

# MECHANICAL ENGINEERING

## Associate of Science degree



### Program and Career Description:

Most careers in engineering require a bachelor's degree or higher so the Associate of Science in Mechanical Engineering is designed for students wanting to complete the first two years of the bachelor's degree in a community college setting. Our students work closely with science and math faculty and have ample access to science and computer labs. Below are a few examples of career and salary estimates for engineering. Please note that this pathway requires 67 credit hours and recommends one summer semester. Students will need to meet the requirements for MATH 1910 before their freshman fall semester.

### How is the Job Market?

Check out [www.jobs4tn.gov](http://www.jobs4tn.gov) website for information about job descriptions, education requirements and abilities, and supply and demand for these careers. For additional information from a national perspective, go to Bureau of Labor Statistics, U. S. Department of Labor website at [www.bls.gov](http://www.bls.gov). Visit the [Occupational Outlook Handbook](#) on this website. Salaries are not guaranteed.

### Transfer Options

This program is a Tennessee Transfer Pathway (TTP) major. A student who completes the associates degree in this major is guaranteed that all required community college courses will be accepted in this major at the transfer institution. To see which four-year institutions offer this TTP major and guarantees a seamless transfer, visit the Tennessee Transfer Pathway website at [www.tntransferpathway.org](http://www.tntransferpathway.org).

Transfer agreements exist between other private and non-TN public institutions. These agreements are available at [www.columbiastate.edu/transfer-information](http://www.columbiastate.edu/transfer-information).

### Requirements for Graduation include:

- earning 25% of total program credits in residence at Columbia State.
- earn a cumulative GPA of 2.0 or higher.
- taking the Exit Exam.

For more information contact:  
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or  
**Bobbie West** at  
[bwest14@columbiastate.edu](mailto:bwest14@columbiastate.edu) or 931.540.2703  
or  
Science, Technology & Math Division Office  
at 931.540.2710 or [stm@columbiastate.edu](mailto:stm@columbiastate.edu)

Student ID: \_\_\_\_\_  
 Student Name: \_\_\_\_\_  
 Adviser Name: \_\_\_\_\_

Catalog: 2020-2021 Catalog and Student Handbook  
 Program: Mechanical Engineering, A.S.  
 Minimum Credits Required: \_\_\_\_\_

## Mechanical Engineering, A.S.

Major in Tennessee Transfer Pathway with Emphasis in Mechanical Engineering (A.S.)

### Sample Academic Plan - Total Credit Hours: 67

Program Requirements - Students may be required to take additional Learning Support courses. Courses cannot be used more than once to satisfy program requirements. Students requiring MATH 1130 and MATH 1730 should take these courses prior to beginning the following pathway to ensure timely completion.

### First Year - Fall Semester - Credit Hours: 16

Course Name	Credits:	Term Taken	Grade	Gen Ed
ENGL 1010 - English Composition I	Credits: 3			
MATH 1910 - Calculus I	Credits: 4			
CHEM 1110 - General Chemistry I	Credits: 4			
PHYS 2110 - Calculus-Based Physics I	Credits: 4			
COLS 101 - Columbia State College Success	Credits: 1			

### First Year - Spring Semester - Credit Hours: 17

Course Name	Credits:	Term Taken	Grade	Gen Ed
ENGL 1020 - English Composition II	Credits: 3			
MATH 1920 - Calculus II	Credits: 4			
PHYS 2120 - Calculus-Based Physics II	Credits: 4			
<sup>1</sup> General Education - History Requirement **	Credits: 3			
<sup>2</sup> General Education - Humanities/Fine Arts Requirement	Credits: 3			

### Second Year - Fall Semester - Credit Hours: 16

Course Name	Credits:	Term Taken	Grade	Gen Ed
MATH 2110 - Calculus III	Credits: 4			
ENGR 2110 - Statics	Credits: 3			
COMM 2025 - Fundamentals of Communication **** OR COMM 2055 Argumentation and Debate****	Credits: 3			
<sup>1</sup> General Education - History Requirement **	Credits: 3			
<sup>5</sup> General Education - Social/Behavioral Science Requirement *	Credits: 3			

