

Biomedical Engineering Undergraduate Handbook



Catalog Year 2019-20

BACHELOR'S DEGREE

DEGREE PLANS

BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL ENGINEERING

BMEN
120 SCH
2019-20

Example Course of Study

Freshman Year

<u>Fall</u>		<u>Spring</u>		
	Science Lecture	3	PHYS 1710 Mechanics	3
	Science Lab	1	PHYS 1730 Laboratory in Mechanics	1
ENGL 1310	College Writing I OR	3	HIST 2610 History I	3
TECM 1700	Intro to Technical Writing	3	TECM 2700 Technical Writing	3
BMEN 1300	Discover BMEN	3	MATH 1720 Calculus II	3
MATH 1710	Calculus I	4	BMEN 1400 Software for Biomedical Engineers	4
PSCI 2306	American Government	<u>3</u>		17
		17		

Sophomore Year

<u>Fall</u>		<u>Spring</u>		
XXXX	ELECTIVE 1	3	BMEN 2320 Biomedical Instrumentation I	3
MATH 2700	Linear Algebra	3	MATH 3410 Differential Equations	3
CHEM 1410	General Chemistry	3	XXXX ELECTIVE 2	3
CHEM 1430	General Chemistry Laboratory	1	XXXX Lang Phil Culture	3
BMEN 2210	Biomed DAQ Practises	3	XXXX Visual and Performing Arts	<u>3</u>
PSCI 2305	American Government	3		
		16		15

Junior Year

<u>Fall</u>		<u>Spring</u>		
MATH 2730	Multivariate calculus	3	BMEN 3312 Introduction to Biomechanics	<u>3</u>
OR			MATH3680 Statistics and probability	3
MATH 3350	Intro to Numerical Analysis	3	BMEN 3321 Biomaterials	3
BMEN 3311	Biomedical Signal Analysis	3	HIST 2620 History II	3
BMEN 3350	Biomed Transport Phenom	3	XXXX ELECTIVE 4	3
BMEN 3310	Human Systems	3		
XXXX	ELECTIVE 3	<u>3</u>		
		15		15

Senior Year

<u>Fall</u>		<u>Spring</u>		
BMEN 4310	Biomedical Modeling	3		
XXXX	ELECTIVE 5	3	BMEN XXXX Advanced Topic in BMEN	3
BMEN 4212	Senior Design I	<u>1</u>	BMEN 4222 Senior Design II	3
BMEN XXXX	Advanced Topic in BMEN	3	BMEN XXXX Advanced Topic in BMEN	3
XXXX	Social and Behavioral Sciences	3	XXXX ELECTIVE 6	3
		13		12

University Core Courses in Green; Required courses in black; Prescribed electives in red; Track Electives in blue
 Science course and lab: choice between A&P 1 or PHYS II or CHEM II

BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL ENGINEERING

Biocomputing Track (Minor in Computer Science)

120 SCH

2019-20

Recommended Course of Study

Freshman Year

<u>Fall</u>		<u>Spring</u>		
CHEM 1410	General Chemistry	3	PHYS 1710 Mechanics	3
CHEM 1430	General Chemistry Laboratory	1	PHYS 1730 Laboratory in Mechanics	1
ENGL 1310	College Writing I OR	3	HIST 2610 History I	3
TECM 1700	Intro to Technical Writing	3	TECM 2700 Technical Writing	3
BMEN 1300	Discover BMEN	3	MATH 1720 Calculus II	3
MATH 1710	Calculus I	4	BMEN 1400 Software for Biomedical Engineers	4
PSCI 2306	American Government	<u>3</u>		17
		17		

Sophomore Year

<u>Fall</u>		<u>Spring</u>		
CSCE 1030	Computer Science I	3	BMEN 2320 Biomedical Instrumentation I	3
MATH 2700	Linear Algebra	3	MATH 3410 Differential Equations	3
PHYS 2220	Electricity and Magnetism	3	CSCE 1040 Computer Science II	3
PHYS 2240	Physics II lab	1	XXXX Lang Phil Culture	3
BMEN 2210	Biomed DAQ Practises	3	XXXX Visual and Performing Arts	<u>3</u>
PSCI 2305	American Government	3		
		16		
			15	

