3-2 ENGINEERING SAMPLE COURSE SCHEDULE

Mathematics Major

Semester 1	Semester 2
Calculus 1[1] (MATH 135 or equivalent)	Calculus 2[2] (MATH 136 or equivalent)
Physics 1 (PHYS 115)	Physics 2 (PHYS 116)
Montserrat	Montserrat[3]
Common Area Requirement	English[4]

Semester 3	Semester 4
Multivariable Calculus (MATH 241)	Techniques of Programming (CSCI 131)
Algebraic Structures (MATH 243)	Linear Algebra (MATH 244)
Chemistry 1 (CHEM 181)	Common Area Requirement
Language 1	Language 2

Semester 5	Semester 6
Modern Algebra 1 (MATH 351)	Real and Abstract Analysis 1 (MATH 361)
Math Elective	Math Elective
Math Elective	Common Area Requirement
Common Area Requirement	Common Area Requirement
Economics [5]	

Math Electives

The five upper-level courses in mathematics must satisfy three of four breadth areas.
Two of the upper-level courses must form a linked sequence.

Additional Courses

Please note that an overload (5 courses) may be required some semesters. AP credits or summer courses can sometimes be applied to eliminate the need for overloads. Additional courses may be required for some engineering majors at Columbia. See the Pre-Combined Plan Curriculum Guide on Columbia's web page.

[1] This course requirement may be fulfilled with a score of 4 or 5 on the Calculus AB Advanced Placement exam or the completion of MATH 133.

[2] This course requirement may be fulfilled with the completion of MATH 134 or a score of 4 or 5 on the Calculus BC Advanced Placement exam.

[3] The full year of Montserrat may fulfill one common area requirement (CAR). It is important that students do not take Montserrat courses that only fulfill a math or natural science requirement.

[4] Columbia requires a course in composition. Students should take ENGL 100 that also fulfills the LIT CAR.

[5] Columbia requires a course in economics. Students should take ECON 100 that also fulfill one SOC SCI CAR.

Physics Major

Semester 1	Semester 2
Calculus 1[6] (MATH 135 or equivalent)	Calculus 2[7] (MATH 136 or equivalent)
Physics 1[8] (PHYS 115)	Physics 2 (PHYS 116)
Montserrat	Montserrat[9]
Common Area Requirement	English[10]

Semester 3	Semester 4
Multivariable Calculus (MATH 241)	Classical Mechanics (PHYS 342)
Modern Physics (PHYS 223)	Modern Physics Lab (PHYS 225)
Methods of Physics (PHYS 221)	Thermal Physics (PHYS 344)
Chemistry 1 (CHEM 181)	Common Area Requirement
	Common Area Requirement

Semester 5	Semester 6
Quantum Mechanics (PHYS 353)	Electromagnetic Theory (PHYS 351)
Physics Elective	Physics Elective
Techniques of Programming (CSCI 131)	Common Area Requirement
Language 1	Language 2
Economics [11]	

Physics Electives

One of the physics electives must be taken with a laboratory.

Additional Courses

Please note that an overload (5 courses) may be required some semesters. AP credits or summer courses can sometimes be applied to eliminate the need for overloads. Additional courses may be required for some engineering majors at Columbia. See the Pre-Combined Plan Curriculum Guide on Columbia's web page.

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[6] This course requirement may be fulfilled with a score of 4 or 5 on the Calculus AB Advanced Placement exam or the completion of MATH 133.

[7] This course requirement may be fulfilled with the completion of MATH 134 or a score of 4 or 5 on the Calculus BC Advanced Placement exam.

[8] This course requirement may be fulfilled with a Physics 2 or a Physics C Advanced Placement exam and an individual assessment by the Physics Department.

[9] The full year of Montserrat may fulfill one common area requirement (CAR). It is important that students do not take Montserrat courses that only fulfill a math or natural science requirement.

[10] Columbia requires a course in composition. Students should take ENGL 100 that also fulfills the LIT CAR.

[11] Columbia requires a course in economics. Students should take ECON 100 which also fulfills one SOC SCI CAR.

Computer Science Major

Semester 1	Semester 2
Calculus 1[12] (MATH 135 or equivalent)	Calculus 2[13] (MATH 136 or equivalent)
Physics 1 (PHYS 115)	Physics 2 (PHYS 116)
Montserrat	Montserrat[14]
Techniques of Programming[15] (CSCI 131)	Data Structures (CSCI 132)

Semester 3	Semester 4
Multivariable Calculus (MATH 241)	Programming Languages Design (CSCI 324)
Computer Systems (CSCI 226)	Discrete Structures (CSCI 135)[16]
Analysis of Algorithms (CSCI 235)	English[17]
Chemistry 1 (CHEM 181)	Common Area Requirement
Common Area Requirement	

Semester 5	Semester 6
Computer Science Ethics (CSCI 328)	Computer Science Elective
Computer Science Elective	Computer Science Elective
Common Area Requirement	Common Area Requirement
Economics [18]	Common Area Requirement
Language 1	Language 2

Additional Courses

Please note that an overload (5 courses) may be required some semesters. AP credits or summer courses can sometimes be applied to eliminate the need for overloads. Additional courses may be required for some engineering majors at Columbia. See the Pre-Combined Plan Curriculum Guide on Columbia's web page.

[12] This course requirement may be fulfilled with a score of 4 or 5 on the Calculus AB Advanced Placement exam or the completion of MATH 133.

[13] This course requirement may be fulfilled with the completion of MATH 134 or a score of 4 or 5 on the Calculus BC Advanced Placement exam.

[14] The full year of Montserrat may fulfill one common area requirement (CAR). It is important that students do not take Montserrat courses that only fulfill a math or natural science requirement.

[15] This course requirement may be fulfilled with a score of 4 or 5 on Computer Science A Advanced Placement exam.

[16] Algebraic Structures (MATH 243) may be substituted for Discrete Structures.

[17] Columbia requires a course in composition. Students should take ENGL 100 that also fulfills the LIT CAR.

[18] Columbia requires a course in economics. Students should take ECON 100 that also fulfill one SOC SCI CAR.