction to Modern Biology II, and Workshop
BIOL 2281 Introduction to Biology Laboratory
BIOL 3301, 3101 Classical and Molecular Genetics, and Workshop
BIOL 3302, 3102 Eukaryotic Molecular and Cell Biology, and Workshop
BIOL 3361, 3161 Biochemistry I, and Workshop
BIOL 3362, 3162 Biochemistry II, and Workshop
BIOL 3380 Biochemistry Laboratory
BIOL 4380 Cell Biology Laboratory

Biology electives: 12 hours
Free Electives: 21 hours

BACHELOR OF SCIENCE IN MOLECULAR BIOLOGY CORE REQUIREMENTS

129 hours are required for a B.S. degree in Molecular Biology, with the following course distribution:

General education core requirements outside of science and mathematics: 27 hours (same as for B.S. in Biology, above)

Mathematics and science requirements outside of biology: 35-36 hours

Calculus (8 hours)
Multivariable Calculus (4 hours) or
Statistics for Life Sciences (3 hours)
General Chemistry with lab (8 hours)
Organic Chemistry with lab (8 hours)
Physics (Calculus-based) with lab (8 hours)

Biology courses: 36 hours

BIOL 2311, 2111 Introduction to Modern Biology I, and Workshop
BIOL 2312, 2112 Introduction to Modern Biology II, and Workshop
BIOL 2281 Introduction to Biology Laboratory
BIOL 3301, 3101 Classical and Molecular Genetics, and Workshop
BIOL 3361, 3161 Biochemistry I, and Workshop
BIOL 3362, 3162 Biochemistry II, and Workshop
BIOL 4461 Biophysical Chemistry
BIOL 3380 Biochemistry Laboratory
BIOL 4380 Cell Biology Laboratory
Molecular Biology-related Biology and Chemistry electives: 12 hours
Free electives: 18-19 hours

BACHELOR OF ARTS IN BIOLOGY CORE REQUIREMENTS

124 hours are required for the B.A. degree in Biology, with the following course description:
General education core requirements 27 hours (same as B.S. requirements, above left)
Mathematics and science requirements outside of biology: 30-32 hours

Calculus (8 hours) or
Applied Calculus (3 hours) & Statistics (3 hours)
General Chemistry with lab (8 hours)
Organic Chemistry with lab (8 hours)
Physics (calculus or algebra-based) w/lab (8 hours)

Biology courses: 29 hours (same as B.S. requirements except without **BIOL 4380**)
Biology electives: 9 hours
Free electives: 27-29 hours

BIOLOGY/BUSINESS ADMINISTRATION- DOUBLE MAJOR PROGRAM FOR BIOTECHNOLOGY

The Schools of Natural Sciences and Mathematics and Management offer the options of a Biology or Molecular Biology/Business Administration double major for Biotechnology.

This streamlined program (136 hours) enables majors to extend their undergraduate program to a dual major by enhancing their Biology training with 39 hours of Management core consistent with that of Business majors. Biology students substitute School of Management courses for their biology and free electives.

Management Prerequisites (18 hours)
ECO 2301 Macroeconomics
ECO 2302 Business and Public Law
BA 2301 Business and Public Law

AIM 2301 Introductory Financial Accounting
AIM 2302 Introductory Management Accounting
MATH 2333 Matrices, Vectors, & App.
Business Admin. Core (21 hours) plus **BA 4305**
Social & Political Environment of Business
AIM & BA Electives (9 hours)

BIOLOGY/CRIME AND JUSTICE STUDIES/DOUBLE MAJOR PROGRAM FOR FORENSICS

The Schools of Natural Sciences and Mathematics and Social Sciences offer double major degree plans in Biology or Molecular Biology/Crime and Justice Studies for Forensics. These streamlined plans (130 hours) include Forensic Biology, **BIOL 3318**, the core curriculum for Biology majors, 18 core Crime and Justice Studies hours, and 15 hours of upper level electives, which must be approved by the Crime and Justice Studies advisor, Dr. Paul Tracy.

MAJOR IN BIOLOGY OR MOLECULAR BIOLOGY WITH MINOR OPTIONS

To enhance the Biology and Molecular Biology majors, the Biology Program offers minors in **Microbiology**, **Neurobiology**, and **Biomolecular Structure**. An additional enhancement for Biology majors is a minor in **Molecular and Cell Biology**. Each of these minors requires 18 hours and may be obtained by substituting 12-17 hours of required upper-level course work for free electives. The additional 1-6 hours required for the minor are satisfied by CHEM 2323 and CHEM 2325 – Organic Chemistry I and II taken as a requirement for the Biology or Molecular Biology major.

Non-majors may choose a Biology major.

MINOR REQUIREMENTS

Microbiology minor

CHEM 2323/2325 Organic Chemistry I & II
BIOL 3V20 General Microbiology with Lab
BIOL 3335 Microbial Physiology
BIOL 4340 Medical Microbiology or
BIOL 4316 Parasites & Symbionts
BIOL 4345 Immunobiology
UL Microbiology elective

Neurobiology minor

CHEM 2323/2325 Organic Chemistry I & II
BIOL 3371 Biology of the Brain or
NCS 4352 Cellular Neuroscience
NCS 4353 Neuroscience Laboratory Methods
NCS 4354 Integrative Neuroscience
BIOL 4370 Developmental Neurobiology

Biomolecular Structure minor

CHEM 2323/2325 Organic Chemistry I & II
BIOL 3336 Protein and Nucleic Acid Structure
BIOL 4461 Biophysical Chemistry
BIOL 4261 Biomolecular Modeling
One approved upper-level BIOL, CHEM, CS, EE,
Math, or PHYS elective

Molecular and Cell Biology minor

CHEM 2323/2325 Organic Chemistry I & II
Four approved molecular and cell biology electives

Biology minor

BIOL 2311/2111 Introduction to Modern Biology
with Workshop
BIOL 3301/3101 Classical and Molecular Genetics
with Workshop
BIOL 3361/3161 Biochemistry with Workshop
Two **BIOL** electives for majors

FAST TRACK B.S./M.S.

Students who have successfully completed 90 hours towards the Biology B.S. degree may, in their senior year, enter an accelerated B.S./M.S. degree program. This program provides an opportunity to obtain the B.S. degree in Biology after 124 hours of work and an M.S. degree in Molecular and Cell Biology after an additional minimum of 27 hours of graduate course and research work. A requirement for entering the program is the completion of 90 hours of undergraduate course work, including at least 12 hours of upper-division Biology core courses (**BIOL 3301, BIOL 3302, BIOL 3361, BIOL 3380**) with a GPA of 3.5 or better in Biology courses. Permission to enter the program also requires the approval of the Biology undergraduate advisor, the Biology graduate advisor, and the Biology Department Head.

THE 7-YEAR B.S./D.O. DUAL DEGREE PROGRAM

The Department of Molecular and Cell Biology has developed a program that, in conjunction with the UNT Health Science Center at Fort Worth School of Osteopathic Medicine (UNTHSC/TCOM), provides Biology majors the opportunity to earn both a Bachelor of Science degree from UTD and a Doctor of Osteopathic Medicine in 7 years. Students enrolled in the program take regular Biology core courses at UTD for the first three years. Application to TCOM will be initiated in the spring of the second year, and the MCAT typically taken in August prior to the third year. After acceptance into TCOM, the student will spend their fourth year taking courses for credit towards a D.O. degree at TCOM. Once the student has successfully completed their first year at TCOM, they will receive a Bachelor of Science

degree in Biology from UTD. Students interested in this program should speak with their advisor or the Chair of the Undergraduate Education Committee, Dr. Robert Marsh.

A Note to All Transfer Students

If you are a transfer student from a community/junior college, you may choose to be accepted under an older degree plan with somewhat different requirements due to a grandfather clause. Transferring biology students must set up an appointment to be advised before registering. Please contact Ms. Linda Hollister (972)883-2500, Secretary in the NS&M Advising Office, to set up appointment with one of our advisors. Students with special concerns may wish to also speak with the Chair of the Undergraduate Education Committee, Dr. Dennis Miller (972) 883-2539.

BIOLOGY HONORS GUIDELINES

The requirement of an honors thesis for Magna and Summa cum Laude honors has been eliminated. The new requirements as specified in the undergraduate catalog are:

A minimum of 45 U.T. Dallas graded credit hours are required. Each honors level requires a minimum grade point average (GPA) to be attained over all course work taken at The University of Texas at Dallas. In the case of a student with a double major who wishes to graduate with honors, a single honors designation will be awarded. Students graduating with double degrees who wish to receive honors for both degrees must complete separate honors requirements for each degree.

The grade point requirements for Latin Honors are issued by the university in the summer of each academic year and apply to graduates in the following academic year. The thresholds for each level of honors are determined from a rolling average of the grades of all graduates for the previous six long semesters. Averages are computed separately for each school within the university. The grade point average that represents the top five percent of all graduates in a particular school will be considered the threshold for awarding summa cum laude honors. The grade point average that defines the next 10 percent in each school will be the lower limit for magna cum laude. The average grade that defines the next 15 percent in each school will be considered the benchmark for awarding cum laude honors. A minimum grade point average of 3.4 is required for any Latin Honors.

B. THE GRADUATE PROGRAM

The graduate program offers the Master of Science and the Doctor of Philosophy degrees in Molecular and Cell Biology. The program stresses the interdisciplinary nature of research in modern molecular and cellular biology through a program of core and elective courses listed.

Students in the M.S. degree program have an option of completing the degree with or without a thesis. After the core courses are completed, a thesis may be pursued based on laboratory research. With this option, the student gains valuable experience in the lab and is provided the opportunity to choose a faculty supervisor to assist with their work. The non-thesis option involves the student completing a body of elective courses. This is designed for students not wishing to pursue a research career.

The Ph.D. degree may be pursued directly. Following the first year core courses and laboratory rotations, students are evaluated for their academic and research potential by the faculty. The candidate then chooses a supervising professor and committee to oversee the remaining studies. An oral Qualifying Exam is taken following the second year to progress to doctoral candidacy.

There are many career opportunities for students who are awarded the M.S. or Ph.D. degrees. Recipients of the M.S. degree generally hold research positions in hospital, university, government, environmental, public health, or industrial laboratories. The Ph.D. recipients generally occupy tenure-track positions in universities or medical schools or are involved in research in industry.

MASTER OF SCIENCE REQUIREMENTS

For complete participation in the Graduate Program, the student must have a solid background in the following courses: general biology, calculus, genetics, biochemistry, general physics, and organic chemistry. For the M.S. degree, at least 36 graduate semester hours must be completed including the following core courses:

BIOL 5410 Biochemistry of Proteins and Nucleic Acids

BIOL 5420 Molecular Biology

BIOL 5430 Macromolecular Physical Chemistry

BIOL 5440 Cell Biology

- Students submitting a thesis must complete an additional 20 hours of biology courses including the following:

BIOL 6193 Colloquium in Molecular and Cell Biology

BIOL 8V98 Thesis

Six hours of graded Biology electives at the 5000 level or above.

- Students not submitting in a thesis must complete an additional 20 hours of biology courses including, nine hours of graded biology electives at the 5000 level or above.

DOCTOR OF PHILOSOPHY REQUIREMENTS

For students to obtain the Ph.D. degree all of the customary academic requirements must be met, as well as the four core courses listed under the M.S. degree. The following requirements must also be satisfied:

- At least 90 credit hours must be completed, including
BIOL 5V50 Methods in Molecular and Cellular Biology I
BIOL 5V51 Methods in Molecular and Cellular Biology II
- Students must include 9 minimum credit hours in four graded biology elective courses at the 5000 level or above.
- An oral qualifying exam must be taken no later than three semesters after completing the core courses.
- After the dissertation has been written, a dissertation defense will be conducted.

2006-2008 UTD DEGREE PLAN - BIOLOGY and BUSINESS ADMINISTRATION DOUBLE MAJOR

rev.4/07/06

NAME: _____
 SS or ID #: _____
 PHONE: _____
 DEGREE SOUGHT: BS BA

FACULTY ADVISOR: _____
 PHONE: _____
 MATRICULATION DATE: _____
 TASP COMPLETED: _____

PRE-HEALTH: YES NO
 AREA: _____
 DOUBLE MAJOR: _____
 TEACHER CERT.: 2nd FIELD

0. FRESHMAN REQUIREMENT 1 Hr				III. BIOLOGY REQUIREMENTS 32 Hrs (10 LL/22 UL)			
Oral Communication/Critical Thinking ¹	RHET 1101	1		Intro to Modern Biology I & wkshp	BIOL 2311,2111	4	
I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)				Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4	
Rhetoric (Composition II)	RHET 1302	3		Intro Biology Lab	BIOL 2281	2	
Advanced Writing (Communication Elective) ²	BA 4305	3		Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4	
US & Texas History ³		3		Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4	
US & Texas History ³		3		Biochemistry I & wkshp	BIOL 3361, 3161	4	
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3		Biochemistry II & wkshp	BIOL 3362, 3162	4	
Political Institutions in US & TX	GOVT 2302	3		Biochemistry Lab	BIOL 3380	3	
Visual & Performing Arts ³		3		Cell Biology Lab (BS) or Bio Elective (BA)	BIOL 4380	3	
Humanities ³		3		IV. BUSINESS REQUIREMENTS 15 Hrs (All LL)			
Macroeconomics (Social & Behav. Sciences)	ECO 2301	3		Microeconomics	ECO 2302	3	
II. MATH & SCIENCE BS 32Hrs (26 LL, 6 UL); BA 30-32 Hrs ³ (All LL)				Matrices, Vectors, & Linear Program	MATH 2333	3	
Calculus I ⁴	MATH 2417	4		Business and Public Law	BA 2301	3	
Calculus II ⁴	MATH 2419	4		Intro to Financial Accounting	AIM 2301	3	
General Chemistry I	CHEM 1311	3		Intro to Cost Management	AIM 2302	3	
General Chemistry Lab I	CHEM 1111	1		V. MANAGEMENT REQUIREMENTS 21 Hrs (All UL)			
General Chemistry II	CHEM 1312	3		Probability and Statistics	STAT 3332 or 3360	3	
General Chemistry Lab II	CHEM 1112	1		Business Finance	BA 3341	3	
Intro Organic Chemistry I ⁵	CHEM 2323	3		Management Information Systems	BA 3351	3	
Intro Organic Chemistry Lab I	CHEM 2123	1		Production Management	BA 3352	3	
Intro Organic Chemistry II ⁵	CHEM 2325	3		Organization Behavior	BA 3361	3	
Intro Organic Chemistry Lab II	CHEM 2125	1		Marketing Management	BA 3365	3	
Physics for BioSciences I ⁶ (Mech. & Heat)	PHYS 3341	3		International Business	BA 4371	3	
Physics Lab I ⁶	PHYS 2125	1		VI. MANAGEMENT ELECTIVES ⁷ 9 Hrs (All UL)			
Physics for BioSciences II ⁶ (Electro. & Waves)	PHYS 3342	3					
Physics Lab II ⁶	PHYS 2126	1					

¹ Required only for freshmen.

² BA 4305 Social & Political Environment of Business satisfies the **Advanced Writing Requirement** for this double major.

³ See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

⁴ For the BA, the math requirement may be satisfied with 6 hrs of Applied Calculus I & II (MATH 1325 & 1326).

⁵ Satisfies the **Advanced Elective requirement**.

⁶ For the BA, the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102).

⁷ To be selected from AIM and BA courses.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 135*(BA) - 137*(BS)

*Transfer students w/8 hours in Biology I & II w/lab & no RHET 1101 may graduate w/132-134 hours.