Junior Year

<u>Fall</u>		<u>Spring</u>		
MATH 2730	Multivariate calculus	3	BMEN 3312 Introduction to Biomechanics	<u>3</u>
OR			MATH3680 Statistics and probability	3
MATH 3350	Intro to Numerical Analysis	3	BMEN 3321 Biomaterials	3
BMEN 3311	Biomedical Signal Analysis	3	HIST 2620 History II	3
BMEN 3350	Biomed Transport Phenom	3	CSCE 2110 Computing Foundations II	3
BMEN 3310	Human Systems	3		
CSCE 2100	Computing Foundations I	<u>3</u>		
		15		
			15	

Senior Year

<u>Fall</u>		<u>Spring</u>		
BMEN 4310	Biomedical Modeling	3		
XXXX	CSCE ELECTIVE	3	BMEN XXXX Advanced Topic in BMEN	3
BMEN 4212	Senior Design I	<u>1</u>	BMEN 4222 Senior Design II	3
BMEN XXXX	Advanced Topic in BMEN	3	BMEN XXXX Advanced Topic in BMEN	3
XXXX	Social and Behavioral Sciences	3	XXXX CSCE ELECTIVE	3
		13		
			12	

University Core Courses in Green; Required courses in black; Prescribed electives in red; Free Electives in blue

BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL ENGINEERING

Bioinstrumentation Track (Minor in Electrical Engineering)

120 SCH

2019-20

Recommended Course of Study

Freshman Year

<u>Fall</u>		<u>Spring</u>		
CHEM 1410	General Chemistry	3	PHYS 1710 Mechanics	3
CHEM 1430	General Chemistry Laboratory	1	PHYS 1730 Laboratory in Mechanics	1
ENGL 1310	College Writing I OR	3	HIST 2610 History I	3
TECM 1700	Intro to Technical Writing	3	TECM 2700 Technical Writing	3
BMEN 1300	Discover BMEN	3	MATH 1720 Calculus II	3
MATH 1710	Calculus I	4	BMEN 1400 Software for Biomedical Engineers	4
PSCI 2306	American Government	3		
		<u>17</u>		17

Sophomore Year

<u>Fall</u>		<u>Spring</u>		
EENG 2710	Digital Logic Design	3	BMEN 2320 Biomedical Instrumentation I	3
EENG 2711	Digital Design Lab	1	MATH 3410 Differential Equations	3
MATH 2700	Linear Algebra	3	EENG 2610 Circuit Analysis	3
PHYS 2220	Electricity and Magnetism	3	EENG 2611 Circuit Analysis Lab	1
PHYS 2240	Physics II lab	1	XXXX Lang Phil Culture	3
BMEN 2210	Biomed DAQ Practises	3	XXXX Visual and Performing Arts	3
PSCI 2305	American Government	3		
		<u>17</u>		16

Junior Year

<u>Fall</u>		<u>Spring</u>		
MATH 2730	Multivariate calculus OR	3	BMEN 3312 Introduction to Biomechanics	3
MATH 3350	Intro to Numerical Analysis	3	MATH3680 Statistics and probability	3
BMEN 3311	Biomedical Signal Analysis	3	BMEN 3321 Biomaterials	3
BMEN 3350	Biomed Transport Phenom	3	HIST 2620 History II	3
BMEN 3310	Human Systems	3		
EENG 2620	Signals and Systems	3		
EENG 2621	Signals and Systems Lab	1		
		<u>16</u>		12

Senior Year

<u>Fall</u>		<u>Spring</u>		
BMEN 4310	Biomedical Modeling	3		
EENG 3510	Electronics I	3	BMEN XXXX Advanced Topic in BMEN	3
BMEN 4212	Senior Design I	1	BMEN 4222 Senior Design II	3
BMEN XXXX	Advanced Topic in BMEN	3	BMEN XXXX Advanced Topic in BMEN	3
XXXX	Social and Behavioral Sciences	3	EENG 4000-Level EE ELECTIVE	3
		<u>13</u>		12

University Core Courses in Green; Required courses in black; Prescribed electives in red; Free Electives in blue

BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL ENGINEERING

Biomechanics Track (Minor in Mechanical and Energy Engineering)

