

Gettysburg College
Columbia University Pre-Combined Plan Curriculum Guide

Foundation Courses Required of All Majors

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|-------------------|---|
| Mathematics: | Math111, Math112, Math211 |
| Physics: | Phy111, 112, 211 sequence OR Phy109, 110 sequence (all include labs) |
| Chemistry: | Chem107 (includes lab) |
| Computer Science: | CS107 or CS111 |
| Economics: | Econ103 or Econ104 |
| College writing: | Eng101 or other FY writing |

Liberal Arts Curriculum must include **7 courses** from the Arts, Social Sciences, and Humanities.

Remarks:

- Overall GPA of 3.30 or higher and a pre-engineering GPA of 3.30 or higher are required. Additionally, the minimum grade for each pre-engineering science or math course must be a B (3.0) or better. Retaking courses for improved grade are allowed.
- Three favorable recommendations: one each from your institution's Combined Plan liaison (Engineering Dual-Degree Advisor), math instructor and science instructors.
- All foundational and major-specific prerequisite courses must be completed by end of spring of year applying.
- Demonstration of English language proficiency.
- Engineering major cannot be changed after admission to Columbia.

Additional Courses are required by the programs below.

Applied Mathematics or Applied Physics

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| Mathematics: | Math225 |
| Physics: | Phy111, 112, 211 instead of Phy109, 110 OR Phy109, 110 plus classical/quantum waves course |
| Biology: | Bio110 and Bio 111 are optional since Chem 107 is required |

Biomedical Engineering

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|-------------------------|--|
| Mathematics: | Math 212, 225 |
| Physics: | Phy111, 112, 211 instead of Phy109, 110 OR Phy109, 110 plus classical/quantum waves course |
| Chemistry: | Chem108 (includes lab) |
| Computer Science: | CS107 (want python) |
| Biology: | Bio110, Bio112 |
| Electrical Engineering: | Phy240 (or ELEN E1201 summer before or during) |

Chemical Engineering

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|-------------------|--|
| Mathematics: | M225 or Phy255 |
| Chemistry: | Chem108 (includes lab), Chem203 (includes lab) |
| Computer Science: | CS107 (want python) |

Civil Engineering

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|------------------------|--|
| Mathematics: | Math212 and M225 or Phy255 |
| Engineering Mechanics: | Phy319 (or ENME E3105 summer before or during) |
| Computer Science: | CS107 (Matlab/Python preferred) |
| Environmental Studies: | ES223 |

Computer Engineering

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| Mathematics: | Math212 and M225 or Phy255 |
| Electrical Engineering: | Phy240 (or ELEN E1201 summer before or during) |
| Computer Science: | (programming in JAVA required) CS201 (discrete math) |

Computer Science

Computer Science: (programming in JAVA required) CS201 (discrete math), CS216

Earth and Environmental Engineering

Mathematics: Math212 and M225 or Phy255

Probability and Statistics: Math107 (or W3600 may be taken at Columbia)

Chemistry: Chem108 (includes lab)

Science Elective (choose one): Chem203; Phy111,112, 211 sequence ; BIO110

Earth and Environmental Sciences/Engineering :

ES223 (or EESC W4001 may be taken at Columbia)

ES318 (or EESC V2100 may be taken at Columbia)

ES240 (or EAEE E2002 may be taken at Columbia)

Electrical Engineering

Mathematics: Math212 and M225 or Phy255

Physics: Phy111, 112, 211 instead of Phy109, 110
OR Phy109, 110 plus classical/quantum waves course

Electrical Engineering: Phy240 (or ELEN E1201 summer before or during)

Computer Science: CS111

Engineering Mechanics

Mathematics: M225

Physics: Phy319 (or ENME E3105 summer before or during)

IEOR: Engineering Management Systems, Engineering Management Systems, or Operations Research

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|-------------------|---|
| Mathematics: | Math212, Math225 (or Math UN2030 may be taken at Columbia, unless interested in Financial Engineering) |
| Computer Science: | CS111 (JAVA), CS112 as pre-req. for CS216 (JAVA preferred over C) |
| Economics: | Econ241 (statistics), Econ267 (finance or E2261 may be taken at Columbia, unless interested in Financial Engineering) |

Materials Science and Engineering

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|--------------|---|
| Mathematics: | M225 |
| Physics: | Phy111, 112, 211 instead of Phy109, 110 OR Phy109, 110 plus classical/quantum waves course |

Mechanical Engineering

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|-------------------------------|---|
| Mathematics: | M212 and M225 or Phy255 |
| Physics/Biology (choose one): | Phy111, 112, 211 instead of Phy109, 110; If taken Phy109,110, then choose Bio110 or Bio111 |
| Engineering Mechanics: | Phy319 (or ENME E3105 summer before or during) |
| Electrical Engineering: | Phy240 (or ELEN E1201 summer before or during) |