Degree Plan Approved: _____

Undergraduate Advisor _____ Date _____

Final Degree Plan Approved: _____
 (For Graduation)

College Master _____ Date _____

2006-2008 UTD DEGREE PLAN - BIOLOGY MAJOR with Minor in Biomolecular Structure

rev.4/07/06

NAME: _____
 SS or ID #: _____
 PHONE: _____
 DEGREE SOUGHT: BS BA

FACULTY ADVISOR: _____
 PHONE: _____
 MATRICULATION DATE: _____
 TASP COMPLETED: _____

PRE-HEALTH: YES NO
 AREA: _____
 DOUBLE MAJOR: _____
 TEACHER CERT.: 2nd FIELD _____

I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)					III. BIOLOGY CORE BS 32 Hrs (10 LL/22 UL); BA 29 Hrs (10 LL/19UL)				
Rhetoric (Composition II)	RHET 1302	3			Intro to Modern Biology I & wkshp	BIOL 2311,2111	4		
Advanced Writing (Communication Elective) ¹	BIOL	3			Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4		
US & Texas History ²		3			Intro Biology Lab	BIOL 2281	2		
US & Texas History ²		3			Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4		
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3			Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4		
Political Institutions in US & TX	GOVT 2302	3			Biochemistry I & wkshp	BIOL 3361, 3161	4		
Visual & Performing Arts ²		3			Biochemistry II & wkshp	BIOL 3362, 3162	4		
Humanities ²		3			Biochemistry Lab	BIOL 3380	3		
Social & Behavioral Sciences ²		3			Cell Biology Lab (BS only)	BIOL 4380	3		
II. MATH & SCIENCE BS 32Hrs (26 LL, 6 UL); BA 30-32 Hrs ³ (27-29 LL, 3UL)					IV. BIOLOGY ELECTIVES BS 12 Hrs (All UL); BA 9 Hrs (All UL)				
Calculus I ³	MATH 2417	4				BIOL	3		
Calculus II ³	MATH 2419	4				BIOL	3		
General Chemistry I	CHEM 1311	3				BIOL	3		
General Chemistry Lab I	CHEM 1111	1				(BS only) BIOL	3		
General Chemistry II	CHEM 1312	3			V. BIOMOLECULAR STRUCTURE MINOR 12 Hrs ⁶ (All UL)				
General Chemistry Lab II	CHEM 1112	1			Protein and Nucleic Acid Structure	BIOL 3336	3		
Intro Organic Chemistry I ⁴	CHEM 2323	3			Biophysical Chemistry	BIOL 4461	4		
Intro Organic Chemistry Lab I	CHEM 2123	1			Biomolecular Modeling	BIOL 4261	2		
Intro Organic Chemistry II ⁴	CHEM 2325	3			BIOL, CHEM, CS, EE, MATH, or PHYS approved UL elect		3		
Intro Organic Chemistry Lab II	CHEM 2125	1			VI. FREE ELECTIVES BS 9 Hrs (LL or UL); BA 15-17 Hrs (At least 5 UL) ⁷				
Physics for BioSciences I ⁵ (Mech. & Heat)	PHYS 3341	3			Oral Communications ⁸	RHET 1101	1		
Physics Lab I ⁵	PHYS 2125	1					3		
Physics for BioSciences II ⁵ (Electro. & Waves)	PHYS 3342	3					3		
Physics Lab II ⁵	PHYS 2126	1					2		
						(BA only)	3		
						(BA only)	3		
						(BA only)	2		

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminal Papers in Bio, BIOL 4390 Sr. Research & Advanced Writing, or BIOL 4399 Sr. Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives.

² See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³ For the BA, the math requirement may be satisfied with 6 hrs of Applied Calculus I (MATH 1325) & Statistics for Life Sciences (STAT 3332).

⁴ Satisfies the Advanced Elective requirement.

⁵ For the BA, the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102).

⁶ Organic Chemistry I and II are included to satisfy the 18 hour **Minor requirement**

⁷ These UL hours are to meet the 51 UL hour graduation requirement. May be taken at LL if compensatory UL hours are taken among core curriculum requirements.

⁸ Required only for freshmen.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 12^{4*} (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 123 hours.

Degree Plan Approved: _____
 Undergraduate Advisor Date
 Final Degree Plan Approved: _____
 (For Graduation) _____
 College Master Date

2006-2008 UTD DEGREE PLAN - BIOLOGY and CRIME & JUSTICE STUDIES DOUBLE MAJOR

rev.4/12/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DEGREE SOUGHT: BS BA

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD _____

I. CORE CURRICULUM 27 Hrs: (24 LL, lower level/3 UL, upper level)					III. BIOLOGY: BS 38 Hrs (10 LL/28 UL)				
Rhetoric (Composition II)	RHET 1302	3			Intro to Modern Biology I & wkshp	BIOL 2311,2111	4		
Advanced Writing (Communication Elective ¹)		3			Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4		
US & Texas History ²		3			Intro Biology Lab	BIOL 2281	2		
US & Texas History ²		3			Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4		
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3			Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4		
Political Institutions in US & TX	GOVT 2302	3			Forensic Biology	BIOL 3318	3		
Visual & Performing Art ²		3			Biochemistry I & wkshp	BIOL 3361, 3161	4		
Humanities ²		3			Biochemistry II & wkshp	BIOL 3362, 3162	4		
Social & Behav Sci: Macro- or Microeconomics	ECO 2301/2302	3			Biochemistry Lab	BIOL 3380	3		
II. MATH & SCIENCE BS 32Hrs (26 LL, 6 UL); BA 30-32 Hrs ³ (Up to 10 UL)					V. CRIME & JUSTICE STUDIES 33 Hrs (All UL)				
Calculus I ³	MATH 2417	4			Biology Elective (UL) ⁶	BIOL	3		
Calculus II ³	MATH 2419	4			Biology Elective (UL)	BIOL	3		
General Chemistry I	CHEM 1311	3			Crime & Civil Liberties	CJS 3300	3		
General Chemistry Lab I	CHEM 1111	1			Theories of Justice ⁷	CJS 3301	3		
General Chemistry II	CHEM 1312	3			Advanced Criminology	CJS 3302	3		
General Chemistry Lab II	CHEM 1112	1			Advanced Criminal Justice	CJS 3303	3		
Intro Organic Chemistry ⁴	CHEM 2323	3			Research Methods in CJS Studies	CJS 3304	3		
Intro Organic Chemistry Lab I	CHEM 2123	1			Comparative Justice Systems	CJS 3319	3		
Intro Organic Chemistry I ⁴	CHEM 2325	3			Social Control & Criminal Sanction	CJS 4306	3		
Intro Organic Chemistry Lab II	CHEM 2125	1			Senior Seminar	CJS 4321	3		
Physics for BioSciences I ⁵ (Mech. & Heat)	PHYS 3341	3			Major & Related Elective ⁸		3		
Physics Lab I ⁵	PHYS 2125	1			Major & Related Elective ⁸		3		
Physics for BioSciences II ⁵ (Electro. & Waves)	PHYS 3342	3			Major & Related Elective ⁸		3		
Physics Lab II ⁵	PHYS 2126	1			VI. OTHER 1Hr (LL)				
					Oral Communications ⁹	RHET 1101	1		

¹The **Advanced Writing requirement** may be satisfied by BIOL 4337 Seminal Papers in Bio, BIOL 4390 Sr Research & Advanced Writing, BIOL 4399 Sr Honors Research & Thesis, or CJS 3300 Crime and Civil Liberties. See advisor for alternative approved courses.

²See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³For the BA, the math requirement may be satisfied with Applied Calculus I (MATH 1325) and either Statistics for Life Sciences (STAT 3332) or Social Statistics with Lab (SOC 3305/3105).

⁴Satisfies the **Advanced Elective requirement**.

⁵For the BA, the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102).

⁶For the BS, Cell Biology Lab (BIOL 4380) must be taken as the biology elective

⁷Or another course with distributive justice emphasis, such as SOC 4361 or ECO 4320.

⁸See advisor for list.

⁹Required only for freshmen.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 129-131*

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 126-128 hours.

Degree Plan Approved: _____

Undergraduate Advisor _____ Date _____

Final Degree Plan Approved _____

(For Graduation) _____

College Master _____ Date _____

2006-2008 UTD DEGREE PLAN - BIOLOGY MAJOR

rev.4/07/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DOUBLE MAJOR: _____

DEGREE SOUGHT: BS BA

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD

I. CORE CURRICULUM 27 Hrs (24 LL, lower level; 3 UL, upper level)					III. BIOLOGY CORE BS 32 Hrs (10 LL/22 UL); BA 29 Hrs (10 LL/19UL)				
Rhetoric (Composition II)	RHET 1302	3			Intro to Modern Biology I & wkshp	BIOL 2311,2111	4		
Advanced Writing (Communication Elective) ¹	BIOL	3			Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4		
US & Texas History ²		3			Intro Biology Lab	BIOL 2281	2		
US & Texas History ²		3			Classical & Molec Genetics & wkshp	BIOL 3301, 310	4		
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3			Molecular & Cell Biology & wkshp	BIOL 3302, 310	4		
Political Institutions in US & TX	GOVT 2302	3			Biochemistry I & wkshp	BIOL 3361, 316	4		
Visual & Performing Arts ²		3			Biochemistry II & wkshp	BIOL 3362, 316	4		
Humanities ²		3			Biochemistry Lab	BIOL 3380	3		
Social & Behavioral Sciences ²		3			Cell Biology Lab (BS only)	BIOL 4380	3		
II. MATH & SCIENCE BS 32Hrs (26 LL, 6 UL); BA 30-32 Hrs ³ (27-29 LL, 3UL)					IV. BIOLOGY ELECTIVES BS 12 Hrs (All UL); BA 9 Hrs (All UL)				
Calculus I ³	MATH 2417	4				BIOL	3		
Calculus II ³	MATH 2419	4				BIOL	3		
General Chemistry I	CHEM 1311	3				BIOL	3		
General Chemistry Lab I	CHEM 1111	1				(BS only) BIOL	3		
General Chemistry II	CHEM 1312	3			V. FREE ELECTIVES BS 21 Hrs (At least 8 UL) ⁶ ; BA 27-29 Hrs (At least 17 UL) ⁶				
General Chemistry Lab II	CHEM 1112	1			Oral Communications ⁷	RHET 1101	1		
Intro Organic Chemistry I ⁴	CHEM 2323	3					3		
Intro Organic Chemistry Lab I	CHEM 2123	1					3		
Intro Organic Chemistry II ⁴	CHEM 2325	3					3		
Intro Organic Chemistry Lab II	CHEM 2125	1					3		
Physics for BioSciences I ⁵ (Mech. & Heat)	PHYS 3341	3					3		
Physics Lab I ⁵	PHYS 2125	1					3		
Physics for BioSciences II ⁵ (Electro. & Waves)	PHYS 3342	3					2		
Physics Lab II ⁵	PHYS 2126	1				(BA only)	3		
						(BA only)	3		
						(BA only)	2		

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminar Papers in Bio, BIOL 4390 Sr. Research & Advanced Writing, or BIOL 4399 Sr. Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives

² See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³ For the BA, the math requirement may be satisfied with 6 hrs of Applied Calculus I (MATH 1325) & Statistics for Life Sciences (STAT 3332).

⁴ Satisfies the Advanced Elective requirement.

⁵ For the BA, the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102).

⁶ These UL hours are to meet the 51 UL hour graduation requirement. May be taken at LL if compensatory UL hours are taken among core curriculum requirements.

⁷ Required only for freshmen.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 12* (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 122 hours.

Degree Plan Approved: _____

Undergraduate Advisor Date

Final Degree Plan Approved: _____

(For Graduation)

College Master Date

2006-2008 UTD DEGREE PLAN - BIOLOGY MAJOR with Minor in Microbiology

rev.4/07/06

NAME: _____
 SS or ID #: _____
 PHONE: _____
 DEGREE SOUGHT: BS BA

FACULTY ADVISOR: _____
 PHONE: _____
 MATRICULATION DATE: _____
 TASP COMPLETED: _____

PRE-HEALTH: YES NO
 AREA: _____
 DOUBLE MAJOR: _____
 TEACHER CERT.: 2nd FIELD

I. CORE CURRICULUM 27 Hrs (24 LL, lower level; 3 UL, upper level)					III. BIOLOGY CORE BS 32 Hrs (10 LL/22 UL); BA 29 Hrs (10 LL/19UL)				
Rhetoric (Composition II)	RHET 1302	3			Intro to Modern Biology I & wkshp	BIOL 2311,2111	4		
Advanced Writing (Communication Elective ¹)	BIOL	3			Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4		
US & Texas History ²		3			Intro Biology Lab	BIOL 2281	2		
US & Texas History ²		3			Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4		
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3			Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4		
Political Institutions in US & TX	GOVT 2302	3			Biochemistry I & wkshp	BIOL 3361, 3161	4		
Visual & Performing Art ²		3			Biochemistry II & wkshp ⁶	BIOL 3362, 3162	4		
Humanities ²		3			Biochemistry Lab	BIOL 3380	3		
Social & Behavioral Science ²		3			Cell Biology Lab ⁶ (BS only)	BIOL 4380	3		
II. MATH & SCIENCE BS 32Hrs (26 LL, 6 UL); BA 30-32 Hrs ³ (27-29 LL, 3UL)					IV. BIOLOGY ELECTIVES BS 12 Hrs (All UL); BA 9 Hrs (All UL)				
Calculus I ³	MATH 2417	4				BIOL	3		
Calculus II ³	MATH 2419	4				BIOL	3		
General Chemistry I	CHEM 1311	3				BIOL	3		
General Chemistry Lab I	CHEM 1111	1			(BS only)	BIOL	3		
General Chemistry II	CHEM 1312	3			V. MICROBIOLOGY MINOR 12-17 Hrs ⁷ (All UL)				
General Chemistry Lab II	CHEM 1112	1			General Microbiology with Lab ⁶	BIOL 3V20	5		
Intro Organic Chemistry ⁴	CHEM 2323	3			Microbial Physiology ⁶	BIOL 3335	3		
Intro Organic Chemistry Lab I	CHEM 2123	1			Medical Microbiology	BIOL 4340	3		
Intro Organic Chemistry I ⁴	CHEM 2325	3			or Parasites & Symbiont:	BIOL 4316	3		
Intro Organic Chemistry Lab II	CHEM 2125	1			Immunobiology	BIOL 4345	3		
Physics for BioSciences I ⁵ (Mech. & Heat)	PHYS 3341	3			UL Microbiology elective	BIOL	3		
Physics Lab I ⁵	PHYS 2125	1			VI. FREE ELECTIVES BS 4-9 Hrs (LL or UL); BA 10-17 Hrs (0-5 UL) ⁸				
Physics for BioSciences I ⁵ (Electro. & Waves)	PHYS 3342	3			Oral Communications (freshmen only)	RHET 1101	1		
Physics Lab II ⁵	PHYS 2126	1					3		
							2		
					(BA only)		3		
					(BA only)		3		
					(BA only)		2		

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminal Papers in Bio, BIOL 4390 Sr. Research & Advanced Writing, or BIOL 4399 Sr. Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives.

² See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended transfer students in order to meet the 51 UL credit hour graduation requirement.

³ For the BA, the math requirement may be satisfied with 6 hrs of Applied Calculus I (MATH 1325) & Statistics for Life Sciences (STAT 3332).

⁴ Satisfies the Advanced Elective requirement.

⁵ For the BA, the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102).

⁶ General Microbiology Lab (2 hrs) and Microbial Physiology may be used to satisfy the Biochemistry II and Cell Biology Lab requirements of the major and replaced with Organic Chemistry hrs for the minor.

⁷ Sufficient Organic Chemistry I and II hours are included to satisfy the 18 hour **Minor requirement**

⁸ These UL hours are to meet the 51 UL hour graduation requirement. May be taken at LL if compensatory UL hours are taken among core curriculum requirements.

TRANSFERRED HOURS: LL _____ UL _____
 UTD HOURS: LL _____ UL _____
 MINIMUM SEMESTER HOURS: 124* (51 Hours Required at UL)
 *Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 122 hours.
 Degree Plan Approved: _____
 Undergraduate Advisor _____ Date _____
 Final Degree Plan Approved: _____
 (For Graduation) _____
 College Master _____ Date _____

2006-2008 UTD DEGREE PLAN - BIOLOGY MAJOR with Minor in Molecular & Cell Biology

rev.4/07/06

NAME: _____
 SS or ID #: _____
 PHONE: _____
 DEGREE SOUGHT: BS BA

FACULTY ADVISOR: _____
 PHONE: _____
 MATRICULATION DATE: _____
 TASP COMPLETED: _____

PRE-HEALTH: YES NO
 AREA: _____
 DOUBLE MAJOR: _____
 TEACHER CERT.: 2nd FIELD _____

I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)					III. BIOLOGY CORE BS 32 Hrs (10 LL/22 UL); BA 29 Hrs (10 LL/19UL)				
Rhetoric (Composition II)	RHET 1302	3			Intro to Modern Biology I & wkshp	BIOL 2311,2111	4		
Advanced Writing (Communication Elective) ¹	BIOL 4337, 4352	3			Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4		
US & Texas History ²		3			Intro Biology Lab	BIOL 2281	2		
US & Texas History ²		3			Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4		
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3			Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4		
Political Institutions in US & TX	GOVT 2302	3			Biochemistry I & wkshp	BIOL 3361, 3161	4		
Visual & Performing Arts ²		3			Biochemistry II & wkshp	BIOL 3362, 3162	4		
Humanities ²		3			Biochemistry Lab	BIOL 3380	3		
Social & Behavioral Sciences ²		3			Cell Biology Lab (BS only)	BIOL 4380	3		
II. MATH & SCIENCE BS 32Hrs (26 LL, 6 UL); BA 30-32 Hrs ³ (27-29 LL, 3UL)					IV. BIOLOGY ELECTIVES BS 12 Hrs (All UL); BA 9 Hrs (All UL)				
Calculus I ³	MATH 2417	4				BIOL	3		
Calculus II ³	MATH 2419	4				BIOL	3		
General Chemistry I	CHEM 1311	3				BIOL	3		
General Chemistry Lab I	CHEM 1111	1			(BS only)	BIOL	3		
General Chemistry II	CHEM 1312	3			V. MOLECULAR & CELL BIOLOGY MINOR 12 Hrs ⁶ (All UL)				
General Chemistry Lab II	CHEM 1112	1				BIOL	3		
Intro Organic Chemistry I ⁴	CHEM 2323	3				BIOL	3		
Intro Organic Chemistry Lab I	CHEM 2123	1				BIOL	3		
Intro Organic Chemistry II ⁴	CHEM 2325	3				BIOL	3		
Intro Organic Chemistry Lab II	CHEM 2125	1			VI. FREE ELECTIVES BS 9 Hrs (LL or UL); BA 15-17 Hrs (At least 5 UL) ⁷				
Physics for BioSciences I ⁵ (Mech. & Heat)	PHYS 3341	3			Oral Communications ⁸	RHET 1101	1		
Physics Lab I ⁵	PHYS 2125	1					3		
Physics for BioSciences II ⁵ (Electro. & Waves)	PHYS 3342	3					3		
Physics Lab II ⁵	PHYS 2126	1					2		
						(BA only)	3		
						(BA only)	3		
						(BA only)	2		

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminal Papers in Bio, BIOL 4390 Sr. Research & Advanced Writing, or BIOL 4399 Sr. Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives.

