



MECHANICAL ENGINEERING GRAD TRACK PROGRAM



WHAT IS GRAD TRACK?

- ▶ Get your bachelor's degree while working toward a (non-thesis) master's degree or PhD Degree
- ▶ 9 credit hours overlap for MS or 12 for PhD
- ▶ Can complete MS degree in one additional year

ELIGIBILITY

- ▶ ME major
- ▶ Complete 75 credit hours
- ▶ 3.5 minimum cumulative GPA

HOW DOES IT WORK?

- ▶ Submit application to ME Dept. after 75 credit hours
- ▶ Start taking grad courses upon department approval and after completing 90 credit hours
- ▶ Apply to grad school in first (fall or spring) semester of senior year
- ▶ Admission to grad school after BS requirements met
- ▶ Complete MS non-thesis or PhD degree requirements



ME GRAD TRACK APPLICATION

THE PROCESS

- ▶ Student applies for the Grad Track option in the junior year (completed at least 75 credit hours with GPA of 3.5 or higher)
- ▶ After the application is approved and have completed at least 90 credit hours, the students can start taking the graduate courses electives for the BS degree requirement. For the graduate courses to be counted for the MS or PhD degree later, The student must get B or above for the courses.
- ▶ The student applies to Toulouse Graduate School within the first semester of the senior year. Once the student satisfies all coursework for BS degree they will be fully admitted to the MS or PhD program.
- ▶ The students must enroll in graduate school in the long semester after finishing their BS degree and should take the remaining graduate courses in the following year(s) to complete his/her MEE-MS, MSET-MS, MEE-PhD degree. If the student did not enroll in graduate school in the long semester after finishing their BS degree, those graduate course credit hours will not be counted anymore for the MS degree even if the student comes back for graduate school in the future.
- ▶ Students in the BS-to-MS grad track option can apply to transfer to the BS-to-PhD grad track option any time with departmental approval.
- ▶ Once admitted to the PhD program, the student will have higher priority for funding (research and teaching assistantships) to support PhD study.

APPLY

BS to MS Program BS to PhD Program

- ▶ Fill the following part of this form.
- ▶ Attach a copy of unofficial UNT transcripts
- ▶ Attach two recommendation letters from ME faculty members
- ▶ Submit the signed application form, transcripts, recommendation letters to ME office.

Name:	Family Name	First	Middle	Student ID#
Address:				Telephone:
City:	State:	Zip	Country	
Current UNT GPA:	Email:			
Print Name:	Signature:		Date:	
<u>ME Office Use only</u>	_____ Admission _____ Conditional Admission _____ Denied Admission			
Comments:				
Grad-Track Advisor Signature:				Date:



Submit Application In Person:
Callie Wooten - Suite F101



Submit Application Via Email:
Callie.Wooten@unt.edu

Students in the grad track option must register for three graduate courses. These three courses will replace nine (9) hours of technical electives currently required in the ME undergraduate program.

MEEN ELECTIVES

- MEEN 5300 - Advanced Thermodynamics (fall semester of year four)
- MEEN 5110 - Alternative Energy Sources (spring semester of year four)
- MEEN 5315 - Nanoscale Energy (spring semester of year four)

The above courses substitute for the following requirements of the bachelor's degree: The corresponding number of hours of technical and/or energy electives

MEET ELECTIVES

- MSET 5020 - Design of Experiments
- MSET 5040 - Analytical Methods in Engineering Technology

Plus one course selected from:

- MSET 5030 - Product Design and Development
- MSET 5100 - Nontraditional Manufacturing Processes
- MSET 5120 - Computer-Integrated Manufacturing
- MSET 5150 - Applications of Electron Microscopy and Failure Analysis
- MSET 5160 - Creep and Fatigue in Engineering Design and Systems Performance
- MSET 5800 - Studies in Engineering Technology
- MSET 5900 - Special Problems

Technical course substitution (with approval of major professor)

CNET ELECTIVES

Students in the grad track option must register for three graduate courses:

- MGMT 5240 - Project Management
- MSET 5800 - Studies in Engineering Technology

Plus one elective course selected from the following with the approval of the advisor:

- MSET 5200 - Advanced Construction Scheduling
- MSET 5220 - Building Information Modeling
- MSET 5230 - Risk Management in Construction
- MSET 5900 - Special Problems

The three graduate courses will replace CNET 4180, CNET 4620, and one technical elective.

Students may choose up to 12 hours from the following list of courses.