(120 + 3) SCH

2019-20

Recommended Course of Study

Freshman Year

<u>Fall</u>		<u>Spring</u>		
CHEM 1410	General Chemistry	3	PHYS 1710 Mechanics	3
CHEM 1430	General Chemistry Laboratory	1	PHYS 1730 Laboratory in Mechanics	1
ENGL 1310	College Writing I OR	3	HIST 2610 History I	3
TECM 1700	Intro to Technical Writing	3	TECM 2700 Technical Writing	3
BMEN 1300	Discover BMEN	3	MATH 1720 Calculus II	3
MATH 1710	Calculus I	4	BMEN 1400 Software for Biomedical Engineers	4
PSCI 2306	American Government	3		
		17		17

Sophomore Year

<u>Fall</u>		<u>Spring</u>		
MEEN 2301	Mechanics I	3	BMEN 2320 Biomedical Instrumentation I	3
MATH 2700	Linear Algebra	3	MATH 3410 Differential Equations	3
CHEM 1420	General Chemistry II	3	MEEN 2302 Mechanics II	3
CHEM 1440	General Chemistry II Laboratory	1	XXXX Lang Phil Culture	3
BMEN 2210	Biomed DAQ Practises	3	XXXX Visual and Performing Arts	3
PSCI 2305	American Government	3		
		16		15

Junior Year

<u>Fall</u>		<u>Spring</u>		
MATH 2730	Multivariate calculus	3	BMEN 3312 Introduction to Biomechanics	3
OR			MATH3680 Statistics and probability	3
MATH 3350	Intro to Numerical Analysis	3	BMEN 3321 Biomaterials	3
BMEN 3311	Biomedical Signal Analysis	3	HIST 2620 History II	3
BMEN 3350	Biomed Transport Phenom	3	MEEN 2332 Mechanics III	3
BMEN 3310	Human Systems	3		
MEEN 2210	Thermodynamics	3		
		15		15

Senior Year

<u>Fall</u>		<u>Spring</u>		
BMEN 4310	Biomedical Modeling	3		
XXXX	MEEN ELECTIVE	3	BMEN XXXX Advanced Topic in BMEN	3
BMEN 4212	Senior Design I	1	BMEN 4222 Senior Design II	3
BMEN XXXX	Advanced Topic in BMEN	3	BMEN XXXX Advanced Topic in BMEN	3
XXXX	Social and Behavioral Sciences	3	XXXX MEEN ELECTIVE	3
			***XXXX MEEN ELECTIVE	3
		13		15

*** To get MEEN minor

University Core Courses in Green; Required courses in black; Prescribed electives in red; Free Electives in blue

BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL ENGINEERING

Biomaterials Track (Minor in Materials Science and Engineering)

120 SCH

2019-20

Recommended Course of Study

Freshman Year

<u>Fall</u>		<u>Spring</u>		
CHEM 1410	General Chemistry	3	PHYS 1710 Mechanics	3
CHEM 1430	General Chemistry Laboratory	1	PHYS 1730 Laboratory in Mechanics	1
ENGL 1310	College Writing I OR	3	HIST 2610 History I	3
TECM 1700	Intro to Technical Writing	3	TECM 2700 Technical Writing	3
BMEN 1300	Discover BMEN	3	MATH 1720 Calculus II	3
MATH 1710	Calculus I	4	BMEN 1400 Software for Biomedical Engineers	4
PSCI 2306	American Government	<u>3</u>		
		17		17

Sophomore Year

<u>Fall</u>		<u>Spring</u>		
MTSE 3000	Fundamentals of MTSE	3	BMEN 2320 Biomedical Instrumentation I	3
MATH 2700	Linear Algebra	3	MATH 3410 Differential Equations	3
CHEM 1420	General Chemistry II	3	XXXX MTSE ELECTIVE	3
CHEM 1440	General Chemistry II Laboratory	1	XXXX Lang Phil Culture	3
BMEN 2210	Biomed DAQ Practises	3	XXXX Visual and Performing Arts	<u>3</u>
PSCI 2305	American Government	3		
		16		15

Junior Year

<u>Fall</u>		<u>Spring</u>		
MATH 2730	Multivariate calculus	3	BMEN 3312 Introduction to Biomechanics	<u>3</u>
OR			MATH3680 Statistics and probability	3
MATH 3350	Intro to Numerical Analysis	3	BMEN 3321 Biomaterials	3
BMEN 3311	Biomedical Signal Analysis	3	HIST 2620 History II	3
BMEN 3350	Biomed Transport Phenom	3	XXXX MTSE ELECTIVE	3
BMEN 3310	Human Systems	3		
XXXX	MTSE ELECTIVE	<u>3</u>		
		15		15