² See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³ For the BA, the math requirement may be satisfied with 6 hrs of Applied Calculus I (MATH 1325) & Statistics for Life Sciences (STAT 3332).

⁴ Satisfies the Advanced Elective requirement.

⁵ For the BA, the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102).

⁶ Organic Chemistry I and II are included to satisfy the 18 hour **Minor requirement**

⁷ These UL hours are to meet the 51 UL hour graduation requirement. May be taken at LL if compensatory UL hours are taken among core curriculum requirements.

⁸ Required only for freshmen. Transfer students are not required to take this course

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 12^{4*} (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 122 hours.

Degree Plan Approved: _____

Undergraduate Advisor Date

Final Degree Plan Approved: _____

(For Graduation)

College Master Date

2006-2008 UTD DEGREE PLAN - BIOLOGY MAJOR with Minor in Neurobiology

rev.4/07/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DOUBLE MAJOR: _____

DEGREE SOUGHT: BS BA

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD _____

I. CORE CURRICULUM 27 Hrs (24 LL, lower level; 3 UL, upper level)					III. BIOLOGY CORE BS 32 Hrs (10 LL/22 UL); BA 29 Hrs (10 LL/19UL)				
Rhetoric (Composition II)	RHET 1302	3			Intro to Modern Biology I & wkshp	BIOL 2311,2111	4		
Advanced Writing (Communication Elective) ¹	BIOL	3			Intro to Modern Biology II & wkshp	BIOL 2312, 2111	4		
US & Texas History ²		3			Intro Biology Lab	BIOL 2281	2		
US & Texas History ²		3			Classical & Molec Genetics & wkshp	BIOL 3301, 310	4		
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3			Molecular & Cell Biology & wkshp	BIOL 3302, 310	4		
Political Institutions in US & TX	GOVT 2302	3			Biochemistry I & wkshp	BIOL 3361, 316	4		
Visual & Performing Arts ²		3			Biochemistry II & wkshp	BIOL 3362, 316	4		
Humanities ²		3			Biochemistry Lab	BIOL 3380	3		
Social & Behavioral Sciences ²		3			Cell Biology Lab (BS only)	BIOL 4380	3		
II. MATH & SCIENCE BS 32Hrs (26 LL, 6 UL); BA 30-32 Hrs ³ (27-29 LL, 3UL)					IV. BIOLOGY ELECTIVES BS 12 Hrs (All UL); BA 9 Hrs (All UL)				
Calculus I ³	MATH 2417	4				BIOL	3		
Calculus II ³	MATH 2419	4				BIOL	3		
General Chemistry I	CHEM 1311	3				BIOL	3		
General Chemistry Lab I	CHEM 1111	1				(BS only) BIOL	3		
General Chemistry II	CHEM 1312	3			V. NEUROBIOLOGY MINOR 12 Hrs ⁶ (All UL)				
General Chemistry Lab II	CHEM 1112	1			Biology of the Brain ⁷	BIOL 3371	3		
Intro Organic Chemistry I ⁴	CHEM 2323	3			Neuroscience Laboratory Methods	NSC 4353	3		
Intro Organic Chemistry Lab I	CHEM 2123	1			Integrative Neuroscience	NSC 4354	3		
Intro Organic Chemistry II ⁴	CHEM 2325	3			Developmental Neurobiology	BIOL 4370	3		
Intro Organic Chemistry Lab II	CHEM 2125	1			VI. FREE ELECTIVES BS 9 Hrs (LL or UL); BA 15-17 Hrs (At least 5 UL) ⁸				
Physics for BioSciences I ⁵ (Mech. & Heat)	PHYS 3341	3			Oral Communications ⁹	RHET 1101	1		
Physics Lab I ⁵	PHYS 2125	1					3		
Physics for BioSciences II ⁵ (Electro. & Waves)	PHYS 3342	3					3		
Physics Lab II ⁵	PHYS 2126	1					2		
						(BA only)	3		
						(BA only)	3		
						(BA only)	2		

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminar Papers in Bio, BIOL 4390 Sr. Research & Advanced Writing, or BIOL 4399 Sr. Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives.

² See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³ For the BA, the math requirement may be satisfied with 6 hrs of Applied Calculus I (MATH 1325) & Statistics for Life Sciences (STAT 3332).

⁴ Satisfies the Advanced Elective requirement.

⁵ For the BA, the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102).

⁶ Organic Chemistry I and II are included to satisfy the 18 hour **Minor requirement**.

⁷ May be satisfied with NSC 4352 Cellular Neuroscience.

⁸ Required only for freshmen.

⁹ These UL hours are to meet the 51 UL hour graduation requirement. May be taken at LL if compensatory UL (For Graduation) hours are taken among core curriculum requirements.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 12[#] (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 122 hours.

Degree Plan Approved: _____

Undergraduate Advisor Date

Final Degree Plan Approved: _____

College Master Date

2006-2008 UTD DEGREE PLAN - MOLECULAR BIOLOGY and BUSINESS ADMINISTRATION DOUBLE MAJOR

rev.4/07/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DOUBLE MAJOR: _____

DEGREE SOUGHT: BS

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD

0. FRESHMAN REQUIREMENT 1 Hr				III. BIOLOGY REQUIREMENTS 36 Hrs (10 LL/26 UL)			
Oral Communication/Critical Thinking ¹	RHET 1101	1		Intro to Modern Biology I & wkshp	BIOL 2311,2111	4	
I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)				Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4	
Rhetoric (Composition II)	RHET 1302	3		Intro Biology Lab	BIOL 2281	2	
Advanced Writing (Communication Elective) ²	BA 4305	3		Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4	
US & Texas History ³		3		Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4	
US & Texas History ³		3		Biochemistry I & wkshp	BIOL 3361, 3161	4	
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3		Biochemistry II & wkshp	BIOL 3362, 3162	4	
Political Institutions in US & TX	GOVT 2302	3		Biochemistry Lab	BIOL 3380	3	
Visual & Performing Arts ³		3		Biophysical Chemistry	BIOL 4461	4	
Humanities ³		3		Cell Biology Lab ⁵	BIOL 4380	3	
Macroeconomics (Social & Behav. Sciences)	ECO 2301	3		IV. BUSINESS REQUIREMENTS 15 Hrs (All LL)			
II. MATH & SCIENCE 32 Hrs (26 LL, 6 UL)				Microeconomics	ECO 2302	3	
Calculus I	MATH 2417	4		Matrices, Vectors, & Linear Program	MATH 2333	3	
Calculus II	MATH 2419	4		Business and Public Law	BA 2301	3	
General Chemistry I	CHEM 1311	3		Intro to Financial Accounting	AIM 2301	3	
General Chemistry Lab I	CHEM 1111	1		Intro to Cost Management	AIM 2302	3	
General Chemistry II	CHEM 1312	3		V. MANAGEMENT REQUIREMENTS 21 Hrs (All UL)			
General Chemistry Lab II	CHEM 1112	1		Probability and Statistics	STAT 3332 or 3360	3	
Intro Organic Chemistry I ⁴	CHEM 2323	3		Business Finance	BA 3341	3	
Intro Organic Chemistry Lab I	CHEM 2123	1		Management Information Systems	BA 3351	3	
Intro Organic Chemistry II ⁴	CHEM 2325	3		Production Management	BA 3352	3	
Intro Organic Chemistry Lab II	CHEM 2125	1		Organization Behavior	BA 3361	3	
Physics for BioSciences I (Mech. & Heat)	PHYS 3341	3		Marketing Management	BA 3365	3	
Physics Lab I	PHYS 2125	1		International Business	BA 4371	3	
Physics for BioSciences II(Electro. & Waves)	PHYS 3342	3		VI. MANAGEMENT ELECTIVES ⁶ 9 Hrs (All UL)			
Physics Lab II	PHYS 2126	1					

¹ Required only for freshmen.

² BA 4305 Social & Political Environment of Business satisfies the **Advanced Writing Requirement** for this double major.

³ See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

⁴ Satisfies the **Advanced Elective requirement**.

⁵ May be substituted with research hrs. (BIOL 3V96, BIOL 4390, or BIOL 4399) with permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.

⁶ To be selected from AIM and BA courses.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 140*

*Transfer students w/8 hours in Biology I & II w/lab & no RHET 1101 may graduate w/137 hours.

Degree Plan Approved: _____

Undergraduate Advisor _____ Date _____

Final Degree Plan Approved: _____

(For Graduation)

College Master _____ Date _____

2006-2008 UTD DEGREE PLAN - MOLECULAR BIOLOGY and CRIME & JUSTICE STUDIES DOUBLE MAJOR

rev.4/12/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DEGREE SOUGHT: BS BA

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD

I. CORE CURRICULUM 27 Hrs (24 LL ,lower level/3 UL ,upper level)				III. BIOLOGY 39 Hrs (10 LL/29 UL)			
Rhetoric (Composition II)	RHET 1302	3		Intro to Modern Biology I & wkshp	BIOL 2311,2111	4	
Advanced Writing (Communication Elective) ¹		3		Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4	
US & Texas History ²		3		Intro Biology Lab	BIOL 2281	2	
US & Texas History ²		3		Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4	
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3		Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4	
Political Institutions in US & TX	GOVT 2302	3		Forensic Biology	BIOL 3318	3	
Visual & Performing Arts ²		3		Biochemistry I & wkshp	BIOL 3361, 3161	4	
Humanities ²		3		Biochemistry II & wkshp	BIOL 3362, 3162	4	
Social & Behav Sci: Macro- or Microeconomics	ECO 2301/2302	3		Biochemistry Lab	BIOL 3380	3	
II. MATH & SCIENCE BS 35-36 Hrs (26-30 LL, 6-10 UL)				IV. BIOLOGICAL CHEMISTRY 10 Hrs (All UL)			
Calculus I	MATH 2417	4		Biophysical Chemistry	BIOL 4461	4	
Calculus II	MATH 2419	4		Cell Biology Lab ⁴	BIOL 4380	3	
Multivariable Calculus	MATH 2451	4		V. CRIME & JUSTICE STUDIES 33 Hrs (All UL)			
or Statistics for Life Sciences	STAT 3332	3		Crime & Civil Liberties	CJS 3300	3	
or Statistics for Life Sciences	OCS 3305/3105	4		Theories of Justice ⁵	CJS 3301	3	
General Chemistry I	CHEM 1311	3		Advanced Criminology	CJS 3302	3	
General Chemistry Lab I	CHEM 1111	1		Advanced Criminal Justice	CJS 3303	3	
General Chemistry II	CHEM 1312	3		Research Methods in CJS Studies	CJS 3304	3	
General Chemistry Lab II	CHEM 1112	1		Comparative Justice Systems	CJS 3319	3	
Intro Organic Chemistry I ³	CHEM 2323	3		Social Control & Criminal Sanctions	CJS 4306	3	
Intro Organic Chemistry Lab I	CHEM 2123	1		Senior Seminar	CJS 4321	3	
Intro Organic Chemistry II ³	CHEM 2325	3		Major & Related Elective ⁶		3	
Intro Organic Chemistry Lab II	CHEM 2125	1		Major & Related Elective ⁶		3	
Physics for BioSciences I (Mech. & Heat)	PHYS 3341	3		VI. OTHER 1Hr (LL)			
Physics Lab I	PHYS 2125	1		Oral Communications ⁷	RHET 1101	1	
Physics for BioSciences II(Electro. & Waves)	PHYS 3342	3					
Physics Lab II	PHYS 2126	1					

¹The **Advanced Writing requirement** may be satisfied by BIOL 4337 Seminal Papers in Bio, BIOL 4390 Sr Research & Advanced Writing, BIOL 4399 Sr Honors Research & Thesis, or CJS 3300 Crime and Civil Liberties. See advisor for alternative approved courses.

²See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³Satisfies the **Advanced Elective requirement**.

⁴May be substituted with research hrs. (BIOL 3V96, 4390, or BIOL 4399) with permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.

⁵Or another course with distributive justice emphasis, such as SOC 4361 or ECO 4320.

⁶See advisor for list.

⁷Required only for freshmen.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 134-135*

*Transfer students w/8 hours in Biology I & II w/lab & no RHET 1101 may graduate w/131-132 hours.

Degree Plan Approved: _____

Undergraduate Advisor Date

Final Degree Plan Approved: _____

(For Graduation) _____

College Master Date

2006-20086 UTD DEGREE PLAN - MOLECULAR BIOLOGY MAJOR

rev.4/07/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DOUBLE MAJOR: _____

DEGREE SOUGHT: BS

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD

I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)				III. MOLECULAR BIOLOGY CORE 36 Hrs (10 LL/26 UL)			
Rhetoric (Composition II)	RHET 1302	3		Intro to Modern Biology I & wkshp	BIOL 2311,2111	4	
Advanced Writing (Communication Elective) ¹	BIOL	3		Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4	
US & Texas History ²		3		Intro Biology Lab	BIOL 2281	2	
US & Texas History ²		3		Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4	
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3		Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4	
Political Institutions in US & TX	GOVT 2302	3		Biochemistry I & wkshp	BIOL 3361, 3161	4	
Visual & Performing Arts ²		3		Biochemistry II & wkshp	BIOL 3362, 3162	4	
Humanities ²		3		Biochemistry Lab	BIOL 3380	3	
Social & Behavioral Sciences ²		3		Biophysical Chemistry	BIOL 4461	4	
II. MATH & SCIENCE 35-36 Hrs (26-30 LL, 6-9 UL)				Cell Biology Lab	BIOL 4380	3	
Calculus I	MATH 2417	4		or Undergrad Research in Mol Bio ⁴	BIOL 3V96	3	
Calculus II	MATH 2419	4		or Sr Research & Advanced Writing ⁴	BIOL 4390	3	
Multivariable Calculus	MATH 2451	4		or Sr Honors Research & Thesis ⁴	BIOL 4399	3	
or Statistics for Life Sciences	STAT 3332	3		IV. MOL BIOLOGY-RELATED BIOL & CHEM ELECTIVES 12 Hrs (All UL)			
General Chemistry I	CHEM 1311	3				3	
General Chemistry Lab I	CHEM 1111	1				3	
General Chemistry II	CHEM 1312	3				3	
General Chemistry Lab II	CHEM 1112	1				3	
Intro Organic Chemistry I ³	CHEM 2323	3		V. FREE ELECTIVES 18-19 Hrs (At least 1-4 UL) ⁵			
Intro Organic Chemistry Lab I	CHEM 2123	1		Oral Communications ⁶	RHET 1101	1	
Intro Organic Chemistry II ³	CHEM 2325	3				3	
Intro Organic Chemistry Lab II	CHEM 2125	1				3	
Physics for BioSciences I (Mech. & Heat)	PHYS 3341	3				3	
Physics Lab I	PHYS 2125	1				3	
Physics for BioSciences II(Electro. & Waves)	PHYS 3342	3				3	
Physics Lab II	PHYS 2126	1				3-4	

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminal Papers in Bio, BIOL 4390 Sr Research & Advanced Writing, or BIOL 4399 Sr Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives.

²See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³Satisfies the Advanced Elective requirement.

