

Mechanical/ Civil/ Aeronautical/ Industrial/ Materials Science Engineering

AS-T Other Engineer/MRP

Complete basic background studies for transfer to a bachelor's degree program in engineering disciplines. Careers may be found in research, development, design, operations management, teaching, sales and consulting.

For a roadmap that identifies the preferred sequencing of courses and other specific recommendations from faculty, please see the corresponding program map(s):

- [Mechanical/ Civil/ Aeronautical/ Industrial/ Materials Science Engineering AS-T Other Engineer/MRP \(2 year\)](https://lowercolumbia.edu/program-maps/stem/AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering-2-year) (lowercolumbia.edu/program-maps/stem/AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering-2-year)
- [Mechanical/ Civil/ Aeronautical/ Industrial/ Materials Science Engineering AS-T Other Engineer/MRP \(3 year\)](https://lowercolumbia.edu/program-maps/stem/AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering-3-year) (lowercolumbia.edu/program-maps/stem/AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering-3-year)

Degree Requirements

Total credits required to earn this degree: 90 with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area

LCC students must meet distribution requirements for bachelor degrees, associate degrees, and specific certificates. See [Diversity and Distribution Lists](https://lowercolumbia.edu/publications/catalog/distribution-lists/) (lowercolumbia.edu/publications/catalog/distribution-lists/) for more information.

General Education Requirements

- **Communications:**

5 credits - ENGL& 101 English Comp I.

- **Quantitative / Symbolic Reasoning Skills:**

25 credits – MATH& 151* Calculus I, MATH& 152* Calculus II, MATH& 153* Calculus III, MATH 220 Linear Algebra **AND** MATH 240 Differential Equations.

- **Humanities / Social Sciences:**

15 credits – minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science from the *Distribution List*. Economics recommended.

- **Diversity:**

5 credits – from the *Diversity Course List*. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

- **Electives:**

5 credits minimum – select electives appropriate for your intended major and intended baccalaureate institution.

Program Requirements

Pre-Major Requirements (40 credits)

Course Code	Course Title	Number of Credits
CHEM& 161*	General Chemistry w/Lab I	5
CHEM& 162*	General Chemistry w/Lab II	5
ENGR& 214	Statics	5
ENGR& 215	Dynamics	5
ENGR& 225	Mechanics of Materials	5
PHYS& 221*	Engr Physics I w/Lab	5
PHYS& 222*	Engr Physics II w/Lab	5
PHYS& 223*	Engr Physics III w/Lab	5

Electives

Course Code	Course Title	Number of Credits
CS 170	Fundamentals of Computer Programming	5
CHEM& 163*	General Chemistry w/Lab III	5
ENGL& 235	Technical Writing	5
ENGR& 106	Engineering Problems	5
ENGR& 121*	Engineering Graphics I	3
ENGR& 122*	Engineering Graphics II	3
ENGR& 123*	Engineering Graphics III	3
ENGR& 204	Electrical Circuits	6
ENGR& 224	Thermodynamics	5
MATH& 254*	Calculus IV	5

Program Outcomes

Students completing this program should acquire the following skills and abilities:

- Demonstrate the ability to use foundational knowledge in mathematics, physics, chemistry, and biology.
- Design and conduct experiments.

- Make measurements, analyze data, and interpret results.
- Problem solving, team, self-assessment and lifelong learning skills.
- Communicate effectively.

Notes

Revised December 2020 (effective Fall 2021)

*It is recommended that sequence courses be completed at one institution.

For this degree, specific grade requirements vary from course to course and among transfer institutions. The student will need to check with transfer advisors. Some baccalaureate institutions require physics with calculus. It is your responsibility to check your baccalaureate institution's specific major requirements the year prior to transferring.

Program planning is based on information available at the time of preparation. It is the student's responsibility to meet with their LCC advisor *and* with the college to which they plan to transfer for specific requirements. Consult the LCC catalog for LCC graduation requirements.

Most four-year universities require one year of a single foreign language as a graduation requirement.