Senior Year

<u>Fall</u>		<u>Spring</u>		
BMEN 4310	Biomedical Modeling	3		
XXXX	MTSE ELECTIVE	3	BMEN XXXX Advanced Topic in BMEN	3
BMEN 4212	Senior Design I	<u>1</u>	BMEN 4222 Senior Design II	3
BMEN XXXX	Advanced Topic in BMEN	3	BMEN XXXX Advanced Topic in BMEN	3
XXXX	Social and Behavioral Sciences	3	XXXX MTSE ELECTIVE	3
		13		12

University Core Courses in Green; Required courses in black; Prescribed electives in red; Free Electives in blue

BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL ENGINEERING

Biotechnology Track

125 -126 SCH

2019-20

Recommended Course of Study

Freshman Year

<u>Fall</u>		<u>Spring</u>		
CHEM 1410	General Chemistry	3	PHYS 1710 Mechanics	3
CHEM 1430	General Chemistry Laboratory	1	PHYS 1730 Laboratory in Mechanics	1
ENGL 1310	College Writing I OR	3	HIST 2610 History I	3
TECM 1700	Intro to Technical Writing	3	TECM 2700 Technical Writing	3
BMEN 1300	Discover BMEN	3	MATH 1720 Calculus II	3
MATH 1710	Calculus I	4	BMEN 1400 Software for Biomedical Engineers	4
PSCI 2306	American Government	<u>3</u>		
		17		17

Sophomore Year

<u>Fall</u>		<u>Spring</u>		
BIOL 1710	Principles of Biology I	3	BMEN 2320 Biomedical Instrumentation I	3
MATH 2700	Linear Algebra	3	MATH 3410 Differential Equations	3
CHEM 1420	Chemistry II	3	BIOL 1720 Biology II	3
CHEM 1440	Chemistry II lab	1	XXXX Lang Phil Culture	3
BMEN 2210	Biomed DAQ Practises	3	XXXX Visual and Performing Arts	<u>3</u>
PSCI 2305	American Government	3	BIOL 1760 Biology Lab	2
		16		17

Junior Year

<u>Fall</u>		<u>Spring</u>		
MATH 2730	Multivariate calculus	3	BMEN 3312 Introduction to Biomechanics	<u>3</u>
OR			MATH3680 Statistics and probability	3
MATH 3350	Intro to Numerical Analysis	3	BMEN 3321 Biomaterials	3
BMEN 3311	Biomedical Signal Analysis	3	HIST 2620 History II	3
BMEN 3350	Biomed Transport Phenom	3	BIOL 2041 Microbiology	3
BMEN 3310	Human Systems	3	BIOL 2042 Microbiology Lab	1
CHEM 2370	Organic Chem I	4.00		
and 2780	Lab	16		16

Senior Year

<u>Fall</u>		<u>Spring</u>		
BMEN 4310	Biomedical Modeling	3		
BIOL 3451/52	Genetics with Lab	4	BMEN XXXX Advanced Topic in BMEN	3
BMEN 4212	Senior Design I	<u>1</u>	BMEN 4222 Senior Design II	3
BMEN XXXX	Advanced Topic in BMEN	3	BMEN XXXX Advanced Topic in BMEN	3
XXXX	Social and Behavioral Sciences	3	XXXX BIOL ELECTIVE	3
		14		12

University Core Courses in Green; Required courses in black; Prescribed electives in red; Free Electives in blue
 Some Biology Courses may need pre-reqs; if these courses are not available at the time of registration,
 please visit with BMEN department advising.

BACHELOR OF SCIENCE DEGREE IN BIOMEDICAL ENGINEERING

Pre-Med Track = Biotech track + extra courses

(125/126 + Pre-med Requirement) SCH

2019-20

Recommended Course of Study

Freshman Year

<u>Fall</u>		<u>Spring</u>		
CHEM 1410	General Chemistry	3	PHYS 1710 Mechanics	3
CHEM 1430	General Chemistry Laboratory	1	PHYS 1730 Laboratory in Mechanics	1
ENGL 1310	College Writing I OR	3	HIST 2610 History I	3
TECM 1700	Intro to Technical Writing	3	TECM 2700 Technical Writing	3
BMEN 1300	Discover BMEN	3	MATH 1720 Calculus II	3
MATH 1710	Calculus I	4	BMEN 1400 Software for Biomedical Engineers	4
PSCI 2306	American Government	<u>3</u>		
		17		17