⁴These substitutes for BIOL 4380 require permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.

⁵These UL hours are to meet the 51 UL hour graduation requirement. May be taken at LL if compensatory UL hours are taken among core curriculum requirements.

⁶ Required only for freshmen.

TRANSFERRED HOURS: _____

LL _____ UL _____

UTD HOURS: _____

LL _____ UL _____

MINIMUM SEMESTER HOURS: 129* (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 127 hours.

Degree Plan Approved: _____

Undergraduate Advisor Date

Final Degree Plan Approved: _____
(For Graduation)

College Master Date

2006-2008 UTD DEGREE PLAN - MOLECULAR BIOLOGY MAJOR with Minor in Biomolecular Structure

rev.4/07/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DOUBLE MAJOR: _____

DEGREE SOUGHT: BS

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD

I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)				III. MOLECULAR BIOLOGY CORE 36 Hrs (10 LL/26 UL)			
Rhetoric (Composition II)	RHET 1302	3		Intro to Modern Biology I & wkshp	BIOL 2311,2111	4	
Advanced Writing (Communication Elective) ¹	BIOL	3		Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4	
US & Texas History ²		3		Intro Biology Lab	BIOL 2281	2	
US & Texas History ²		3		Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4	
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3		Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4	
Political Institutions in US & TX	GOVT 2302	3		Biochemistry I & wkshp	BIOL 3361, 3161	4	
Visual & Performing Arts ²		3		Biochemistry II & wkshp	BIOL 3362, 3162	4	
Humanities ²		3		Biochemistry Lab	BIOL 3380	3	
Social & Behavioral Sciences ²		3		Biophysical Chemistry	BIOL 4461	4	
II. MATH & SCIENCE 35-36 Hrs (26-30 LL, 6-9 UL)				Cell Biology Lab			
Calculus I	MATH 2417	4		or Undergrad Research in Mol Bio ⁴	BIOL 3V96	3	
Calculus II	MATH 2419	4		or Sr Research & Advanced Writing ⁴	BIOL 4390	3	
Multivariable Calculus	MATH 2451	4		or Sr Honors Research & Thesis ⁴	BIOL 4399	3	
or Statistics for Life Sciences	STAT 3332	3		IV. MOL BIOLOGY-RELATED BIOL & CHEM ELECTIVES 12 Hrs (All UL)			
General Chemistry I	CHEM 1311	3				3	
General Chemistry Lab I	CHEM 1111	1				3	
General Chemistry II	CHEM 1312	3				3	
General Chemistry Lab II	CHEM 1112	1				3	
Intro Organic Chemistry I ³	CHEM 2323	3		V. BIOMOLECULAR STRUCTURE MINOR 12 Hrs ⁵ (All UL)			
Intro Organic Chemistry Lab I	CHEM 2123	1		Protein and Nucleic Acid Structure	BIOL 3336	3	
Intro Organic Chemistry II ³	CHEM 2325	3		Biomolecular Modeling	BIOL 4261	2	
Intro Organic Chemistry Lab II	CHEM 2125	1		BIOL, CHEM, CS, EE, MATH, or PHYS approved UL elect		4	
Physics for BioSciences I (Mech. & Heat)	PHYS 3341	3		BIOL, CHEM, CS, EE, MATH, or PHYS approved UL elect		3	
Physics Lab I	PHYS 2125	1		VI. FREE ELECTIVES 6-7 Hrs			
Physics for BioSciences II(Electro. & Waves)	PHYS 3342	3		Oral Communications ⁶	RHET 1101	1	
Physics Lab II	PHYS 2126	1				3	
						2-3	

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminar Papers in Bio, BIOL 4390 Sr Research & Advanced Writing, or BIOL 4399 Sr Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives.

² See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³ Satisfies the Advanced Elective requirement.

⁴ These substitutes for BIOL 4380 require permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.

⁵ Organic Chemistry I and II are included to satisfy the 18 hour **Minor requirement**.

⁶ Required only for freshmen.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 129* (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 127 hours.

Degree Plan Approved: _____

Undergraduate Advisor Date

Final Degree Plan Approved: _____
(For Graduation)

College Master Date

2006-2008 UTD DEGREE PLAN - MOLECULAR BIOLOGY MAJOR with Minor in Microbiology

rev.4/07/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DOUBLE MAJOR: _____

DEGREE SOUGHT: BS

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD

I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)				III. MOLECULAR BIOLOGY CORE 36 Hrs (10 LL/26 UL)			
Rhetoric (Composition II)	RHET 1302	3		Intro to Modern Biology I & wkshp	BIOL 2311,2111	4	
Advanced Writing (Communication Elective) ¹	BIOL	3		Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4	
US & Texas History ²		3		Intro Biology Lab	BIOL 2281	2	
US & Texas History ²		3		Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4	
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3		Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4	
Political Institutions in US & TX	GOVT 2302	3		Biochemistry I & wkshp	BIOL 3361, 3161	4	
Visual & Performing Arts ²		3		Biochemistry II & wkshp	BIOL 3362, 3162	4	
Humanities ²		3		Biochemistry Lab	BIOL 3380	3	
Social & Behavioral Sciences ²		3		Biophysical Chemistry	BIOL 4461	4	
II. MATH & SCIENCE 35-36 Hrs (26-30 LL, 6-9 UL)				Cell Biology Lab	BIOL 4380	3	
Calculus I	MATH 2417	4		or Undergrad Research in Mol Bio ⁴	BIOL 3V96	3	
Calculus II	MATH 2419	4		or Sr Research & Advanced Writing ⁴	BIOL 4390	3	
Multivariable Calculus	MATH 2451	4		or Sr Honors Research & Thesis ⁴	BIOL 4399	3	
or Statistics for Life Sciences	STAT 3332	3		IV. MOL BIOLOGY-RELATED BIOL & CHEM ELECTIVES 12 Hrs (All UL)			
General Chemistry I	CHEM 1311	3				3	
General Chemistry Lab I	CHEM 1111	1				3	
General Chemistry II	CHEM 1312	3				3	
General Chemistry Lab II	CHEM 1112	1				3	
Intro Organic Chemistry I ³	CHEM 2323	3		V. MICROBIOLOGY MINOR 12-17 Hrs ⁵ (All UL)			
Intro Organic Chemistry Lab I	CHEM 2123	1		General Microbiology with Lab ⁶	BIOL 3V20	5	
Intro Organic Chemistry II ³	CHEM 2325	3		Microbial Physiology ⁶	BIOL 3335	3	
Intro Organic Chemistry Lab II	CHEM 2125	1		Medical Microbiology	BIOL 4340	3	
Physics for BioSciences I (Mech. & Heat)	PHYS 3341	3		or Parasites & Symbionts	BIOL 4316	3	
Physics Lab I	PHYS 2125	1		Immunobiology	BIOL 4345	3	
Physics for BioSciences II(Electro. & Waves)	PHYS 3342	3		UL Microbiology elective	BIOL	3	
Physics Lab II	PHYS 2126	1		VI. FREE ELECTIVES 1-7 Hrs			
				Oral Communications ⁶	RHET 1101	1	
						3	
						2-3	

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminal Papers in Bio, BIOL 4390 Sr Research & Advanced Writing, or BIOL 4399 Sr Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives

²See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³Satisfies the Advanced Elective requirement.

⁴These substitutes for BIOL 4380 require permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.

⁵General Microbiology Lab (2 hrs) and Microbial Physiology may be used to satisfy the Biochemistry II and Cell Biology Lab requirements of the major and replaced with Organic Chemistry hrs for the minor.

⁶ Required only for freshmen.

TRANSFERRED HOURS: LL _____ UL _____

UTD HOURS: LL _____ UL _____

MINIMUM SEMESTER HOURS: 129* (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 127 hours.

Degree Plan Approved: _____
Undergraduate Advisor Date

Final Degree Plan Approved: _____
(For Graduation)

2006-2008 UTD DEGREE PLAN - MOLECULAR BIOLOGY MAJOR with Minor in Neurobiology

rev.4/07/06

NAME: _____

FACULTY ADVISOR: _____

PRE-HEALTH: YES NO

SS or ID #: _____

PHONE: _____

AREA: _____

PHONE: _____

MATRICULATION DATE: _____

DOUBLE MAJOR: _____

DEGREE SOUGHT: BS

TASP COMPLETED: _____

TEACHER CERT.: 2nd FIELD

I. CORE CURRICULUM 27 Hrs (24 LL ,lower level; 3 UL ,upper level)					III. MOLECULAR BIOLOGY CORE 36 Hrs (10 LL/26 UL)				
Rhetoric (Composition II)	RHET 1302	3			Intro to Modern Biology I & wkshp	BIOL 2311,2111	4		
Advanced Writing (Communication Elective) ¹	BIOL	3			Intro to Modern Biology II & wkshp	BIOL 2312, 2112	4		
US & Texas History ²		3			Intro Biology Lab	BIOL 2281	2		
US & Texas History ²		3			Classical & Molec Genetics & wkshp	BIOL 3301, 3101	4		
Constitutional Fd & Pol Behav US & TX	GOVT 2301	3			Molecular & Cell Biology & wkshp	BIOL 3302, 3102	4		
Political Institutions in US & TX	GOVT 2302	3			Biochemistry I & wkshp	BIOL 3361, 3161	4		
Visual & Performing Arts ²		3			Biochemistry II & wkshp	BIOL 3362, 3162	4		
Humanities ²		3			Biochemistry Lab	BIOL 3380	3		
Social & Behavioral Sciences ²		3			Biophysical Chemistry	BIOL 4461	4		
II. MATH & SCIENCE 35-36 Hrs (26-30 LL, 6-9 UL)					Cell Biology Lab	BIOL 4380	3		
Calculus I	MATH 2417	4			or Undergrad Research in Mol Bio ⁴	BIOL 3V96	3		
Calculus II	MATH 2419	4			or Sr Research & Advanced Writing ⁴	BIOL 4390	3		
Multivariable Calculus	MATH 2451	4			or Sr Honors Research & Thesis ⁴	BIOL 4399	3		
or Statistics for Life Sciences	STAT 3332	3			IV. MOL BIOLOGY-RELATED BIOL & CHEM ELECTIVES 12 Hrs (All UL)				
General Chemistry I	CHEM 1311	3					3		
General Chemistry Lab I	CHEM 1111	1					3		
General Chemistry II	CHEM 1312	3					3		
General Chemistry Lab II	CHEM 1112	1					3		
Intro Organic Chemistry I ³	CHEM 2323	3			V. NEUROBIOLOGY MINOR 12 Hrs ⁵ (All UL)				
Intro Organic Chemistry Lab I	CHEM 2123	1			Biology of the Brain ⁶	BIOL 3371	3		
Intro Organic Chemistry II ³	CHEM 2325	3			Neuroscience Laboratory Methods	NSC 4353	3		
Intro Organic Chemistry Lab II	CHEM 2125	1			Integrative Neuroscience	NSC 4354	3		
Physics for BioSciences I (Mech. & Heat)	PHYS 3341	3			Developmental Neurobiology	BIOL 4370	3		
Physics Lab I	PHYS 2125	1			VI. FREE ELECTIVES 6-7 Hrs				
Physics for BioSciences II(Electro. & Waves)	PHYS 3342	3			Oral Communications ⁷	RHET 1101	1		
Physics Lab II	PHYS 2126	1					3		
							2-3		

¹ It is recommended that students take an UL advanced writing elective in the major (i.e., BIOL 4337 Seminar Papers in Bio, BIOL 4390 Sr Research & Advanced Writing, or BIOL 4399 Sr Honors Research & Thesis) to satisfy this requirement. See advisor for alternatives.

² See advisor for a list of approved core courses, which may be taken at the lower or upper level. UL is recommended for transfer students in order to meet the 51 UL credit hour graduation requirement.

³ Satisfies the Advanced Elective requirement.

⁴ These substitutes for BIOL 4380 require permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.

⁵ Organic Chemistry I and II are included to satisfy the 18 hour **Minor requirement**.

⁶ May be satisfied with NSC 4352 Cellular Neuroscience.

⁷ Required only for freshmen.

TRANSFERRED HOURS: _____

LL _____ UL _____

UTD HOURS: _____

LL _____ UL _____

MINIMUM SEMESTER HOURS: 129* (51 Hours Required at UL)

*Transfer students w/8 hours in Biology I & II w/lab may graduate w/a minimum of 127 hours.

Degree Plan Approved: _____

Undergraduate Advisor _____ Date _____

Final Degree Plan Approved: _____

(For Graduation)

College Master _____ Date _____

V. BIOLOGY COURSES

A. Core Courses Undergraduate

BIOL 2311 INTRODUCTION TO MODERN BIOLOGY I & Workshop BIOL 2111

(3 semester hours) Presentation of some of the fundamental concepts of modern biology, with an emphasis on the molecular and cellular basis of biological phenomena. Topics include the chemistry and metabolism of biological molecules, elementary classical and molecular genetics, and selected aspects of developmental biology, physiology (including hormone action), immunity, and neurophysiology. Prerequisites: General Chemistry I and II. Corequisite: concurrent enrollment in **BIOL 2111**. (3-0) S

BIOL 2312 INTRO TO MODERN BIOLOGY II & Workshop BIOL 2112

(3 semester hours) Continuation of **BIOL 2301**. The overall emphasis will be on organ physiology and regulatory mechanisms involving individual organs and organ systems. Factors considered will be organ development and structure, evolutionary processes and biological diversity, and their effects on physiological mechanisms regulating the internal environment. Corequisite: concurrent enrollment in **BIOL 2112**. (3-0) S

BIOL 2281 INTRODUCTORY BIOLOGY LABORATORY

(2 semester hours) Introductory lectures discuss the theoretical and historical aspects of the experiments carried out in the laboratory. Laboratory experiments introduce the student to bioinformatics, basic cellular biology, and structure and function of proteins and nucleic acids. Computer exercises in bioinformatics involve multiple alignment analyses, BLAST and literature searches, and construction of phylogenetic trees. Laboratory experiments include microscopy, microbial techniques, yeast genetics, and the electrophoretic behavior of normal and mutant proteins. DNA related experiments include isolation (nuclear and mtDNA), amplification, restriction digests, electrophoresis, plasmid mapping, and transformations. Students present posters of their long-term investigations at the end of the semester. Prerequisite: **BIOL 2311** (also see prerequisites for **BIOL 2311**). ([0-1]-[1-2]) S

BIOL 3301 CLASSICAL AND MOLECULAR GENETICS & Workshop BIOL 3101

(3 semester hours) The phenomenon of heredity, its cytological and molecular basis; gene expression and transfer of genetic information, with major focus on bacterial and model eukaryotic systems; genetic recombination and chromosome mapping; tetrad analysis; mutations and mutagenesis; genetic interactions; application of recombinant DNA techniques to genetic analysis. Prerequisites: **BIOL 2311** and **Organic Chemistry I**. Corequisite: concurrent enrollment in **BIOL 3101**. (3-0) S

BIOL 3302 EUKARYOTIC MOLECULAR & CELL BIOLOGY & Workshop BIOL 3102

(3 semester hours) Structural organization of eukaryotic cells; regulation of cellular activities; membranes and transport; cellular replication; examples of cell specialization such as blood (immunoglobulin) and muscle cells. Prerequisites: **BIOL 3301** and **BIOL 3361**. Corequisite: concurrent enrollment in **BIOL 3102**. (3-0) S

BIOL 3361 BIOCHEMISTRY I & Workshop BIOL 3161

(3 semester hours) Structures and chemical properties of amino acids; protein purification and characterization; protein structure and thermodynamics of polypeptide chain folding; catalytic mechanisms, kinetics and regulation of enzymes; energetics of biochemical reactions; generation and storage of metabolic energy associated with carbohydrates; oxidative phosphorylation and electron transport mechanisms; photosynthesis. Prerequisites: **Organic Chemistry I and II**.