MEEN PHD ELECTIVES

1. Materials and Manufacturing (Material Reliability and Manufacturing)

Required core courses

MEEN 5410 - Advanced Solid Mechanics

MEEN 5520 - Advanced Manufacturing (or Bioproducts or Automotive Manufacturing)

MEEN 5800 - Topics in Mechanical and Energy Engineering: Experimental Design

MTSE 5100 - Fundamental Concepts of Materials Science or MEEN 5440 Finite Element Analysis

Electives

MEEN 5440 - Finite Element Analysis

MEEN 5152 - Mechanics of Composites and Foams for Lightweight Structures

MEEN 5420 - Continuum Mechanics

MTSE 5020 - Mechanical Properties of Materials

MTSE 5400 - Advanced Polymer Physics and Chemistry

MTSE 5550 - Materials and Mechanics for MEMS Devices

MTSE 5710 - Computational Materials Science

MTSE 6110 - Applied Fracture Mechanics

2. Mechanical Systems and Design

Required core courses

MEEN 5140 - Advanced Mathematical Methods for Engineers

MEEN 5410 - Advanced Solid Mechanics

MEEN 5600 - Feedback Control of Dynamic Systems

MEEN 5640 - Applied Engineering Vibrations* (Cross listed as MFET 5140)

Electives

MEEN 5440 - Finite Element Analysis

MEEN 5800 - Topics in Mechanical and Energy Engineering: Experimental Design

MEEN 5152 - Mechanics of Composites and Foams for Lightweight Structures

MEEN 5610 - Sensors & Actuators

MEEN 5800 - Topics in Mechanical and Energy Engineering: Geothermal Heat Pumps

MEEN 6200 - Theory of Elasticity

MTSE 6110 - Applied Fracture Mechanics

3. Modeling and Simulation

Required core courses

MEEN 5140 - Advanced Mathematical Methods for Engineers
MEEN 5440 - Finite Element Analysis
MEEN 5220 - Computational Fluid Dynamics and Heat Transfer*
MEEN 6000 - Advanced Numerical Methods (or MTSE 5710 or CSCE 5230)

Electives

MEEN 5311 - Convective Heat Transfer II*
MEEN 5340 - Advanced Fluid Mechanics*
MEEN 5420 - Continuum Mechanics**
MEEN 5410 - Advance Solid Mechanics
MEEN 5315 - Nanoscale Energy Transport
CSCE 5160 - Parallel Processing and Algorithms
CSCE 5230 - Methods of Numerical Computation
CSCE 5420 - Software Development
CSCE 5810 - Biocomputing
MTSE 5710 - Computational Materials Science**

Note: Every student under the Modeling and Simulation track will pick from electives a group of courses either in the area of mechanics (**) or in the area of thermal-fluid sciences (*), or both.

4. Thermal-Fluid Systems

Required core courses

MEEN 5140 - Advanced Mathematical Methods for Engineers
MEEN 5300 - Advanced Thermodynamics
MEEN 5311 - Convective Heat Transfer II
MEEN 5340 - Advanced Fluid Mechanics

Electives

MEEN 5000 - Energy: The Fundamentals
MEEN 5110 - Alternative Energy
MEEN 5200 - Principles of HVAC
MEEN 5220 - Computational Fluid Dynamics and Heat Transfer
MEEN 5310 - Conduction and Radiation Heat Transfer
MEEN 5315 - Nanoscale Energy Transport
MEEN 5330 - Combustion Science and Engineering
MEEN 5800 - Topics in Mechanical and Energy Engineering: Geothermal Heat Pumps

5. Energy

Required core courses

MEEN 5000 - Energy: The Fundamentals
MEEN 5110 - Alternative Energy
MEEN 5800 - Energy Harvesting
MEEN 5140 - Advanced Mathematical Methods for Engineers

Electives

MEEN 5112 - Nuclear Energy
MEEN 5150 - Thermal Energy Storage Systems and Applications
MEEN 5200 - Principles of HVAC
MEEN 5240 - Energy: A World Perspective
MEEN 5310 - Conduction and Radiation Heat Transfer
MEEN 5330 - Combustion Science and Engineering
MEEN 5332 - Air Pollution Control Engineering
MEEN 5800 - Topics in Mechanical and Energy Engineering: Geothermal Heat Pumps
MEEN 5210 - Solar Energy
BIOL 6341 - Advanced Environmental Impact Assessment
EENG 5940 - Renewable Electrical Power Systems