



Bachelor of Science

# MECHANICAL ENGINEERING Nuclear Power Track

Degree Map | 2019-2020

	YOUR CLASS SCHEDULE	ACADEMIC ADVISING	ENRICHING EXPERIENCES	LIFELONG SUCCESS
Freshman	<ul style="list-style-type: none"> <li>Focus on General Education, Math, and Science courses</li> <li>Enroll in 16 and 17 credit hours in Fall and Spring semesters, respectively</li> </ul>	<ul style="list-style-type: none"> <li>Participate in New Student Orientation</li> <li>Meet with your Academic Advising Center Freshman Advisor before registration</li> <li>Ask your Advisor about the recommended course sequencing for your degree plan</li> </ul>	<p><b>Prioritize Your Wellness</b></p> <ul style="list-style-type: none"> <li>Participate in campus recreation</li> <li>Attend Financial Literacy seminars</li> <li>Form healthy study habits</li> </ul> <p><b>Build Your Community</b></p> <ul style="list-style-type: none"> <li>Use FalconLink &amp; attend Club Day</li> <li>Volunteer</li> <li>Attend campus events</li> <li>Explore student chapters of professional societies: ASME, SAE, ANS, SWE</li> </ul> <p><b>Explore Your World</b></p> <ul style="list-style-type: none"> <li>Attend an athletics event, musical performance, or visit the art gallery</li> </ul>	<p><b>Build Your Brand</b></p> <ul style="list-style-type: none"> <li>Draft your resume</li> <li>Register for the Job Board</li> <li>Seek freshman research opportunities</li> </ul> <p><b>Craft Your Future</b></p> <ul style="list-style-type: none"> <li>Explore career options</li> <li>Investigate industrial tracks in mechanical engineering: nuclear power and petroleum</li> <li>Have coffee with a faculty member</li> <li>Seek summer internship opportunities</li> </ul>
Sophomore	<ul style="list-style-type: none"> <li>Complete basic math and science courses</li> <li>Start core engineering courses</li> <li>Enroll in 17 and 15 credit hours in Fall and Spring semesters, respectively</li> </ul>	<ul style="list-style-type: none"> <li>Meet with your Academic Advising Center Freshman Advisor before registration</li> <li>Verify course sequencing with your academic advisor</li> </ul>	<ul style="list-style-type: none"> <li>Actively participate in the professional society of your choice</li> </ul> <p><b>Prioritize Your Wellness</b></p> <ul style="list-style-type: none"> <li>Enjoy outdoor spaces on campus</li> </ul> <p><b>Build Your Community</b></p> <ul style="list-style-type: none"> <li>Join an organization</li> <li>Explore campus leadership (SGA, Orientation Leader, Resident Asst.)</li> <li>Participate in a professional society</li> </ul> <p><b>Explore Your World</b></p> <ul style="list-style-type: none"> <li>Consider study abroad</li> <li>Attend a lecture series</li> </ul>	<p><b>Build Your Brand</b></p> <ul style="list-style-type: none"> <li>Update your resume</li> <li>Join LinkedIn</li> <li>Consider student employment</li> </ul> <p><b>Craft Your Future</b></p> <ul style="list-style-type: none"> <li>Participate in mock interviews</li> <li>Explore professional licensing of engineers</li> <li>Attend an internship/career fair</li> <li>Continue summer internship program</li> </ul>
Junior	<ul style="list-style-type: none"> <li>Complete core engineering courses</li> <li>Start mechanical engineering courses</li> <li>If completing an industrial track, begin track courses</li> <li>Enroll in 17 and 15 credit hours in Fall and Spring semesters, respectively</li> </ul>	<ul style="list-style-type: none"> <li>Meet with your engineering academic advisor before registration</li> <li>Verify course sequencing with your engineering academic advisor</li> </ul>	<p><b>Prioritize Your Wellness</b></p> <ul style="list-style-type: none"> <li>Attend a health fair</li> </ul> <p><b>Build Your Community</b></p> <ul style="list-style-type: none"> <li>Run for organization officer role</li> <li>Apply to be a Falcon Ambassador</li> </ul> <p><b>Explore Your World</b></p> <ul style="list-style-type: none"> <li>Consider study abroad</li> <li>Participate in service learning</li> </ul>	<p><b>Build Your Brand</b></p> <ul style="list-style-type: none"> <li>Update your resume</li> <li>Attend workshops on job hunting and interviewing</li> <li>Conduct research with faculty</li> </ul> <p><b>Craft Your Future</b></p> <ul style="list-style-type: none"> <li>Commit to preparing for the Fundamentals of Engineering Examination in the semester prior to graduation</li> <li>Continue with summer internship program</li> </ul>
Senior	<ul style="list-style-type: none"> <li>Complete mechanical engineering courses</li> <li>Complete industrial track courses</li> <li>Enroll in 14 and 15 credit hours in Fall and Spring semesters, respectively</li> </ul>	<ul style="list-style-type: none"> <li>Meet with your engineering academic advisor before registration</li> <li>Finalize course selections for spring graduation</li> </ul>	<p><b>Prioritize Your Wellness</b></p> <ul style="list-style-type: none"> <li>Attend financial literacy seminars</li> </ul> <p><b>Build Your Community</b></p> <ul style="list-style-type: none"> <li>Attend your ring ceremony</li> <li>Join Alumni Association upon graduation</li> </ul> <p><b>Explore Your World</b></p> <ul style="list-style-type: none"> <li>Consider study abroad (summer prior to senior year)</li> </ul>	<p><b>Build Your Brand</b></p> <ul style="list-style-type: none"> <li>Update your resume</li> <li>Present research</li> </ul> <p><b>Craft Your Future</b></p> <ul style="list-style-type: none"> <li>Prepare for the Fundamentals of Engineering Examination in the spring semester</li> <li>Attend career fairs</li> <li>Apply for full time jobs</li> </ul>

