

# Program map for Mechanical/ Civil/ Aeronautical/ Industrial/ Materials Science Engineering AS-T Other Engineer/MRP (2 year)

2024-25



[Return to Science, Technology, Engineering and Math \(STEM\) Program Maps \(lowercolumbia.edu/program-maps/stem\)](https://lowercolumbia.edu/program-maps/stem)

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.

[View this program in the LCC Catalog \(lowercolumbia.edu/publications/catalog/programs/STEM-AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering\)](https://lowercolumbia.edu/publications/catalog/programs/STEM-AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering)

## See also

- [Degree Requirements for Science, Technology, Engineering and Math \(STEM\) programs \(lowercolumbia.edu/programs/stem\)](https://lowercolumbia.edu/programs/stem)
- [Course descriptions in the LCC Catalog \(lowercolumbia.edu/publications/catalog/courses\)](https://lowercolumbia.edu/publications/catalog/courses)
- [Distribution lists in the LCC Catalog \(lowercolumbia.edu/publications/catalog/distribution-lists\)](https://lowercolumbia.edu/publications/catalog/distribution-lists)

**Important:** Many course sequences only begin in fall quarter. Check with your program advisor.

## By Quarter Overview

### First Quarter

- COLL 101: College Success 101 (2 credits)
- PHYS& 221: Engineering Physics I w/ Lab (5 credits)
- ENGR 106: Engineering Problems (5 credits)
  - Prerequisite is C or better in MATH 098 or placement into MATH& 141
- MATH& 151: Calculus I (5 credits)

## Second Quarter

- PHYS& 222: Engineering Physics II w/ Lab (5 credits)
- MATH& 152: Calculus II (5 credits)
- ENGL& 101: English Comp I (5 credits)
- Choose one:
  - ART& 100: Art Appreciation (5 credits)
  - CMST 250: Intercultural Communication (5 credits)
  - HIST& 126: World Civilization I (5 credits)

## Third Quarter

- MATH& 153: Calculus III (5 credits)
- PHYS& 223: Engineering Physics III w/ Lab (5 credits)
- CS 170: Computer Programming (5 credits)
- ENGR& 121: Engineering Graphics I (3 credits)

## Fourth Quarter

- MATH& 254: Calculus IV (5 credits)
- ENGR& 214: Statics (5 credits)
- CHEM& 161: General Chemistry w/ Lab I (5 credits)
- ENGR& 122: Engineering Graphics II (3 credits)

Apply for Financial Aid at transfer institution

## Fifth Quarter

- MATH 240: Differential Equations (5 credits)
- ENGR& 215: Dynamics (5 credits)
- Choose one:
  - ECON& 201: Micro Economics (5 credits)
  - ECON& 202: Macro Economics (5 credits)
- CHEM& 162: General Chemistry w/ Lab II (5 credits)

[Apply for Graduation \(lowercolumbia.edu/graduation\)](http://lowercolumbia.edu/graduation)

## Sixth Quarter

- MATH 220: Linear Algebra (5 credits)
- ENGR& 225: Mechanics of Materials (5 credits)
- Choose one:
  - ANTH& 100: Survey of Anthropology (5 credits)
  - ANTH& 206: Cultural Anthropology (5 credits)
  - HIST& 128: Western Civ III (5 credits)
  - HIST& 215: Women in US History (5 credits)
- ENGR& 123: Engineering Graphics III (3 credits)

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## Detailed Class Sequence

### 1. College Success

COLL 101: College Success 101 (2 credits)

### 2. Pre-Major Requirement

PHYS& 221: Engineering Physics I w/ Lab (5 credits)

- *Prerequisites: Completion of or concurrent enrollment in MATH& 151 or instructor permission.*

### 3. Elective

ENGR 106: Engineering Problems (5 credits)

- Prerequisite is C or better in MATH 098 or placement into MATH& 141

### 4. Math Requirement

MATH& 151: Calculus I (5 credits)

- *Prerequisites: MATH& 142 with a grade of C or better.*

### 5. Pre-Major Requirement

PHYS& 221: Engineering Physics I w/ Lab (5 credits)

- *Prerequisites: Completion of or concurrent enrollment in MATH& 151 or instructor permission.*