Sophomore Year

<u>Fall</u>		<u>Spring</u>		
BIOL 1710	Principles of Biology I	3	BMEN 2320 Biomedical Instrumentation I	3
MATH 2700	Linear Algebra	3	MATH 3410 Differential Equations	3
CHEM 1420	General Chemistry II	3	BIOL 1720 Biology II	3
CHEM 1440	General Chemistry II Laboratory	1	XXXX Lang Phil Culture	3
BMEN 2210	Biomed DAQ Practises	3	XXXX Visual and Performing Arts	<u>3</u>
PSCI 2305	American Government	3	BIOL 1760 Biology Lab	2
		16		17

Junior Year

<u>Fall</u>		<u>Spring</u>		
MATH 2730	Multivariate calculus	3	BMEN 3312 Introduction to Biomechanics	<u>3</u>
OR			MATH3680 Statistics and probability	3
MATH 3350	Intro to Numerical Analysis	3	BMEN 3321 Biomaterials	3
BMEN 3311	Biomedical Signal Analysis	3	HIST 2620 History II	3
BMEN 3350	Biomed Transport Phenom	3	BIOL 2041 Microbiology	3
BMEN 3310	Human Systems	3	BIOL 2042 Microbiology Lab	1
CHEM 2370/8	Organic Chemistry I with Lab	4		
		16		16

Senior Year

<u>Fall</u>		<u>Spring</u>		
BMEN 4310	Biomedical Modeling	3		
BIOL 3451	Genetics	3	BMEN XXXX Advanced Topic in BMEN	3
BIOL 3452	Genetics Lab	1	BMEN 4222 Senior Design II	3
BMEN 4212	Senior Design I	<u>1</u>	BMEN XXXX Advanced Topic in BMEN	3
BMEN XXXX	Advanced Topic in BMEN	3	XXXX BIOL/BIOC ELECTIVE	3
XXXX	Social and Behavioral Sciences	3		
		14		12

University Core Courses in Green; Required courses in black; Prescribed electives in red; Free Electives in blue

***** THIS DEGREE PLAN MAY TAKE MORE THAN 4 YEARS TO COMPLETE*****

CHECK PRE-MED CATALOG FOR ADDITIONAL COURSES

PRE-MEDICAL

Office of Health Professions, University of North Texas

2016-17

Texas Medical Schools

University of Texas Southwestern Medical Center
University of Texas Health Science Center—Houston Medical School
University of Texas Health Science Center—San Antonio Medical School
Texas A&M University Health Science Center
University of North Texas Health Science Center
Paul L. Foster School of Medicine
University of Texas Medical Branch —Galveston
Texas Tech University Health Sciences Center
Baylor College of Medicine
Dell Medical School
University of Texas Rio Grande Valley
UIW School of Osteopathic Medicine

Applying to Medical School

Application services include:

- Texas Medical and Dental Schools Application Service, www.tmdsas.com
- American Medical College Application Service, www.aamc.org (Baylor College of Medicine and allopathic schools outside of Texas)
- American Association of Colleges of Osteopathic Medicine Application Service, www.aacom.org (used for osteopathic schools outside of Texas)

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Todd Lang, M.S.
Senior Academic Counselor
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Mardreana Reed, M.Ed.
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UNT Health Professions Program
General Academic Building (GAB) 220
1155 Union Circle #305189
Denton, TX 76203

Phone: 940-565-2051

Website: <http://cas.unt.edu/advising/health-professions>

Preparing for the MCAT?

Visit www.aamc.org/mcat for information about the test

Exam Preparation Materials:

ExamCrackers

Kaplan

Princeton Review

The MCAT will also cover Introduction to Sociology (SOC1 1510)
and General Psychology (PSYC 1630 & 1650)

Get Involved!

Alpha Epsilon Delta

Pre-Health Minority Club
(Alpha Delta)

Medically Dedicated Students

UNT's Volunteer Organizations

American Medical Association

Texas Medical Association

American Association of
Medical Colleges

Mapping the Pre-Medical Journey

With the help of your advisor, use the prerequisite courses listed on the following page to create an individual plan for your pre-medical ambitions. Because circumstances can change and differ over time, this is an **unofficial** timeline and should be re-evaluated each semester.