UTPB students will graduate with these skills:

- Leadership
- Problem-solving
- Communication
- Engineering Design
- Social Responsibility
- Confidence
- Global Awareness
- Teamwork
- Critical Thinking

Career opportunities:

- Design Engineer
- Technical Sales
- Project Manager
- Manufacturing
- HVAC Design
- Process Control



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# MECHANICAL ENGINEERING

## Nuclear Power Track

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### B.S. MECHANICAL ENGINEERING REQUIREMENTS – Nuclear Power Track

#### Semester 1

ENGL 1301 English Composition I  
HIST 1301 U.S. History to 1877  
MATH 2413 Calculus I  
CHEM 1311 General Chemistry I  
CHEM 1111 General Chemistry I lab  
ENGR 1204 Engineering Graphics

16 hours

#### Semester 2

ENGL 1302 English Composition II  
HIST 1302 U.S. History Since 1877  
COMM 1315 Introduction to Public Speaking  
MATH 2414 Calculus II  
PHYS 2325 University Physics I  
PHYS 2125 University Physics I Lab

17 hours

#### Semester 3

PLSC 2305 American National Politics  
Creative Arts Course  
MATH 2415 Calculus III  
PHYS 2326 University Physics II  
PHYS 2126 University Physics II Lab  
ENGR 2301 Engr. Mechanics: Statics

17 hours

#### Semester 4

MATH 3301 Statistics  
MATH 3320 Differential Equations  
ENGR 3303 Introduction to Materials Science  
ENGR 2302 Engr. Mechanics: Dynamics  
ENGR 2305 Fund. of Circuit Analysis

15 hours

#### Semester 5 (Junior semester 1)

ENGR 3332 Mechanics of Materials  
ENGR 3375 Intro. to Thermodynamics  
ENGR 3354 Intro. to Fluid Mechanics  
MENG 3206 Mechanical Engr. Lab  
NENG 3301 Intro. to Nuclear Power Sys.  
PHYS 3310 Intro. to Nuclear Physics

17 hours

#### Semester 6 (Junior semester 2)

MENG 3348 Comp.-Aided ME Design  
MENG 3351 Heat Transfer  
MENG 3364 Mechanical Design I  
MENG 3376 Thermodynamics II  
NENG 4331 Radiation & Radiation Protection

15 hours

#### Semester 7

ENGR 3390 Engineering Programming  
MENG 4205 T/F and Mech. Sys. Lab  
NENG 4311 Rad. Mat'l's. & Waste Mgmt.  
NENG 4321 Nuclear Reactor Engineering  
Social and Behavioral Science Course

14 hours

#### Semester 8

MENG 3356 Fluid Mechanics II  
MENG 4478 Senior Design  
NENG 4211 Nuclear Engineering Laboratory  
Language, Philosophy and Culture Course  
PLSC 2306 State and Local Politics

15 hours