### 6. Math Requirement

MATH& 152: Calculus II (5 credits)

- *Prerequisite: MATH& 151 with a grade of C or better.*

### 7. Communications Requirement

ENGL& 101: English Comp I (5 credits)

- *Prerequisites: College level reading and writing skills or completion of ENGL 099 or TECH 105 with a grade of C or better.*

### 8. Humanities / Diversity Requirement

Choose one of these recommended courses:

- ART& 100: Art Appreciation (5 credits)
- CMST 250: Intercultural Communication (5 credits)
  - *Fulfills [DIVR] requirement at WSU*
- HIST& 126: World Civilization I (5 credits)
  - *Fulfills [DIVR] requirement at WSU*

## 9. Math Requirement

MATH& 153: Calculus III (5 credits)

- *Prerequisite: MATH& 152 with a grade of C or better.*

## 10. Pre-Major Requirement

PHYS& 223: Engineering Physics III w/ Lab (5 credits)

- *Prerequisites: PHYS& 222 or instructor permission.*

## 11. Pre-Major Requirement

CS 170: Computer Programming (5 credits)

- *Prerequisites: MATH 088 or MATH 097 with a grade of C or better and knowledge of Windows is required; or instructor permission.*

## 12. Elective

ENGR& 121: Engineering Graphics I (3 credits)

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

## 13. Elective

MATH& 254: Calculus IV (5 credits)

- *Prerequisites: MATH& 153 with a grade of C or better.*
- *Required to transfer to WSUV at junior level*

## 14. Pre-Major Requirement

ENGR& 214: Statics (5 credits)

- *Prerequisites: MATH& 151 and either PHYS& 221 or ENGR 106.*

## 15. Pre-Major Requirement

CHEM& 161: General Chemistry w/ Lab I (5 credits)

- *Prerequisites: CHEM& 100 or high school chemistry and MATH 098.*

## 16. Elective

ENGR& 122: Engineering Graphics II (3 credits)

- *Prerequisite: ENGR& 121 or instructor permission.*
- *It is recommended that sequence courses be completed at one institution.*

## 17. Math Requirement

MATH 240: Differential Equations (5 credits)

- *Prerequisite: MATH& 254 with a grade of C or better.*

## 18. Pre-Major Requirement

ENGR& 215: Dynamics (5 credits)

- *Prerequisites: ENGR& 214, MATH& 152, and PHYS& 221, or instructor permission.*

## 19. Social Science Requirement

Choose one of these recommended courses:

- ECON& 201: Micro Economics (5 credits)
  - *Prerequisites: MATH 088 or TECH 088 or BUS 104 and ENGL& 101 or BUS 190.*
- ECON& 202: Macro Economics (5 credits)
  - *Prerequisite: ECON& 201 or instructor permission.*

## 20. Pre-Major Requirement

CHEM& 162: General Chemistry w/ Lab II (5 credits)

- *Prerequisites: CHEM& 161*

## 21. Math Requirement

MATH 220: Linear Algebra (5 credits)

- *Prerequisite: MATH& 152 with a grade of C or better.*

## 22. Pre-Major Requirement

ENGR& 225: Mechanics of Materials (5 credits)

- *Prerequisite: ENGR& 214, concurrent enrollment in MATH& 152, and*
- *PHYS& 222 or instructor permission.*

## 23. Social Science / Diversity Requirement

Choose one of these recommended courses:

- ANTH& 100: Survey of Anthropology (5 credits)
  - *Fulfills [DIVR] requirement at WSU*
- ANTH& 206: Cultural Anthropology (5 credits)
  - *Fulfills [DIVR] requirement at WSU*
- HIST& 128: Western Civ III (5 credits)
  - *Fulfills [ROOT] requirement at WSU*
- HIST& 215: Women in US History (5 credits)
  - *Fulfills [DIVR] requirement at WSU*

## 24. Elective

ENGR& 123: Engineering Graphics III (3 credits)

- *Prerequisite: ENGR& 121 and ENGR& 122 or instructor permission.*
- *Required to transfer to WSUV at junior level.*
- *It is recommended that sequence courses be completed at one institution.*