FALL _____	Hrs.

SPRING _____	Hrs.

SUMMER I	Hrs.

SUMMER II	Hrs.

FALL _____	Hrs.

SPRING _____	Hrs.

SUMMER I	Hrs.

SUMMER II	Hrs.

FALL _____	Hrs.

SPRING _____	Hrs.

Fall Timeline

- Attend "What Should I Be Doing Now?" Seminar
- Attend personal essay workshops
- MCAT Preparation

Spring Timeline

- Attend HPAC Seminar
- HPAC Application due in March
- MCAT Prep/Take Exam (June or July)

SUMMER: Apply to medical schools through TMDSAS, AMCAS, and/or AACOMAS. Interviews with medical schools are typically July through December.

FALL _____	Hrs.

SPRING _____	Hrs.

Fall Timeline

- Medical School Interviews

Spring Timeline

- January—Match Date
- February—Informed by Medical Schools if accepted

PREREQUISITES

General Prerequisite Coursework for Texas Medical Schools

A 'C' or better is required in all coursework

BIOL 1710 (3hrs) General Biology I
BIOL 1720 (3hrs) General Biology II
BIOL 1760 (2hrs) General Biology Lab
BIOL Electives (6hrs)

Recommended: BIOL 2041/2042, BIOL 3800, BIOL 3510, or BIOL 3451/3452

CHEM 1410/1430 (4hrs) General Chemistry I
CHEM 1420/1440 (4hrs) General Chemistry II
CHEM 2370/3210 (4hrs) Organic Chemistry I
CHEM 2380/3220 (4hrs) Organic Chemistry II

BIOC 3621 (3hrs) Elementary Biochemistry*
Alternatives: BIOC 4540 and BIOC 4550

Physics I for Science Majors (4 hrs)**

Physics II for Science Majors (4 hrs)**

ENGL 1310 (3hrs) College Writing I or 1700 (3hrs) Intro to Technical Writing

ENGL 1320 (3hrs) College Writing II or 2700 (3hrs) Technical Writing

MATH 1680 (3hrs) Elementary Probability and Statistics

*Biochemistry is not required for all schools. See below for more information.

**Medical Schools require Physics Courses for science majors. Please see your major advisor for information on which physics are required for your degree.

Additional Information by School

UT Southwestern

1 semester of Biochemistry is accepted towards the Biology requirement (if two semesters completed)

Recommended for BIOL elective:
BIOL 3451/3452, BIOL 4201/4202,
BIOL 4055/4056, BIOL 2301/2311,
BIOL 2302/2312, BIOL 4290

1 semester of biochemistry is required (see general gray box)

Math: 1 semester of Calculus OR Statistics

Only requires 4 hrs of General Chemistry

UTHSC-Houston (McGovern)

Recommended for BIOL elective:
BIOL 3451/3452, BIOL 4201/4202,
BIOL 2301/2311, BIOL 2302/2312

Biochemistry accepted towards 14hrs of BIOL (not required)

Only one year of Biology can be completed by AP credit

No Math course is required

UTHSC-San Antonio

Biochemistry course may be used towards the Biology or Chemistry requirements

TAMU Health Science Center

6 of the 14 hours of Biological sciences must be at the **advanced level**; Biochemistry is required, but 3 of the advanced Biology hours can be from Biochemistry

Texas College of Osteopathic Medicine (UNT)

1 semester of Biochemistry is not required BUT accepted towards the Biology requirement

Recommended for BIOL elective:
BIOL 3451/3452, BIOL 4201/4202,
BIOL 2301/2311, BIOL 2302/2312,
BIOL 4290

Texas Tech HSC

Of the 14 hours of biology, 6 must be at the **advanced level**

Biochemistry is **required** and can be used toward the Biology or Chemistry requirement

UT Medical Branch

Statistics or Calculus is accepted

Biochemistry is not required (but recommended)

Recommended: BIOL 2301/2311, BIOL 2302/2312,
BIOL 2041/2042, BIOL 4201/4202, BIOL 3451/3452

UW School of Osteopathic Medicine

Biochemistry is not required

Only requires 8 hours of Biology (more is encouraged)

6 hours of Philosophy or related Humanities coursework is recommended

Statistics is not required, but 6 hours of coursework in Math or Statistics is recommended