Corequisite: concurrent enrollment in **BIOL 3161**. (3-0) S

BIOL 3362 BIOCHEM II & Workshop BIOL 3162

(3 semester hours) Breakdown and synthesis of lipids; membrane structure and function; nitrogen metabolism and fixation; nucleotide metabolism; structure and properties of nucleic acids; sequencing and genetic engineering; replication, transcription, and translation; chromosome structure; hormone action; biochemical basis of certain pathological processes. Prerequisite: **BIOL/CHEM 3361** or its equivalent, or consent of instructor. Corequisite: concurrent enrollment in **BIOL 3162**. (3-0) Y

BIOL 3380 BIOCHEMISTRY LAB

(3 semester hours) Current techniques in the purification and characterization of enzymes to demonstrate fundamental principles that are utilized in modern biochemistry and molecular biology research laboratories. Practical skills taught include micropipetting, basic solution preparation, conducting pH measurements, isolating crude enzyme extracts, and performing standard activity assays. Advanced experiments with Green Fluorescent Protein and Lactate Dehydrogenase include Ni⁺⁺-NTA affinity chromatography, ion chromatography, protein detection using Bradford, Lowry, and spectrophotometric assays, SDS-PAGE separation, Western Blot analysis, and enzyme kinetics. Prerequisite: **BIOL 2281**. Prerequisite or co requisite: **BIOL/CHEM 3361** (1-2) S

BIOL 4380 CELL & MOLECULAR BIOLOGY LAB (3 semester hours)

Current techniques that are utilized in a modern Molecular Biology research laboratory. Practical skills taught include monitoring bacterial growth, phenotype testing, plasmid isolation, restriction digest analysis, DNA cloning, and DNA fingerprinting using the polymerase chain reaction cultures, sub-cellular fractionation using differential

centrifugation, basic immunological techniques, and chemical mutagen testing. Prerequisite: **BIOL 3380**. Pre- or co-requisite: **BIOL 3302**. (1-2) S

BIOL 4461 BIOPHYSICAL CHEMISTRY

(4 semester hours) For students interested in the interface between biochemistry and structural biology. Provides an advanced treatment of the physical principles underlying modern molecular biology techniques. Topics include classical and statistical thermodynamics, biochemical kinetics, transport processes (e.g., diffusion, edimentation, viscosity), chemical bonding, and spectroscopy. Prerequisites: **MATH 2417** and **2419**; **PHYS 2325** and **2326**, **PHYS 3341** and **3342**, or equivalent; **BIOL/CHEM 3361**. (Same as **CHEM 4461**) (4-0) Y

GRADUATE

BIOL 5410 BIOCHEMISTRY OF PROTEINS AND NUCLEIC ACIDS

(4 semester hours) Chemistry and metabolism of amino acids and nucleotides; biosynthesis of nucleic acids; analysis of the structure and function of proteins and nucleic acids and of their interactions including chromatin structure. Prerequisite: **Biochemistry** or equivalent. (4-0) Y

BIOL 5420 MOLECULAR BIOLOGY

(4 semester hours) Genetic analysis of gene structure (mutations and their analysis, complementation, and recombination), gene expression (transcription, RNA processing, translation), and the regulation of gene expression in selected model systems (viral, prokaryotic, organellar, eukaryotic); principles of genetic engineering (cloning and recombinant DNA technology), (4-0) Y

BIOL 5430 MACROMOLECULAR PHYSICAL CHEMISTRY

(4 semester hours) Structures and properties of macromolecules, interactions with electromagnetic radiation, thermodynamics of macromolecular solutions, and transport processes. Calculus and general physics required. (4-0) Y

BIOL 5440 CELL BIOLOGY

(4 semester hours) Molecular architecture and function of cells and subcellular organelles; structure and function of membranes; hormone and neurotransmitter action; growth regulation and oncogenes; immune response; eukaryotic gene expression. Prerequisites: **BIOL 5410** and **5420**, or the equivalent, or permission of the instructor. (4-0) Y

BIOL 5V50 METHODS IN MOLECULAR & CELL BIOLOGY I

(3-6 semester hours) Laboratory instruction in biological, biophysical, and biochemical techniques. Supplemental lectures and demonstrations. (1-[4-10]) Y

BIOL 5V51 METHODS IN MOLECULAR & CELL BIOLOGY II

(3-6 semester hours) Laboratory instruction in techniques in molecular and cell biology. Supplemental lectures and demonstrations. (1-[4-10]) Y

BIOL 5V52 METHODS IN MOLECULAR & CELL BIOLOGY III

(3-6 semester hours) Laboratory instruction in advanced techniques in molecular and cell biology. Supplemental lectures and demonstrations. (1-[4-10]) Y

B. ELECTIVE COURSES UNDERGRADUATE

Unless otherwise stated in the Schedule of Classes or the Undergraduate Catalog, 3000-level electives may be taken by students who have taken BIO 2311, 2312 and 2281 or their equivalents. Similarly, the minimum prerequisite for any 4000-level elective is successful completion of BIO 3301, 3302 and 3361 or their equivalents, or the written consent of the instructor.

- BIOL 1300** Body Systems with Lab
(for non-science majors)
- BIOL 1310** Basics of Biotechnology with Lab
(for non-science majors)
- BIOL 1318** Human Genetics
(for non-science majors)
- BIOL 1320** The Microbial World with Lab
(for non-science majors)
- BIOL 2V00** Topics in Biological Sciences
- BIOL 2V95** Individual Instruction in Biology
- BIOL 3V00** Topics in Biological Sciences
- BIOL 3V20** General Microbiology with Lab
- BIOL 3V40** Topics in Molecular and Cell Biology
- BIOL 3V90** Readings in Biology
- BIOL 3V91** Undergraduate Research in Biology
- BIOL 3V92** Undergraduate Research in Biochemistry
- BIOL 3V95** Readings in Molecular and Cell Biology
- BIOL 3V96** Undergraduate Research in Molecular and Cell Biology
- BIOL 3305** Evolutionary Biology
- BIOL 3318** Forensic Biology
(for non-science and Biology-CJS dual majors)
- BIOL 3321** Microbial Genetics Laboratory
- BIOL 3330** Recombinant DNA
- BIOL 3335** Microbial Physiology
- BIOL 3336** Protein and Nucleic Acid Structure
- BIOL 3350** Bio Basis Health and Disease
(for non-science majors)
- BIOL 3351** Secrets of Cells
(for non-science majors)
(for non-science majors)
- BIOL 3370** Exercise Physiology

BIOL 3371 Biology of the Brain
BIOL 3455 Anatomy and Physiology w/ Lab I
BIOL 3456 Anatomy and Physiology w/ Lab II
BIOL 4V00 Special Topics in Biology
BIOL 4V40 Special Topics in Molecular and Cell Biology

BIOL 4V51 Techniques in Medical Microbiology
BIOL 4261 Biomolecular Modeling
BIOL 4302 TA Apprenticeship
BIOL 4308 Developmental Biology
BIOL 4316 Parasites and Symbionts
BIOL 4332 RNA Structure and Catalysis
BIOL 4333 Replication, Recombination and Repair
BIOL 4336 Membrane Biology
BIOL 4337 Seminal Papers in Biology (satisfies advanced writing requirement)

BIOL 4338 Cell Signaling
BIOL 4340 Proteomics
BIOL 4341 Genomics
BIOL 4342 Regulation of Gene Expression
BIOL 4345 Immunobiology
BIOL 4350 Medical Microbiology
BIOL 4352 Medical Applications of Cell Biology
BIOL 4353 Molecular Biology of HIV/AIDS
BIOL 4354 Molecular Biology of Neurological & Hematological Diseases

BIOL 4365 Advanced Human Physiology
BIOL 4366 Molecular Biology of Cancer
BIOL 4370 Developmental Neurobiology
BIOL 4382 Advanced Molecular Biology Lab
BIOL 4390 Senior Research and Advanced Writing (satisfies advanced writing requirement)

BIOL 4399 Senior Honors Research and Thesis (satisfies advanced writing requirement)

GRADUATE

Work is offered beyond the core curriculum in four major areas that parallel four of the lecture-type core courses. Each area provides elective courses, advanced colloquia, and dissertation opportunities. Electives will usually be offered only one semester per year and in some cases only once every other year.

TOPICS IN BIOCHEMISTRY:

BIOL 5309 Special Topics
BIOL 6211 Posttranslational Regulation of Gene Expression

BIOL 6V19 Topics in Biochemistry
BIOL 7V10 Research Seminar in Biochemistry
TOPICS IN MOLECULAR BIOLOGY:

BIOL 6121, 6122, 6123, 6124, 6125 Biotechnology I, II, III, IV, V
BIOL 6220 History of Molecular Biology
BIOL 6V29 Topics in Molecular Biology
BIOL 7V20 Research Seminar in Molecular Biology

TOPICS IN BIOPHYSICS:

BIOL 6230-6430 Biopolymers
BIOL 6232-6332 Electron Microscopy
BIOL 6233-6433 Molecular Structures
BIOL 6V39 Topics in Biophysics
BIOL 7V30 Research Seminar in Biophysics

TOPICS IN CELL BIOLOGY:

BIOL 6241-6441 Eukaryotic Virology
BIOL 6V42 Membrane Biology I
BIOL 6243-6443 Membrane Biology II
BIOL 6244-6444 Somatic Cell Genetics
BIOL 6V49 Topics in Cell Biology
BIOL 7V40 Research Seminar in Cell Biology

GENERAL TOPICS IN MOLECULAR AND CELL BIOLOGY:

BIOL 6150 Current Research in Molecular and Cell Biology
BIOL 6252 Current Research in Molecular Biology
BIOL 6255 Current Research in Cell Biology
BIOL 6170 Computer Applications in Molecular and Cell Biology
BIOL 6V90 Advanced Laboratory Techniques
BIOL 6V92 Readings in Molecular and Cell Biology
BIOL 6193 Colloquium in Molecular and Cell Biology
BIOL 7450 Research Seminar in Molecular and Cell Biology
BIOL 8V01 Research in Molecular and Cell Biology
BIOL 8V98 Thesis
BIOL 8V99 Dissertation

VI. TRANSFER GUIDE FOR MOLECULAR BIOLOGY AND BIOLOGY MAJORS

A. 2002 - 2008 BACHELOR OF SCIENCE (B.S.) DEGREE

COMMUNITY/JUNIOR COLLEGE PROGRAM (FRESHMAN-SOPHOMORE LEVEL COURSES) Completion of a minimum of

54 Sem. Hrs. (excluding non-transferable courses) is required for admission to U.T. Dallas as *junior*.

U.T. Dallas **Collin Co. Com. Col.** **N. Central TX Col.** **Dallas Co. Com. Col.** **Grayson Co. Col.** **Tarrant Co. Jr. Col.**

PREREQUISITES FOR MAJOR (43 sem. Hrs.)

Gen. Biology I,II (BIOL 2311,2312,2281)	BIOL 1406,1407	BIOL 1411,1413	BIOL 1406,1407	BIOL 1306/1106 1307/1107	BIO 1406,1407
Gen. Biology I,II Workshop (2111,2112)	NOT REQUIRED FOR TRANSFER STUDENTS				
Gen. Chemistry I,II (CHEM 1311,1111,1312,1112)	CHEM 1411,1412	CHEM 1411,1412	CHEM 1411,1412	CHEM 1311/1111 1312/1112	CHM 1411,1412
Gen. Org. Chem. I,II (CHEM 2323/2123,2325/2125)	CHEM 2423,2425	CHEM 2423,2425	CHEM 2423,2425	CHEM 2323/2123 2325/2125	CHM 2423,2425
Calculus I,II (MATH 2417, 2419)	MATH 2417,2419	MATH 2413,2414 2415*	MATH 2513,2414 2415*	MATH 2413,2414 2415*	MTH 2513,2414 2415*
Gen. Physics I,II (PHYS 3341/2125,3342/2126)	PHYS 2425,2426†	PHYS 2425,2426†	PHYS 2425,2426†	PHYS 2425,2426†	PHY 2425,2426†

GENERAL EDUCATION CORE REQUIREMENTS (28 sem. Hrs.)

American History† † (HST 1301,1302)	HIST 1301,1302	HIST 1301,1302	HIST 1301,1302	HIST 1301,1302	HST 1301,1302
U.S./Texas Govt. (GOVT 2301,2302)	GOVT 2301,2302	GOVT 2301,2302	GOVT 2301,2302	GOVT 2301,2302	GOV 2301,2302
Rhetoric/Comp.II (RHET 1302)	ENGL 1302	ENGL 1302	ENGL 1302	ENGL 1302	ENG 1302
Exploration of the Arts† † (A P 1301)	ARTS 1301	ARTS 1301	ARTS 1301	ARTS 1301	ARTS 1301
Exploration of the Humanities† † (HUMA 1301)	HUMA 1301	HUMA 1371	HUMA 1301**	HUMA 1301	HUMA 1315
Social & Behavioral Sciences† † (PSYC 2301, SOCI 1301, ECO 2301 or ECO 2302)	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302

For transfer students upper level courses can be taken for history, arts, humanities, and social and behavioral sciences.

Natural Science 9 sem. Hrs. (See Science prerequisites for major above)

Math or Statistics 6 sem. Hrs. (See Calculus prerequisites for major above)

U.T. DALLAS PROGRAM (JUNIOR-SENIOR LEVEL COURSES)

122-127 semester hours are required for graduation with at least 51 upper level hrs.

CORE REQUIREMENTS FOR MAJOR (26 sem. Hrs.)

BIOL 3301/3101 Classical & Molecular Genetics with Workshop
 BIOL 3302/3102 Eukaryotic Molecular & Cell Biology with Workshop
 BIOL 3361/3161 Biochemistry I with Workshop
 BIOL 3362/3162 Biochemistry II with Workshop
 BIOL 3380 Biochemistry Laboratory
 BIOL 4380 Cell & Molecular Biology Laboratory
 BIOL 4461 Biophysical Chemistry (Molecular Biology majors only)

BIOLOGY UPPER LEVEL ELECTIVES(12 sem. Hrs.)

* Required as a MATH option for the Molecular Biology Degree, which additionally requires either Multivariable Calculus (MATH 2451) or Statistics for Life Sciences (STAT 3332).

** Not valid for General Education Core starting Fall 2003. See advisor for options, which include ENGL 2322 and PHIL 1301.

† These courses transfer only when taken prior to enrolling at UTD.

B. 2002 - 2008 BACHELOR OF ARTS (B.A.) DEGREE

COMMUNITY/JUNIOR COLLEGE PROGRAM (FRESHMAN-SOPHOMORE LEVEL COURSES) Completion of a minimum of 54 Sem. Hrs. (excluding non-transferable courses) is required for admission to U.T. Dallas as a *junior*.

U.T. Dallas	Collin Co. Com. Col.	N. Central TX Col.	Dallas Co. Com. Col.	Grayson Co. Col.	Tarrant Co. Jr. Col.
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PREREQUISITES FOR MAJOR (43 sem. Hrs.)

Gen. Biology I,II (BIOL 2311,2312,2281)	BIOL 1406,1407	BIOL 1411,1413	BIOL 1406,1407	BIOL 1306/1106 1307/1107	BIO 1406,1407
Gen. Biology I,II Workshop (2111,2112)					
NOT REQUIRED FOR TRANSFER STUDENTS					
Gen. Chemistry I,II (CHEM 1311,1111,1312,1112)	CHEM 1411,1412	CHEM 1411,1412	CHEM 1411,1412	CHEM 1311/1111 1312/1112	CHM 1411,1412
Gen. Org. Chem. I,II (CHEM 2323/2123,2325/2125)	CHEM 2423,2425	CHEM 2423,2425	CHEM 2423,2425	CHEM 2323/2123 2325/2125	CHM 2423,2425
Applied Calculus (MATH 1325)	MATH 1325	MATH 1325	MATH 1325	MATH 2325	MTH 1663
Statistics for Life Sciences (STAT 3332)	N/A	N/A	N/A	N/A	N/A
Gen. Physics I,II (PHYS 1301/1101,1302/1102)	PHYS 1401,1402	PHYS 1401,1402	PHYS 1401,1402	PHYS 1401,1402	PHY 1614,1624

GENERAL EDUCATION CORE REQUIREMENTS (28 sem. Hrs.)

American History † (HST 1301,1302)	HIST 1301,1302	HIST 1301,1302	HIST 1301,1302	HIST 1301,1302	HST 1301,1302
U.S./Texas Govt. (GOVT 2301,2302)	GOVT 2301,2302	GOVT 2301,2302	GOVT 2301,2302	GOVT 2301,2302	GOVT 2301,2302
Rhetoric/Comp.II (RHET 1302)	ENGL 1302	ENGL 1302	ENGL 1302	ENGL 1302	ENG 1302
Exploration of the Arts † (AP 1301)	ARTS 1301	ARTS 1301	ARTS 1301	ARTS 1301	ARTS 1301
Exploration of the Humanities † (HUMA 1301)	HUMA 1301	HUMA 1371	HUMA 1301**	HUMA 1301	HUMA 1315
Social & Behavioral Sciences † (PSYC 2301 or SOCI 1301 ECO 2301 or ECO 2302)	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302	PSYC 2301, SOCI 1301, ECON 2301or ECON 2302

For transfer students upper level courses can be taken for history, arts, humanities, and social and behavioral sciences.

Natural Science 9 sem. Hrs. (See Science prerequisites for major above)

Math or Statistics 6 sem. Hrs. (See Calculus prerequisites for major above)

U.T. DALLAS PROGRAM (JUNIOR-SENIOR LEVEL COURSES)

126-129 semester hours are required for graduation with at least 51 upper level hrs.