### Second Year - Spring Semester - Credit Hours: 18

Course Name	Credits:	Term Taken	Grade	Gen Ed
MATH 2010 - Introduction to Linear Algebra ***	Credits: 3			
MATH 2120 - Differential Equations	Credits: 3			
ENGR 2120 - Dynamics	Credits: 3			
<sup>2</sup> General Education - Humanities/Fine Arts Requirement	Credits: 3			
<sup>2</sup> General Education - Literature Requirement	Credits: 3			
<sup>5</sup> General Education - Social/Behavioral Science Requirement *	Credits: 3			

### General Education Requirements (Only When Option Noted Above)

<sup>1</sup>**History Requirement** - Select from HIST 2010, HIST 2020, HIST 2030, HIST 2310, HIST 2320.

<sup>2</sup>**Humanities/Fine Arts Requirement** - Select from ART 1035, ART 2000, ART 2020, ENGL 2160, ENGL 2860, HUM 1010, HUM 1020, MUS 1030, PHIL 1030, PHIL 1040, PHIL 2200, THEA 1030. **Literature Options:** ENGL 2055, ENGL 2130, ENGL 2235, ENGL 2310, ENGL 2320.

<sup>3</sup>**Mathematics Requirement** - Select from MATH 1010, MATH 1130, MATH 1530, MATH 1630, MATH 1710, MATH 1720, MATH 1730, MATH 1830, MATH 1910.

<sup>4</sup>**Natural Sciences Requirement** - Select from ASTR 1030, BIOL 1010, BIOL 1020, BIOL 1080 (must pair with non-biology course except for BIOL 2010 or BIOL 2020), BIOL 1110, BIOL 1120, BIOL 2010, BIOL 2020, CHEM 1110, CHEM 1120, ESCI 1010, ESCI 1020, PHYS 2010, PHYS 2020, PHYS 2110, PHYS 2120, PSCI 1030.

<sup>5</sup>**Social/Behavioral Science Requirement** - Select from ANTH 1230, ANTH 1430, COMM 1010, ECON 2100, ECON 2200, GEOG 2010, PHED 2120, POLS 1010, POLS 1030, POLS 2025, POLS 2035, PSYC 1030, PSYC 2130, SOCI 1010, SOCI 1040, SOCI 2010.

### Note(s):

\*NOTE: Students transferring to UT Knoxville or University of Memphis should take ECON 2100 as one of their Social/Behavioral Science general education courses.

\*\*NOTE: Students transferring to UT Chattanooga will need to complete at least one course in non-Western Cultures.

\*\*\*NOTE: Students transferring to UT Chattanooga will need to take both MATH 2010 Introduction to Linear Algebra and Introductory Statistics course. MATH 2010 Introduction to Linear Algebra is not required at U of Memphis and UT Knoxville and U of Memphis does not require MATH 2050 Calculus Based Probability and Statistics (TN eCampus course).

\*\*\*\*NOTE: UT Chattanooga does not require a speech course, so students may complete another general education requirement outlined in the department's curriculum.

NOTES: Students are strongly encouraged to complete a course in Mechanics of Materials, also known as Strength of Materials, before transferring to a university. Courses in engineering technology do not fulfill any of the requirements for the Area of Emphasis in Mechanical Engineering. Although it is possible to complete the B.S. Degree in Mechanical Engineering in four semesters after earning the associate's degree, students typically need five or six semesters to complete requirements

NOTE: Mechatronics-The Mechanical Engineering TTP also fulfills the preparatory coursework for the BS in Mechatronics at MTSU. TTU has a Mechatronics Concentration in Electrical Engineering; TTU does not have a standalone Mechatronics BS.

Check [www.intransferpathway.org](http://www.intransferpathway.org) to see which four-year institutions offer this TTP major. Students should meet with their assigned advisor to determine courses required for the university chosen.

Students and advisors should run a degree audit from myChargerNet each semester to confirm classes are applicable to the program of study.

### For more information contact:

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