Paul L. Foster

2017 Entering Class: Biochemistry is required, and can help satisfy either the biology or chemistry requirements

2017 Entering Class: Statistics is required (will no longer accept Calculus)

Recommended: 12 hours of Humanities, Social Sciences, or Behavioral Sciences

Biostatistics and Cellular/Molecular Biology is recommended

Dell Medical School

Requirements include:

11 hours of Biology (2 hours must be from labs)

Recommended: BIOL 3451

8 hours of Physics

12 hours of Chemistry (See website for options)

3 hours of Biochemistry

3 hours of English Composition

3 hours of Statistics

University of Texas Rio Grande Valley

Biochemistry course may be used towards the Biology or Chemistry requirements

Baylor College of Medicine

Requirements include:

3-4 hours of Math (Calculus, Stats, or Physics)

4 hours of Writing (See website for approved courses)

12 hours of Humanities/Social Sciences (See website for options)

6-8 hours of Organic Chemistry (lab is not required)

3-4 hours of Biochemistry (lab is not required)

3-4 hours of Advanced biology (lab is not required)

Recommended: Spanish

Program requirements may change without notice and vary with each school; you are still responsible for checking schools' websites for admissions information. Please see your academic advisor to further explore the requirements of the school in which you are interested.

Webpages and Resources

Texas Medical Schools

University of Texas Southwestern Medical Center
<http://www.utsouthwestern.edu/>

University of Texas Health Science Center—Houston Medical School
<https://www.uth.edu/>

University of Texas Health Science Center—San Antonio Medical School
<http://www.uthscsa.edu/>

Texas A&M University Health Science Center
<http://tamhsc.edu/>

University of North Texas Health Science Center
<http://web.unthsc.edu/>

Paul L. Foster School of Medicine
<http://el Paso.ttuhs.c.edu/fostersom/>

University of Texas Medical Branch —Galveston
<http://www.utmb.edu/>

Texas Tech University Health Sciences Center
<http://www.ttuhs.c.edu/>

Baylor College of Medicine
<https://www.bcm.edu/>

Dell Medical School (admitting 2016)
<http://www.utexas.edu/dell-medical-school>

UT Rio Grande Valley (admitting 2016)
<http://www.utrgv.edu/en-us/utrgv-medical-school/>

UIW School of Osteopathic Medicine
<http://www.uiw.edu/som/index.html>

Student and Professional Associations

Alpha Epsilon Delta
<http://aedunt.wix.com/texastheta>

Alpha Delta: Pre-Health Minority Club
<https://orgsync.com/9926/chapter>

Medically Dedicated Students
<https://orgsync.com/10711/chapter>

UNT's Volunteer Organizations
<http://studentaffairs.unt.edu/>

American Medical Association
<http://www.ama-assn.org/ama>

Texas Medical Association
<http://www.texmed.org/>

American Association of Medical Colleges
<https://www.aamc.org/>

Contact Us

To schedule an advising appointment, please contact our front desk at 940-565-2051. Have a quick question? Feel free to send us an e-mail using the addresses listed on the front page.

The best way to achieve your academic and career goals is to ask for help! We are committed to providing you the best service possible, so we look forward to seeing you in the near future!

MCAT Information and Preparation

About the MCAT
<https://www.aamc.org/students/applying/mcat/>

MCAT Prep Materials
<http://www.examcrackers.com/>
<http://www.kaptest.com/>
<http://www.princetonreview.com/>

Experience and Additional Resources

Physician Scribing
<http://www.scribeology.com/>
<http://scribeinnovations.com/>
<http://www.docassistscribe.com/>

Career Exploration
<https://www.aamc.org/students/aspiring/>
<http://texashotjobs.mobi/>
<http://explorehealthcareers.org/en/home>

UNDERGRADUATE MINORS

Computer Science and Engineering minor

A minor in computer science and engineering consists of a minimum of 19 semester hours of computer science and engineering courses, including 6 advanced hours.

Six hours of advanced courses must be taken at UNT.

Required courses

- [CSCE 1030 - Computer Science I](#)
- [CSCE 1040 - Computer Science II](#)
- [CSCE 2100 - Computing Foundations I](#)
- [CSCE 2110 - Computing Foundations II](#)

Electrical Engineering minor

A minor in electrical engineering requires a total of 18 semester hours of electrical engineering courses, including 6 hours of advanced courses. Six hours of advanced courses must be taken at UNT.