CORE REQUIREMENTS FOR MAJOR (19 sem. Hrs.)

- BIOL 3301/3101 Classical & Molecular Genetics with Workshop
- BIOL 3302/3102 Eukaryotic Molecular & Cell Biology with Workshop
- BIOL 3361/3161 Biochemistry I with Workshop
- BIOL 3362/3162 Biochemistry II with Workshop
- BIOL 3380 Biochemistry Laboratory

FREE ELECTIVES (27-29 sem. Hrs.)

BIOLOGY UPPER LEVEL ELECTIVES (9 sem. Hrs.)

** Not valid for General Education Core starting Fall 2003. See advisor for options, which include ENGL 2322 and PHIL 1301.

VII. TYPICAL FOUR-YEAR COURSES LOAD FOR BIOLOGY STUDENTS

The following are courses that are generally taken by biology students who are pursuing the Bachelor of Arts and Bachelor of Science Degrees in Biology. This schedule is flexible and is designed to be used as an aid when students are preparing for each semester. Although the math and science prerequisites and the biology core courses should be taken in the order listed, *the general education core curriculum courses shown in italics may be taken in any desired order*. See your advisor for specific course options for these italicized, general education courses.

A. BACHELOR OF SCIENCE DEGREE IN BIOLOGY 2004-2006

• FALL

FIRST YEAR

MATH 2417	Calculus I
CHEM 1311	General Chemistry I
CHEM 1111	General Chemistry Lab I
RHET 1302	<i>Composition & Rhetoric</i>
RHET 1101	Oral Communication <i>Humanities</i>

• SPRING

MATH 2419	Calculus II
CHEM 1312	General Chemistry II
CHEM 1112	General Chemistry Lab II
PHYS 3341	Physics for Biosciences I
PHYS 2125	Physics Lab I <i>Social & Behavioral Sciences</i>

SECOND YEAR

BIOL 2311	Modern Biology I
BIOL 2111	Modern Biology Workshop I
CHEM 2323	Organic Chemistry I
CHEM 2123	Organic Chemistry Lab I
PHYS 3342	Physics for Biosciences II
PHYS 2126	Physics Lab II <i>U.S. and Texas History</i>

BIOL 2312	Modern Biology II
BIOL 2112	Modern Biology II Workshop
BIOL 2281	Introductory Biology Lab
CHEM 2325	Organic Chemistry II
CHEM 2125	Organic Chemistry Lab II <i>U.S. and Texas History</i> <i>Visual & Performing Arts</i>

THIRD YEAR

BIOL 3301	Genetics
BIOL 3101	Genetics Workshop
BIOL 3361	Biochemistry I
BIOL 3161	Biochemistry I Workshop
GOVT 2301	<i>Constitutional Foundations and</i> <i>Political Behavior in U.S. and TX</i> Upper-Level Free Elective Upper-Level Free Elective

BIOL 3302	Molecular & Cell Biology
BIOL 3102	Molecular & Cell Biology Workshop
BIOL 3362	Biochemistry II
BIOL 3162	Biochemistry II Workshop
BIOL 3380	Biochemistry Lab
GOVT 2302	<i>Political Institutions in U.S. & TX</i> Upper-Level Free Elective

FOURTH YEAR

BIOL 4380	Cell Biology Lab
BIOL 3xxx/4xxx	Upper-Level Elective
BIOL 3xxx/4xxx	Upper-Level Elective
	Upper-Level Free Elective
	Upper-Level Free Elective

BIOL 3xxx/4xxx	Upper-Level Elective
BIOL 3xxx/4xxx	Upper-Level Elective
	Advanced Writing Requirement
	Upper-Level Free Elective
	Upper-Level Free Elective

B. BACHELOR OF SCIENCE DEGREE IN MOLECULAR BIOLOGY 2004-2006

• FALL

FIRST YEAR

MATH 2417	Calculus I
CHEM 1311	General Chemistry I
CHEM 1111	General Chemistry Lab I
RHET 1302	<i>Composition & Rhetoric</i>
RHET 1101	Oral Communication <i>Humanities</i>

• SPRING

MATH 2419	Calculus II
CHEM 1312	General Chemistry II
CHEM 1112	General Chemistry Lab II
PHYS 3341	Physics for Bioscience I
PHYS 2125	Physics Lab I <i>Social & Behavioral Sciences</i>

SECOND YEAR

BIOL 2311	Modern Biology I
BIOL 2111	Modern Biology Workshop I
CHEM 2323	Organic Chemistry I
CHEM 2123	Organic Chemistry Lab I
PHYS 3342	Physics for Bioscience II
PHYS 2126	Physics Lab II <i>U.S. and Texas History</i>

BIOL 2312	Modern Biology II
BIOL 2112	Modern Biology II Workshop
BIOL 2281	Introductory Biology Lab
CHEM 2325	Organic Chemistry II
CHEM 2125	Organic Chemistry Lab II
MATH 2451	Multivariable Calculus
or STAT 3332	Statistics for Life Sciences <i>U.S. and Texas History</i>

THIRD YEAR

BIOL 3301	Genetics
BIOL 3101	Genetics Workshop
BIOL 3361	Biochemistry I
BIOL 3161	Biochemistry I Workshop
GOVT 2301	<i>Constitutional Foundations and Political Behavior in U.S. & TX</i> Upper-Level Free Elective Upper-Level Free Elective

BIOL 3302	Molecular & Cell Biology
BIOL 3102	Molecular & Cell Biology Workshop
BIOL 3362	Biochemistry II
BIOL 3162	Biochemistry II Workshop
BIOL 3380	Biochemistry Lab
GOVT 2302	<i>Political Institutions in U.S. & TX</i> Upper-Level Free Elective

FOURTH YEAR

BIOL 4380	Cell Biology Lab
or BIOL 3V96/4V96	Research in Molecular & Cell Biology
BIOL 3xxx/4xxx†	Upper-Level Elective
BIOL 3xxx/4xxx†	Upper-Level Elective Upper-Level Free Elective Upper-Level Free Elective

BIOL 3xxx/4xxx†	Upper-Level Elective
BIOL 4461	Biophysical Chemistry Advanced Writing Requirement Upper-Level Free Elective Upper-Level Free Elective

SUMMER*

Visual & Performing Arts

BIOL Upper-Level Elective

† or Molecular Biology related CHEM course.

* To maintain a reasonable course load, students may elect to take these or other classes during the summer session.

C. BACHELOR OF ARTS DEGREE IN BIOLOGY 2004-2006

• FALL

FIRST YEAR

MATH 1325	Applied Calculus I
CHEM 1311	General Chemistry I
CHEM 1111	General Chemistry Lab I
RHET 1302	<i>Composition & Rhetoric</i>
RHET 1101	Oral Communication
PHYS 1301	College Physics I
PHYS 1101	College Physics Lab I

SECOND YEAR

BIOL 2311	Modern Biology I
BIOL 2111	Modern Biology Workshop I
CHEM 2323	Organic Chemistry I
CHEM 2123	Organic Chemistry Lab I <i>U.S. History</i> <i>Humanities</i>

THIRD YEAR

BIOL 3301	Genetics
BIOL 3101	Genetics Workshop
BIOL 3361	Biochemistry I
BIOL 3161	Biochemistry I Workshop
GOVT 2301	<i>Constitutional Foundations and</i> <i>Political Behavior in U.S. & TX</i> Upper-Level Free Elective Free Elective

FOURTH YEAR

BIOL 3xxx/4xxx	Upper-Level Elective Free-Elective Upper-Level Free Elective Upper-Level Free Elective Upper-Level Free Elective Upper-Level Free Elective
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• SPRING

STAT 3332	Statistics
CHEM 1312	General Chemistry II
CHEM 1112	General Chemistry Lab II
PHYS 1302	College Physics II
PHYS 1102	College Physics Lab II <i>Social & Behavioral Sciences</i>

BIOL 2312	Modern Biology II
BIOL 2112	Modern Biology II Workshop
BIOL 2281	Introductory Biology Lab
CHEM 2325	Organic Chemistry II
CHEM 2125	Organic Chemistry Lab II <i>U.S. and Texas History</i> <i>Visual & Performing Arts</i>

BIOL 3302	Molecular & Cell Biology
BIOL 3101	Molecular & Cell Biology Workshop
BIOL 3362	Biochemistry II
BIOL 3162	Biochemistry II Workshop
BIOL 3380	Biochemistry Lab
GOVT 2302	<i>Political Institutions in U.S. & TX</i> Free Elective

BIOL 3xxx/4xxx	Upper-Level Elective
BIOL 3xxx/4xxx	Upper-Level Elective Advanced Writing Requirement Upper-Level Free Elective Upper-Level Free Elective

D. TYPICAL FOUR-YEAR COURSE LOAD FOR BIOLOGY/BUSINESS ADMINISTRATION STUDENTS

The following are courses that are generally taken by biology students who are pursuing the BS double degree in Biology and Business Administration. This schedule is flexible and is designed as an aid when students are preparing for each semester. Although the math and science prerequisites and the biology core courses should be taken in the order listed, *the general education courses shown in italics may be taken in any desired order*. See your advisor for specific course options for these italicized courses. For a BA in Biology, Applied Calculus I and II (MATH 1325, 1326) replaces Calculus I and II, and algebra-based Physics with lab (PHYS 1301/1101, 1302/1102) replaces Physics I and II for Biosciences. Additionally, BIOL 4380 may be substituted with an Upper Level BIOL elective.

• FALL

FIRST YEAR

MATH 2417	Calculus I
CHEM 1311	General Chemistry I
CHEM 1111	General Chemistry Lab I
ECO 2301	Macroeconomics
RHET 1302	<i>Composition & Rhetoric</i>
RHET 1101	Oral Communication

SECOND YEAR

BIOL 2311	Modern Biology I
BIOL 2111	Modern Biology Workshop I
CHEM 2323	Organic Chemistry I
CHEM 2123	Organic Chemistry Lab I
PHYS 3342	Physics for Biosciences II
PHYS 2126	Physics Lab II
AIM 2301	Intro to Financial Accounting
BA 2302	Business & Public Law

THIRD YEAR

BIOL 3301	Genetics
BIOL 3101	Genetics Workshop
BIOL 3361	Biochemistry I
BIOL 3161	Biochemistry I Workshop
BA 3341	Business Finance
BA 3351	Management Info Systems
STAT 3360	Probability & Statistics

FOURTH YEAR

BIOL 4380	Cell Biology Lab
GOVT 2302	<i>Political Institutions in U.S. & TX</i>
BA 3361	Organization Behavior
BA 3365	Marketing Management
	Upper-Level Free Elective

• SPRING

MATH 2419	Calculus II
CHEM 1312	General Chemistry II
CHEM 1112	General Chemistry Lab II
PHYS 3341	Physics for Biosciences I
PHYS 2125	Physics Lab II
ECO 2302	Microeconomics
BIOL 2312	Modern Biology II
BIOL 2112	Modern Biology II Workshop
BIOL 2281	Introductory Biology Lab
CHEM 2325	Organic Chemistry II
CHEM 2125	Organic Chemistry Lab II
AIM 2302	Intro to Cost Management
MATH 2333	Matrices, Vectors & Linear Program

BIOL 3302	Molecular & Cell Biology
BIOL 3102	Molecular & Cell Biology Workshop
BIOL 3362	Biochemistry II
BIOL 3162	Biochemistry II Workshop
BIOL 3380	Biochemistry Lab
BA 3352	Production Management

BA 4371	International Business
BA 4305	Social/Pol. Environment of Business
	<i>Humanities</i>
	Upper-Level Management Elective
	Upper-Level Management Elective

SUMMER*

U.S. and Texas History

U.S. and Texas History

GOVT 2301 *Constitutional Foundations and Political Behavior in U.S. & TX*

Visual & Performing Arts

* To maintain a reasonable course load, students may elect to take these or other core classes during the summer session.

E. TYPICAL FOUR-YEAR COURSE LOAD FOR BIOLOGY CRIME AND JUSTICE STUDENTS

The following are courses that are generally taken by biology students who are pursuing the BS Degree in Biology and Crime and Justice Studies. This schedule is flexible and is designed to be used as an aid when students are preparing for each semester. Although the math and science prerequisites and the biology core courses should be taken in the order listed, *the general education courses shown in italics may be taken in any desired order*. See your advisor for specific course options for these italicized courses. For the BA, the math requirement may be satisfied with Applied Calculus I (MATH 1325) and either for Statistics for Life Sciences (STAT 3332) or Introduction to Social Statistics (SOC 3305/3105) and the physics requirement may be satisfied with algebra-based College Physics I & II with lab (PHYS 1301, 1302, 1101, 1102). Additionally, BIOL 4380 may be substituted with an Upper Biology Elective.

• FALL

FIRST YEAR

MATH 2417	Calculus I
CHEM 1311	General Chemistry I
CHEM 1111	General Chemistry Lab I
RHET 1302	<i>Composition & Rhetoric</i>
RHET 1101	Oral Communication <i>Humanities</i>

SECOND YEAR

BIOL 2311	Modern Biology I
BIOL 2111	Modern Biology Workshop I
CHEM 2323	Organic Chemistry I
CHEM 2123	Organic Chemistry Lab I
PHYS 3342	Physics for Biosciences II
PHYS 2126	Physics Lab II
CJS 3301	Theories of Justice

THIRD YEAR

BIOL 3301	Genetics
BIOL 3101	Genetics Workshop
BIOL 3361	Biochemistry I
BIOL 3161	Biochemistry I Workshop
CJS 3300	Crime and Civil Liberties

FOURTH YEAR

BIOL 4380	Cell Biology Lab
BIOL 3318	Forensic Biology
CJS 3304	Research Methods in CJS Studies Upper-Level CJS or related Elective Upper-Level CJS or related Elective

• SPRING

MATH 2419	Calculus II
CHEM 1312	General Chemistry II
CHEM 1112	General Chemistry Lab II
PHYS 3341	Physics for Biosciences I
PHYS 2125	Physics Lab II
ECO 2301 or ECO 2302	Microeconomics Macroeconomics

BIOL 2312	Modern Biology II
BIOL 2112	Modern Biology II Workshop
BIOL 2281	Introductory Biology Lab
CHEM 2325	Organic Chemistry II
CHEM 2125	Organic Chemistry Lab II
CJS 3302	Advanced Criminology <i>Visual & Performing Arts</i>
BIOL 3302	Molecular & Cell Biology
BIOL 3102	Molecular & Cell Biology Workshop
BIOL 3362	Biochemistry II
BIOL 3162	Biochemistry II Workshop
BIOL 3380	Biochemistry Lab
CJS 3303	Advanced Criminal Justice Upper-Level CJS or related Elective

BIOL 3xxx/4xxx	Upper-Level Elective
CJS 4305	Social Control & Criminal Sanctions
CJS 4321	Senior Research Seminar Advanced Writing Requirement Upper-Level CJS or related Elective Upper-Level CJS or related Elective

SUMMER*

U.S. and Texas History

U.S. and Texas History

GOVT 2301 *Constitutional Foundations and Political Behavior in U.S. & TX*

GOVT 2302 *Political Institutions in U.S. & TX*

* To maintain a reasonable course load, students may elect to take these or other core classes during the summer session.

VIII. THE FACULTY

GAIL A. M. BREEN, Ph.D.

Associate Professor

Dr. Breen's research interests concern the biogenesis of the mammalian mitochondrial oxidative phosphorylation system and the regulation of eukaryotic gene expression. She is currently isolating and characterizing genes that encode subunits of the mammalian mitochondrial ATP synthase complex and analyzing the expression and regulation of these genes. Dr. Breen has a B.Sc. in Pharmacy from the University of Toronto and a Ph.D. in Neuroscience from the University of California, Los Angeles. She is currently a member of the American Society for Cell Biology and American Association for the Advancement of Science.

JOHN G. BURR, Ph.D.

Associate Professor

Dr. Burr's research interests involve eukaryotic cell growth regulation and oncogenesis. He is currently focusing his research on the oncogenic transformation of cells by Rous Sarcoma Virus (RSV). He has a B.Sc. in Chemistry from the University of California, Riverside and a Ph.D. in Molecular Biology from the University of California, Berkeley. Dr. Burr worked as a Research Scientist at Massachusetts Institute of Technology and as an Assistant Professor at UT-San Antonio before coming to UTD.

LEE A. BULLA, Ph.D.

Professor

Dr. Bulla's research interests are in the area of invertebrate and microbial molecular biology with particular focus on the biochemical and biophysical characterization of insecticidal toxin receptors in insects. In addition to his teaching responsibilities, he is the Director of the Center for Applied Biology at UTD. Dr. Bulla has a B.S. in Biology & Mathematics from Midwestern State University and a Ph.D. in Microbiology and Biochemistry from Oregon State University. Before coming to UTD, he was a professor of Molecular Biology at the University of Wyoming. He currently is a member of the American Society for Microbiology and the American Society of Biochemistry & Molecular Biology.

VINCENT P. CIRILLO, Ph.D.

Senior Lecturer

Dr. Cirillo joined the UTD faculty after retiring from the State University of New York at Stony Brook as Professor Emeritus of Biochemistry. He received a B.A. in Biology from the University of Buffalo, an M.S. from New York University, and Ph.D. in Zoology from UCLA. Over his long and illustrious career, Dr. Cirillo has held academic and scientific positions at the University of Oklahoma, Anheuser Busch Central Research Department, St. Louis University, and Seton Hall University as well as SUNY Stony Brook, where he served as Head of the Biochemistry Department. His major research interest in the last thirty years of his research career was the mechanism of sugar transport. Those studies began with kinetic studies on wild type and mutant yeast and ended with the publication of the complete DNA sequence of the yeast galactose transporter. When Dr. Cirillo moved to Dallas in 1991, he helped establish a hands-on science laboratory at the Northwood Hills Elementary School in the RISD in which he is still active.

SANTOSH D'MELLO, Ph.D.

Professor

The goal of Dr. D'Mello's laboratory is to understand how apoptosis (programmed cell death) is regulated in neurons of the mammalian brain. While apoptosis is a normal feature during early neurodevelopment, aberrant induction of apoptosis leading to undesirable neuronal loss occurs in several neurodegenerative diseases and following stroke or traumatic head injury. Dr. D'Mello received a Ph.D. degree from the University of Pittsburgh and postdoctoral training at Boston University School of Medicine and The Institute of Neurobiology, Rome. Before joining UTD, he was a Visiting Assistant Professor of Physiology and Neurobiology at the University of Connecticut.

JEFF DEJONG, Ph.D.

Associate Professor

Dr. DeJong's research interests include the factors and mechanisms responsible for the transcription of eukaryotic genes, as well as the regulation of genes whose encoded proteins metabolize and detoxify drugs and xenobiotics. Dr. DeJong received his B.A. in Biology in 1984 from the University of Missouri-Columbia and Ph.D. in Biochemistry from Pennsylvania State University in 1990. Prior to

joining the faculty at UTD, Dr. DeJong was a Postdoctoral Associate with Dr. Robert Roeder where he focused on RNA polymerase II transcription.

ROCKFORD K. DRAPER, Ph.D.

Professor

Dr. Draper's research interests include the molecular pathogenesis of protein toxins, such as cholera toxin, membranes trafficking in eukaryotic cells, and the new field of bionanotechnology. He is currently using small interfering RNA (siRNA) fragments to suppress the expression of proteins in order to probe their role in the membrane trafficking of toxins. He is also investigating how interaction of coatomer protein with membranes and dissociation from them may control membrane trafficking. In a new line of investigation, Dr. Draper is examining the use of biomolecules for self-directed assembly of nanodevices. Dr. Draper received a B.A. in Chemistry from the University of Washington and a Ph.D. in Biological Chemistry from the University of California, Los Angeles. He has been involved with teaching and research at UTD since 1980. Dr. Draper is a member of the American Association for the Advancement of Science and American Society for Cell Biology.

JUAN E. GONZÁLEZ, Ph.D.

Professor and Associate Dean of Graduate Studies

Dr. González focuses his research on the role of exopolysaccharides in the nodulation of legumes by rhizobia and the molecular genetics of plant-microbe interactions. Dr. González received his B.S. in Microbiology and Public Health from Michigan State University and Ph.D. in Microbiology & Molecular Genetics from the University of California at Los Angeles in 1991. Before joining the staff at UTD, Dr. González was a Postdoctoral Fellow at the Massachusetts Institute of Technology where he focused his research on molecular signals.

STEVEN R. GOODMAN, Ph.D.

C.L. and Amelia A. Lundell Professor and Director of the UTD Sickle Cell Disease Research Center, Adjunct Professor at UTSW Medical Center

Dr. Goodman's research program over the past twenty-five years has dealt with a macromolecular structure on the cytoplasmic surface of eukaryotic membranes, called the spectrin membrane skeleton. More recently he has turned his attention to Sickle Cell Disease. In a recent collaborated phase II

human trial, it was demonstrated that NAC can substantially reduce the rate of painful vasoocclusive episodes (sickle cell crisis). Dr. Goodman received a B.S. at SUNY at Stony Brook and Ph.D. in biochemistry at St. Louis University Medical School. He was a Postdoctoral Fellow at Harvard Medical School. He was the Director of the Comprehensive Sickle Cell Center at the University of South Alabama College of Medicine before joining UTD. He is currently a member of many organizations including being an elected representative to the National Biomedical Caucus by the AACBNC.

DONALD M. GRAY, Ph.D.

Head, Molecular and Cell Biology Dept.

Professor

Dr. Gray's research interests include structures of polynucleotides studied by circular dichroism spectroscopy and the structures of DNA-protein complexes studied by CD spectra, NMR, and neutron diffraction techniques. He has a B.A. in Math, Physics, and Chemistry from Susquehanna University and a Ph.D. in Biophysics from Yale University. Dr. Gray has been with UTD for 30 years and has been a major contributor to the department's development. Dr. Gray is a member of the Biophysical Society, American Association for the Advancement of Science, American Association of University Professors, and American Chemical Society.

ERNEST M. HANNIG, Ph.D.

Associate Professor

Dr. Hannig's research interests include protein-protein interactions, genetic and biochemical analysis of translation initiation factors, and protein synthesis and its regulation in eukaryotes. Current projects involve translational regulation in yeast and the structure/function relationships of certain proteins. Dr. Hannig received a B.S. at Seton Hall University and Ph.D. in Molecular Genetics and Microbiology from Rutgers University. He was a Postdoctoral Fellowship at the National Institutes of Health prior to joining the faculty at UTD, where he is currently the Chair of the Graduate Education Committee. Dr. Hannig is a member of the American Association for the Advancement of Science, Genetics Society of America, and American Society for Biochemistry and Molecular Biology.

STEPHEN D. LEVENE, Ph.D.

Associate Professor

Dr. Levene's research interests involve protein-DNA interactions in site-specific recombination and the structure and dynamics of nucleic acids in solution. He has an A.B. in Chemistry from Columbia University and a Ph.D. in Chemistry from Yale University. Dr. Levene, before coming to UTD, did postdoctoral work at the University of California at Berkeley and University of California at San Diego. He is presently a member of the National Institutes of Health Interdisciplinary Special Emphasis Study Section and the Graduate Education Committee. His professional affiliations include the Biophysical Society, the New York Academy of Sciences, and the American Association of University Professors.

ROBERT C. MARSH, Ph.D.

Senior Lecturer

Dr. Marsh is a former Associate Head and Associate Professor in the Department of Molecular and Cell Biology at UTD. His research interests focused on subcellular structure. He was involved in projects concerning the identification and characterization of nuclear matrix proteins, cell surface lectins, and the protein cross-linking enzyme transglutaminase which has multiple functions in cell physiology. Dr. Marsh received a B.S. in Chemistry and Mathematics from Western Kentucky University and a Ph.D. in Molecular Biology at Vanderbilt University. Prior to joining UTD, Dr. Marsh worked as a Research Scientist of the Gesellschaft für Biotechnologische Forschung, Germany, and Princeton University.

DENNIS L. MILLER, Ph.D.

Associate Head, Molecular and Cell Biology Dept.

Associate Professor

Dr. Miller's research interests include the structure and organization of mitochondrial DNA, mitochondrial gene expression, RNA editing, and mitochondrial biogenesis. He is currently studying the extent and mechanism of RNA editing as a step in the mitochondrial gene expression of *Physarum polycephalum*. He received a B.A. in Chemistry from the University of Northern Iowa and Ph.D. in Biochemistry from the University of Iowa. Dr. Miller worked as a Postdoctoral Fellow at the UT Health Science Center at Dallas before joining the Biology Program at UTD. He is currently a member of the American Society for Microbiology and American Association for the Advancement of Science. He is currently Chair of the Biology Undergraduate Education Committee.

JOHN MOLTZ, Ph.D.

Senior Lecturer

Dr. Moltz joined the faculty in 1995. His primary responsibility is to offer a human anatomy and physiology curriculum to the pre-professional health care student. Dr. Moltz received his B.S. in Biology from Baylor University, 1971, M.S. in Biology from Texas Tech University, 1972, and a Ph.D. in Physiology from the University of Texas Health Science Center at Dallas, 1977. Prior to his joining the UTD faculty, Dr. Moltz was a member of the physiology faculty at UT Southwestern Medical School, Dallas, TX and Chairman of Physiology and Biochemistry and Director of Research at Parker College, Dallas, TX.

BETTY PACE, M.D.

Professor, Sickle Cell Center Director,

Clinical Faculty, UTSW Medical Center

The goal of Dr. Pace's research is to design novel treatments for sickle cell disease. Drug studies to understand the molecular mechanisms involved in fetal hemoglobin synthesis, to block the negative effects of the sickle gene is the main strategy used in the Pace laboratory. Studies to define the signal transduction pathway that mediates gamma gene reactivation by target drugs are underway. Ultimately, the transcription factor that directly interacts in the fetal gamma globin promoter will be targeted for gene therapy strategies to treat sickle cell disease. Dr. Pace received her M.D. degree from the Medical College of Wisconsin. Subsequently she completed a Pediatric Hematology/Oncology fellowship at the University of Colorado followed by a Postdoctoral Fellowship in Medical Genetics at the University of Washington. Before joining the UTD faculty, Dr. Pace was an Associate Professor of Cell Biology and Neuroscience at the University of South Alabama.

LAWRENCE J. REITZER, Ph.D.

Professor

Dr. Reitzer's research involves the regulation of gene expression and metabolism in *Escherichia coli* and pathogenic bacteria. He has a B.S. in Biology from Case Western Reserve University and a Ph.D. in Molecular and Cell Biology from Washington University. Before joining the Biology Program here at UTD, he was a Postdoctoral Fellow at the Massachusetts Institute of Technology in Cambridge. Dr. Reitzer serves on the Undergraduate Education Committee.

SCOTT A. RIPPEL, Ph.D.

Senior Lecturer

Dr. Rippel joined the faculty in 1999 as a Senior Lecturer. His primary instructional duties include teaching a Biotechnology Laboratory (BIO2V00) for non-majors, the junior-level Biochemistry Laboratory (BIO4380). He also functions as the Undergraduate Laboratory Facilities Coordinator and serves on both the Undergraduate Education Committee and the Health Professions Advisory Committee. Dr. Rippel received a B.S. in Biochemistry from Texas A&M (1988), an Associates in Business Management from the University of Maryland Overseas Division (1993), a M.S. (1996) and Ph.D. (1999) in Molecular and Cell Biology from The University of Texas at Dallas. His Ph.D. thesis involved structure function analysis of selection of the translational start site codon. He is a member of the American Association for the Advancement of Science and Sigma Xi.

ILYA SAPOZHNIKOV, M.D., Ph.D.

Senior Lecturer

Dr. Sapozhnikov received his Diploma of a Medical Doctor as well as the Ph.D. degree in Russia. He was the Head of the Research Group for the primary prevention and non-drug treatment of cardiovascular diseases at the USSR Research Cardiology Center for the Academy of the Medical Sciences in Moscow, Russia. For the last few years there, Dr. Sapozhnikov designed and coordinated a large-scale cooperative program on the epidemiology, prevention and treatment of Arterial Hypertension. This program was conducted among industrial workers in 23 cities of the former Soviet Union and involved more than 70,000 people. At the same times Dr. Sapozhnikov widely lectured on the preventive cardiology subject, produced over 80 articles, coauthored four books, and maintained a rigorous schedule in this practice of medicine. After coming to the USA in 1991, Dr. Sapozhnikov has launched his educational career. At UTD, he teaches two health-related courses of Biology: "Body Systems" and "Biological Basis of Health and Disease".

STEPHEN SPIRO, Ph.D.

Assistant Professor

Stephen Spiro is interested in the regulation of bacterial gene expression by environmental signals, and the consequences of gene regulation for adaptation to stress. Dr. Spiro's research is currently focused on responses to nitric oxide, a toxic free radical that is a by-product of normal metabolic processes in bacteria, as well as being a chemical

defense synthesized by host phagocytic cells in response to infection by pathogenic microorganisms. Dr. Spiro has a B.Sc. in Molecular Biology from the University of Edinburgh, and a Ph.D. in Molecular Biology and Microbiology from the University of Sheffield. He was a Postdoctoral Fellow at the University of Sheffield, and before joining UTD held Faculty positions at the University of East Anglia and the Georgia Institute of Technology.

TIANBING XIA, Ph.D.

Assistant Professor

Dr. Xia's research is directed toward understanding the correlations between structures, energetics, dynamics, and functions of important biomolecules. He is developing novel structural biology research tools, particularly, ultrafast laser spectroscopy combined with other traditional spectroscopy, to probe nucleic acid and protein structures, nucleic acid-protein interactions, and the central roles that these interactions play in regulating important biological processes. Dr. Xia has a B.S. in Chemistry and M.S. in Physical/Structural Chemistry from Peking University, and a Ph.D. in Biophysical Chemistry from the University of Rochester. Dr. Xia recently came to UTD from California Institute of Technology, where he conducted conformational dynamics research under Nobel laureate Ahmed H. Zewail, Ph.D. and Richard W. Roberts, Ph.D.

IX. RESEARCH & INTERNSHIPS

The Department of Molecular and Cell Biology provides the opportunity for its students to expand their knowledge and experience outside of the classroom. The faculty of the department openly welcomes students eager to work and learn in the research labs. This allows the students to learn the techniques necessary to become a successful scientist and create a positive and comfortable relationship with the faculty.

In addition to research opportunities on campus, the Biology Department offers internship opportunities at other labs in the Dallas area. These internships are available for pay and/or course credit depending upon the circumstances. Internships enable students to interact and learn outside of the university by working in some of the community's most prestigious research facilities. These have included UT-Southwestern Medical School, UNT Health Science Center, the Food and Drug Administration, and Cytoclonal Pharmaceuticals to name a few.

X. THE BIOLOGY CLUB

The Biology Club is a unique organization developed by biology students for biology students. The club, which was created in December 1995, is designed to 1) create a liaison between undergraduate biology students and faculty members, 2) establish research opportunities for undergraduates and inform students of current positions, and 3) keep biology students informed of developments in the scientific field. Membership is open to all students and faculty/staff of The University of Texas at Dallas who express interest in biology. It would be to the student's advantage to get involved early due to the increased number of biology students this year. For more information, visit their website at: www.utdallas.edu/orgs/biologyclub/

XI. PRE-MEDICAL, PREDENTAL & ALLIED HEALTH INFORMATION

UTD is a component of The University of Texas System with a national reputation in graduate research and science education. The health profession schools in Texas recognize UTD as a university which provides a strong undergraduate preparation for students who desire to enter careers in medicine, dentistry or the allied health professions.

Medicine and Dentistry

In preparation for application to medical or dental school, students are advised to choose a program of study leading to the baccalaureate degree. While many degree-seeking pre-medical/pre-dental students choose a science major it is not necessary to do so; the student may pursue any major, but should be sure to include in that major the prerequisites for medical or dental school.

Exceptionally mature non-degree students with outstanding academic records, superior performance on the respective admission test, and highly desirable personal qualifications may be considered for admission to medical or dental school if they have completed at least 90 semester hours prior to the anticipated date of enrollment.

The following courses are required for admission to Texas Medical Schools: two semesters (6 hrs.) English, two semesters (8 hrs.) Inorganic Chemistry with lab, two semesters (8 hrs.) Organic Chemistry with lab, two semesters (8 hrs.) General Physics with lab (does not have to be calculus-based), one semester Calculus or Statistics (UT Medical School

at Houston does not accept statistics), 14 hrs. of Biology courses for majors, including two hrs. of lab. Typically these Biology courses would be two semesters (8 hrs.) General Biology with lab and two semesters (6 hrs.) of upper division Biology with or without lab.

Medical schools require applicants to take the Medical College Admissions Test (MCAT); dental schools require applicants to take the Dental Admissions Test (DAT). The MCAT is offered in April and August. It is advisable to sit for the MCAT by April, a year-and-a-half before the fall enrollment date at medical school. The DAT is offered once a month. It is highly recommended to complete the exam by July of the application cycle in the year prior to enrollment at dental school.