Required courses

[EENG 2610 - Circuit Analysis](#)

[EENG 2611 - Circuit Analysis Lab](#)

[EENG 2620 - Signals and Systems](#)

[EENG 2621 - Signals and Systems Lab](#)

[EENG 2710 - Digital Logic Design](#)

[EENG 2711 - Digital Logic Design Lab](#)

[EENG 3510 - Electronics I \(Devices and Materials\)](#)

One EE elective. (EE electives are defined as 4000-level organized EE courses, including [EENG 4010](#) and [EENG 4900](#) but excluding [EENG 4910](#), [EENG 4920](#), [EENG 4951](#) and [EENG 4990](#).)

Materials Science and Engineering minor

The minor in materials science and engineering requires a total of 18 semester credit hours:

Required

- [MTSE 3000- - Fundamentals of MTSE](#)
- Plus 15 hours of materials science and engineering courses, at least 6 of which should be chosen from the four core courses:

Core courses

- [MTSE 3010 - Bonding and Structure](#)
- [MTSE 3030 - Thermodynamics and Phase Diagrams](#)
- [MTSE 3050 - Mechanical Properties of Materials](#)
- [MTSE 3070 - Electrical, Optical and Magnetic Properties of Materials](#)

Additional requirements

The remaining hours can be from any other 3000- or 4000-level materials science engineering courses.

Mechanical and Energy Engineering minor

The minor in mechanical and energy engineering requires a total of 18 semester credit hours.

Required courses, 9 hours

- [MEEN 2210 - Thermodynamics I](#)
-
- [MEEN 2302 - Mechanics II](#)
- or
- [ENGR 2302 - Dynamics](#)
-
- [MEEN 2332 - Mechanics III](#)
- or
- [ENGR 2332 - Mechanics of Materials](#)

Additional courses, 9 hours

Chosen from the following:

- [MEEN 3100 - Manufacturing Processes](#)
- [MEEN 3110 - Thermodynamics II](#)
- [MEEN 3120 - Fluid Mechanics](#)
- [MEEN 3130 - Machine Elements](#)
- [MEEN 3210 - Heat Transfer](#)
- [MEEN 3230 - System Dynamics and Control](#)
- [MEEN 3240 - Mechanical and Energy Engineering Laboratory I](#)
- [MEEN 3242 - Mechanical and Energy Engineering Laboratory II](#)
- [MEEN 4110 - Alternative Energy Sources](#)
- [MEEN 4140 - Finite Element Analysis](#)
- Or other 3000- or 4000-level MEEN courses with the approval of MEE undergraduate advisor

Biological Sciences Minor

The minor requires a minimum of 18 hours with at least 6 advanced BIOL hours. Courses in the minor must be at least 3 hours.

Satisfactory completion of

- [BIOL 1710 - Biology for Science Majors I](#) or
- [BIOL 1711 - Honors Biology for Science Majors I](#)
- and
- [BIOL 1720 - Biology for Science Majors II](#) or
- [BIOL 1722 - Honors Biology for Science Majors II](#)
- and
- [BIOL 1760 - Biology for Science Majors Laboratory](#) or
- [BIOL 1761 - Honors Biology for Science Majors Laboratory](#)
-
- [BIOL 2041 - Microbiology](#) and
- [BIOL 2042 - Microbiology Laboratory](#)
- or
- [BIOL 2140 - Principles of Ecology](#)
- or
- [BIOL 2241 - Biology of Higher Plants](#)
- or
- [BIOL 2251 - Biodiversity and Conservation of Animals](#)
-
- and at least two upper-level BIOL courses, one of which must include a laboratory.

Notes

- The following courses may not be used toward a minor in biology: [BIOL 3030](#), [BIOL 3500](#), [BIOL 4080](#), [BIOL 4160/BIOL 4170](#), [BIOL 4180/BIOL 4190](#), [BIOL 4800](#), [BIOL 4805](#), [BIOL 4850](#), [BIOL 4900](#), [BIOL 4910](#), [BIOL 4920](#), [BIOL 4940](#), [BIOL 4950](#) and [BIOL 4951](#).
- Advanced electives in the minor should be selected in consultation with an advisor in the Department of Biological Sciences.
- Students must meet all prerequisites for courses before enrolling.