There are also admission tests for Optometry Schools (OAT), Pharmacy Schools (PCAT), Veterinary Schools (VCAT or GRE) and for some programs in Allied Health Sciences Schools (GRE). The extent to which test results are used in deciding whether an applicant will be admitted to any one of these schools varies from school to school. Contact the individual schools to which you are interested in applying for further information on these examinations.

Allied Health Sciences

Programs in the Allied Health Sciences include areas such as health education, nutrition and dietetics, biomedical communication and media technology, cytotechnology, histotechnology, blood bank technology, nurse anesthesia, medical technology, gerontology services administration, respiratory technology, radiologic technology, physical therapy, physician assistants, rehabilitation science, and emergency medical services. In general, these are baccalaureate degree programs. Depending on the program, admission may require 60 to 90 semester hours at an accredited college or university; however, some programs require a B.S. degree before entering, while others require only a high school diploma.

Specific admission requirements for Texas schools can be found in the "Health Careers Handbook", available at the following website:

<http://opsa.tamu.edu/taahp/> (click on "Health Professions Guide")

Preparation for the Health Professions

The curricula at UTD not only assure an excellent preparation for entrance to a health professional school but also allow flexibility for the student to follow his or her own individual interests.

Each student's curriculum is coordinated by an undergraduate advisor in his or her chosen field of study, with assistance from an advisor in the Pre-Health Advising Center, which is headed by the Associate Dean for Pre-Health Education, Dr. Joseph Wood. The Pre-Health Advising Center is located in the Multi-Purpose Building, Room 2.234. Appointments with a Pre-Health Advisor can be scheduled by calling the Pre-Health Secretary at 972-883-6767.

Soon after entering UTD, pre-health students are encouraged to make an appointment for advising. Orientation seminars are offered at the beginning of each Fall semester.

All pre-health students are encouraged to become involved in extracurricular activities, and are strongly advised to do volunteer work or seek employment in a health related area (e.g, hospital, nursing home, doctor's office).

The Pre-Health Education office can provide current admission requirements, examination dates, and other information concerning individual health professions schools. This advising office also offers interview information and individual interviews and evaluations for pre-medical and pre-dental students.

Schedule for Professional School Applicants

Freshman and Sophomore Years:

Upon entrance to UTD, students should register with the Pre-Health Education list server (<http://www.utdallas.edu/dept/Pre-Health/>) Attend informational meetings, check the AED Pre-Health Education bulletin boards for announcements, pick up printed information offered at the Pre-Health Education office, and focus on their academics.

Junior Year (Fall Semester): *An evaluation by the campus Health Professions Advisory Committee (HPAC) is a required component of one's application to medical or dental schools.* At UTD, this evaluation is based on a personal interview with the applicant by the Committee, together with information provided by the applicant in the HPAC interview application. Students who plan to go through the HPAC interview process should obtain a HPAC Packet during one of the student seminars held in the fall, spring or summer. The Student Application Packet must be completed and returned to the Pre-Health Education Office by the required dates.

Junior Year (Spring Semester): Complete applications for the Medical College Admissions Test (MCAT) or Dental Admissions Test (DAT). MCAT tests are given in April and August. The deadline for application to take the MCAT is usually early March for the April exam, and early June for the August exam. DAT tests are administered exclusively by computer. The testing centers require at least 48 hours lead time for scheduling a test.

Junior Year (End of Spring Semester): Personal interviews with the HPAC are scheduled each semester. The following requirements must be met prior to being granted an interview by the HPAC:

- 1) Student must have completed at least 12 semester credit hours at UTD, with an overall GPA of 3.2 and a science GPA of 3.2. (The overall and science GPA requirements refer both to coursework taken at UTD and the combined GPA for all other schools attended prior to UTD.
- 2) Student must have taken (at UTD) and received a grade for the following courses: BIOL 3301 & 3302 (Genetics and Cell Biology), or CHEM 2323 and 2325 (Organic Chemistry), or BIOL 3361 & 3362 (Biochemistry).
- 3) The student must be able to have completed all of the courses required for admission to medical school by the end of the summer semester, 15 months after the HPAC interview. Most students will be in the second semester of their junior year at the time of the interview.

The HPAC interview panel ordinarily consists of two Advisory Committee members. The HPAC committee endeavors to make the interview a learning experience for the student, thus enabling the student to perform well on any possible admission interviews at a medical or dental school. The evaluations also contribute to the student's application. After the student has submitted an application to the professional school, the student should fill out the "HPAC Request Form" and turn it in to the Pre-Health Education office. The first ten evaluations are sent without charge to the student; additional evaluations require a nominal fee.

Senior Year (Fall Semester): The admission process to health professions schools should be complete, MCAT and DAT scores received, and committee evaluations mailed. Health profession schools normally conduct personal interviews in the Fall (between late August and late December) in

order to complete an entering class for the following fall semester.

Interviews

An interview at a medical or dental school is earned with consideration of the following: academic performance, MCAT and/or DAT scores, letters of evaluation, and other factors (i.e. the essay in the student's application), which any reveal the individual's maturity, motivation, integrity and social awareness. The Committee on Admission of each health profession school reviews all the objective and subjective information individually and comparatively and makes a decision whether or not to extend its exploration by inviting candidates to the campus for personal and professional evaluation. That Committee then submits the final recommendation to accept or reject a candidate's application.

Financial Aid

Students are advised to contact the Financial Aid offices at the individual health profession schools to which they apply.

Other Information

Princeton Review or Kaplan teach a review course for the MCAT on campus in the spring and summer semesters. Information about MCAT and DAT applications as well as applications for various medical or dental schools can be obtained in the Pre-Health Professions Office.

UTD has a chapter of the national premedical fraternity, Alpha Epsilon Delta (AED). AED invites all students interested in medicine, dentistry, veterinary medicine or the allied health professions to join. The objective of the club is to help its members gain knowledge of the health professions. At various times throughout the year AED plans trips to local hospitals and medical schools, invites guest speaker, etc. To learn about upcoming AED meetings, check the Health Professions bulletin board and the website (AED is case sensitive).

Communication

The UTD campus has five bulletin boards used specifically to inform medical, dental, and allied health science students of opportunities and upcoming events.

Bulletin boards are located:

1. within Founders North near the HPAC office
2. in Biology within the Founders Building
3. in Chemistry within the Berkner Building
4. in General Studies within Green Hall
5. in Psychology within Green Hall

Email is a vital link between the students and the Pre-Health Professions office. University email is available to all current students upon request, and a Pre-Health info List Serve is posted on the Pre-Health website. Students should subscribe.

XII. PHYSICIAN ASSISTANT FACT SHEET

PA Profession Founding & Historical Philosophy

Three historical events converged in the 1960's. National attention was beginning to focus on the shortage of physicians in the rural areas and in the inner cities during the JFK era, a model of a mid-level medical practitioner was being considered to augment the capabilities of existing primary care physicians in these areas, and there existed an influx of highly trained military hospital corpsmen and combat medics returning from war. Out of this scenario, the first PA Program was developed at Duke University comprised primarily of veteran medical corpsman. Historically, PAs developed as extenders of physician services to medically underserved populations and geographic areas who are dependent upon physician supervision.

The PA Profile

The mean *age* of a Physician Assistant is 40 with 56% being male and 44% female, but female numbers are increasing rapidly. In regards to the *ethnicity* ratio, 90% of PAs are White, 4% are Black, 4% Hispanic, and 2% Asian. Sixty-three percent of Physician Assistants work in offices with other P's. The mean number of years for PAs in their current position is 4.2. The mean number of years overall is 8.8 for PAs. These figures reflect the high demand for PAs and the number of job opportunities currently available.

Physician Assistants days *and hours worked* vary depending primarily on where they are employed. For PAs employed in inpatient settings, they see a mean of 15.6 patients per day and work a mean of 44.6 hours per week. PAs employed in clinical settings see a mean of 21.7 patients per day and work a mean of 41 hours per week. Lastly, PAs employed in nursing homes see a mean of 15.1 *patients per day* and work a mean of 32.2 hours per week. Also, the mean number of *on-call* hours worked for those PAs who have jobs which require call is 30.5 hours and 20% of PAs moonlight. In regards to the *practice area* of a PA, 48.5% of them work in primary care areas of medicine (Family/General Practice, General Internal Medicine

OB/Gyn, and General Pediatrics). The remaining PAs work in 55 different medical specialty areas. The number of PAs choosing to work in specialty areas is increasing which could possibly be reflecting market demand, salary, or work environment. Also, you will find a physician assistant practicing anywhere you find physicians which includes private practice, hospitals, health maintenance organizations, rural and urban clinics, military institutions, nursing homes, prison systems, and student health services.

The *job description* of a PA has not changed much over the years and they are, by definition, dependent health care providers. They work under the supervision of an MD or DO. What is officially defined as supervision differs by state and by practice setting. It may mean direct physician review of each patient encountered or, in rural or medically underserved areas, it may mean one half day of physical supervision per week and 10% of chart review.

A Physician Assistant is trained and qualified to perform a large percentage of medical tasks traditionally carried out by physicians. PAs take medical histories, perform physical examinations, order diagnostic tests, assist in surgery, manage medical emergencies, and perform numerous medical procedures – the amount and extent of supervision of which is determined by state medical boards and state regulations. Thirty-nine states allow PAs prescription writing privileges, the Federal DEA has approved separate prescription writing numbers for PAs, and almost all states allow prescription writing privileges to PAs practicing in medically underserved areas.

Physician Assistant Education

There are many *programs* across the U.S. for PAs. To date, there are 63 Accredited Primary Care Programs in 31 states and the mean program length is 27 months ranging from 12-48 months. An additional 50 or so are in various stages of development. Texas has five programs – UTSW at Dallas, Baylor College of Medicine in Houston (private), UT Medical Branch at Galveston, UNTHSC in Ft. Worth, and a Galveston ext. program called UT-Pan America concentrating on providing PAs to medically underserved areas of Texas. Texas also has one army program in San Antonio and one Air Force program in Wichita Falls.

After graduation from the program, 7.5 percent of the graduates will be accepted into a one year residency program at a very competitive level. Half of these residencies are for surgery and 15% are for emergency medicine. Many people want to know what type of *degrees* currently practicing PAs have after their program is completed. 72% of practicing PAs have obtained their Bachelors degree, 12% have a Masters, 1% Doctorate, 6% Certificate, 9% Associate, and 12 PA programs offer Master's degrees (e.g. Master of Public Health, Master of Health Sciences, Master of Physician Assistant Studies). There were approximately 40,469 practicing PAs in 2001. The US Bureau of Labor Statistics estimates there will be approximately 98,000 practicing PAs by 2008.

Entrance requirements vary by PA program, but in general, two years of college coursework with courses completed in the health sciences and premed type curricula are needed. The University of Texas Southwestern Medical Center specifically requires general biology, chemistry, microbiology, college algebra, psychology, and sociology. Most programs also require anatomy and physiology. All of the science courses must include laboratory. Some form of previous health care experience is required by all programs. The mean health care experience of applicants is 50 months.

Applications are increasing every year with the average program containing 300 applicants (accepts 40, enrolls 37). About one of nine or ten applicants is enrolled. The *cost* of the program must also be considered. It varies widely by program setting and it is generally equal to or slightly higher than regular undergraduate tuition rates. Programs affiliated with state university systems are generally less, and state resident tuition is less, but these programs are limited in the number of out of state applicants they may accept.

PA Job Opportunities

The amount of *opportunities* available for PA graduates is increasing rapidly. It has been estimated that there are currently anywhere from 7-12 employment opportunities for each graduating PA. Health care reform may add to this number but, the number of new programs opening may offset it.

PA Salary Data

According to statistics the mean *salary* for new graduates is \$45,961 and the overall is \$56,289. Most PAs make between 49 and 60K; however, some make much more than this and a few less. The less paid are those in specialty areas, especially surgical,

specialty surgical, and cardiothoracic surgical assisting. Most recent salary survey results may be obtained from the American Academy of Physician Assistants (AAPA).

PA Certification and Licensing

Registration and/or *Licensing* is required in all states where PAs are allowed to practice. Mississippi is the only state which does not allow PA practice. PA Certification is required in all states but Texas. Certification requires the passing of a national certifying examination after the completion of an accredited PA Program. This is administered by the NCCPA (National Commission on the Certification of PAs). PAs are required to *recertify* every six years, and complete 100 Continuing Medical Education credit hours every two years in much the same way as family practice physicians. Guidelines of PA practice are defined by each state's registration or licensing authority – which in most cases is the states medical board.

Contacts

- 1) American Academy of Physician Assistants
950 North Washington Street
Alexandria, VA 22314
(703) 836-2272

The AAPA is the national PA organization where all types of information and most recent data concerning the profession may be obtained. A directory of PA Programs is available through the AAPA for \$25.

- 2) The Texas Academy of Physician Assistants
P.O. Box 80075
Austin, TX 78727-0075
(512) 310-1654
(512) 310-1653 (fax)

The TAPA is the state chapter of the AAPA. Information of regional concern or statewide statistics may be obtained.

- 3) **All** of the above information was provided by
Jeff Nicholson, M.ED, PA-C
Director of Clinical Education
University of Texas-Southwestern
Physician Assistant Program
(214) 648-1700

XIII. FINANCIAL AID

The primary purpose of student financial aid is to assist those students who, without such assistance, would be unable to pursue higher education.

Financial aid has always been handled on an individual basis and the award is determined based on need. UTD considers all possible support the student will receive during school which may or may not include income, assets, and/or resources such as spouse or parent. Financial assistance exists in many forms (grants, loans, and scholarships) and must be applied for at least two months prior to the student's date of enrollment. To be considered for financial aid, the student must:

- Be a citizen or permanent resident of the U.S.
- Be enrolled in a program leading to a degree
- Not be on academic probation
- Be enrolled at least half time at UTD (6 hours for undergraduates, 5 hours for graduates)
- Maintain satisfactory progress in a course of study
- Not be in default on any insured or guaranteed loan made under the Federal Stafford Student Loan program (formerly Guaranteed Student Loan) or Hinson-Hazelwood Loan Program at any institution
- Not owe a refund on any grant received at any institution

XIV. OTHER IMPORTANT INFORMATION

Although the Office of Career Planning & Placement assists students and alumni with future career decisions, the Molecular and Cell Biology Department wants to play a major role in the student's educational and professional advancement. As an incoming student, you will meet with an undergraduate advisor to develop your degree plan. During your first semester, you will be assigned to a faculty advisor. It would be to your advantage to meet on a regular basis with your faculty advisor as their expertise could benefit you greatly when you have questions or issues concerning your Biology coursework. The main undergraduate student contacts in the Molecular and Cell Biology Department are the NS&M Undergraduate Advisors: Lori Johnston, A-Fi, (972) 883-2856, lorigj@utdallas.edu
DeeDee Peña, Fj-L (972) 883-2853, dap067000@utdallas.edu
Megan Farris, M-R, (972) 883-2885, megan.farris@utdallas.edu
Amy Boltrushek, S-Z, (972) 883-4147, aeb012300@utdallas.edu
You may also contact Dr. Dennis Miller, Associate Professor, Chair of the Molecular and Cell Biology Undergraduate Education Committee. Additionally, the department can be contacted through the Web at the following address: www.utdallas.edu

UTD Campus Map

BUILDING ABBREVIATIONS AND NAMES

AB Activities Center	GR Cecil H. Green Hall
AD Administration	HH Karl Hoblitzelle Hall
AS Visual Arts Studio	JO Erik Jonsson Academic Center
ATEC Arts and Technology Building	MC Eugene McDermott Library
BE Lloyd V. Berkner Hall	MP Multipurpose Building
BK Bookstore	NB North Office Building
CB Classroom Building	NL North Lab
CBW Classroom Building West	PG Police/Garage/Grounds Building
CN Conference Center	PS Property Storage
CR Callier Center Richardson	PP Physical Plant
ECSN Engineering/Computer Science North	SB Service Building
ECSS Engineering/Computer Science South	SOM School of Management
EP Energy Plant	SU Student Union
FA Founders West Annex	TH Theatre
FN Founders North	VC Visitor/Parking Information
FO Founders Building	WSTC Waterview Science and Technology Center
GC Cecil and Ida Green Center	

Waterview Park

Phase 1 Buildings 2-12	Phase 6 Buildings 43-46
Phase 2 Buildings 14-23	Phase 7 Buildings 48-51
Phase 3 Buildings 24-31	Phase 8a Buildings 53-59
Phase 4 Buildings 33-36	Phase 8b Buildings 61-63
Phase 5 Buildings 38-41	Phase 9 Buildings 65-67

Visitors: Please obtain a parking pass from the Visitor's Center (VC).

For more information call the main switchboard at 972 883-2111.

Physical Location The University of Texas at Dallas
 (not a mailing address) 800 West Campbell Road
 Richardson, TX 75080

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