

Mathematics/Engineering Curriculum

B.S. in Mathematics –Engineering Track (Dual Degree Program)

92-95 semester hours at Clayton State

Overview

The curriculum of the Dual Degree program at Clayton State leading to a Bachelor of Science in Integrative Studies from Clayton State and a Bachelor's Degree in Engineering from Georgia Institute of Technology requires the following for completion degree at Clayton State:

Curriculum Area	Hours Required	Location
Core Curriculum: Areas A-E	42	Clayton State
Major Requirements: Area F	18	Clayton State
Required Upper Division Mathematics Courses	12	Clayton State
Upper Division Mathematics Electives	12 -15	Clayton State
Additional Science Requirements/Guided Electives	5-11	Clayton State
Upper Division Engineering Electives	25-28	Georgia Tech
Total for BS in Mathematics at Clayton State	120	

****A minimum of 55 hours of coursework is required for completion of the engineering degree at Georgia Tech. 25-28 of the upper division hours will transfer back to Clayton State to complete the upper division requirements for the Bachelor's degree at Clayton State.**

The total number of hours required to complete the Bachelor's Degree in Engineering depends on the particular engineering discipline in which a student enrolls. The amount of time required to complete the engineering degree is approximately 2 years but could be longer depending on the specific engineering program requirements.

Science Requirements: The 22xx/22xxL Physics sequence is required for every engineering program at Georgia Tech. The additional science requirements should be carefully chosen to satisfy the requirements of the particular engineering discipline at Georgia Tech. See **Transfer Requirements by Engineering Discipline**.

Area A—Essential Skills 9 hours

ENGL 1101	English Composition I	3 hours
ENGL 1102	English Composition II	3 hours

This degree requires completion of Precalculus in Area A. Students who must first take MATH 1111 as an elective can subsequently complete MATH 1112A to complete this requirement.

Choose One:

MATH 1112A**	Trigonometry	3 hours
MATH 1113	Precalculus	3 hours
MATH 1501	Calculus I	3 hours (1 hour counts in Area F)

Area B—Critical Thinking and Communication 4 hours

CRIT 1101	Critical Thinking	3 hours
COMM 1001	Presentational Speaking	1 hour

Area C—Humanities and Fine Arts 6 hours

Area C1—Humanities (or intermediate foreign language) 3 hours Choose one of the following:

ENGL 2111	World Literature I	3 hours
ENGL 2112	World Literature II	3 hours
ENGL 2121	British Literature	3 hours
ENGL 2131	American Literature I	3 hours
ENGL 2132	American Literature II	3 hours
PHIL 2201	Intro to World Philosophy	3 hours
PHIL 2601	Ethics	3 hours
Foreign Language 2001		3 hours
Foreign Language 2002		3 hours

Area C2—Fine Arts (or intermediate foreign language) 3 hours Choose one of the following:

ART 2301	Art of the Pre-Modern World	3 hours
ART 2302	Art of the Modern World	3 hours
CMS 2100	Introduction to Film	3 hours
MUSC 2101	Music Appreciation	3 hours
MUSC 2301	Introduction to World Music	3 hours
THEA 1100	Theatre Appreciation	3 hours

PHIL 2401	Intro to Aesthetics	3 hours
Foreign Language 2001		3 hours
Foreign Language 2002		3 hours

Area D—Natural Science and Mathematics 11 hours

Area D1. Laboratory Science 8 hours Choose two of the following:

CHEM 1211/1211L	Principles of Chemistry I (with Lab)	4 hours
CHEM 1212/1212L	Principles of Chemistry II (with Lab)	4 hours
PHYS 2211/2211L	Principles of Physics I (with Lab)	4 hours
PHYS 2212/2212L	Principles of Physics II (with Lab)	4 hours

Area D2. Additional Science, Math, or Technology 3 hours Choose one of the following if not taken in another area:

MATH 1501	Calculus I	3 hours (1 hour counts in Area F)
MATH 2502	Calculus II	3 hours (1 hour counts in Area F)

Area E—Social Sciences 12 hours

POLS 1101	American Government	3 hours
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Choose one:

HIST 2111	US History to 1877	3 hours
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HIST 2112	US History Since Reconstruction	3 hours
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Choose one:

PSYC 1101	Intro to General Psychology	3 hours
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SOCI 1101	Intro to Sociology	3 hours
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Choose one:

SOSC 2501	Survey of Social Sciences and Contemporary Issues	3 hours
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HIST 1111	Pre-Modern World History	3 hours
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HIST 1112	Modern World History	3 hours
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Area F—Major Requirements 18 hours

MATH 1501	Calculus I	1 hour
MATH 2502	Calculus II	1 or 4 hours
MATH 2503	Calculus III	4 hours
MATH 2140	Linear Algebra	3 hours
CSCI 1371	Computing for Engineers	3 hours

Choose two if Calculus I is in Area A or one if Precalculus is in Area A (if not taken in another area):

PHYS 2211	Principles of Physics I	3 hours
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PHYS 2212	Principles of Physics II	3 hours
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CHEM 1211	Principles of Chemistry I	3 hours
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CHEM 1212	Principles of Chemistry II	3 hours
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BIOL 1107	Principles of Biology I	3 hours
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Science Elective(s)		3-6 hours
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MATH 1231	Introductory Statistics	3 hours
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MATH 2020	Discrete Mathematics	3 hours
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Upper Division Mathematics Requirements 12 hours

MATH 3005	Transition to Higher Mathematics	3 hours
MATH 3110	Survey of Algebra	3 hours
MATH 3520	Introduction to Analysis	3 hours
MATH 3303	Ordinary Differential Equations	3 hours

Upper Division Mathematics Electives 12-15 hours

Three of the following: (A)

MATH 3220	Applied Statistics	3 hours
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MATH 4130	Applied Algebra	3 hours
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MATH 4231	Modern Geometry	3 hours
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MATH 4303	Partial Differential Equations	3 hours
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MATH 4350	Graph Theory	3 hours
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MATH 4360	Combinatorics	3 hours
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One or two of the following:

MATH 3003	Applied Math Modeling	3 hours
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MATH 4800	Selected Topics	3 hours
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One additional course from (A) list		3 hours
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Additional Requirements: 5-11 hours

Choose one: 3 hours

ECON 2105 Principles of Macroeconomics

ECON 2106 Principles of Microeconomics

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PHYS 2211/2211L	Principles of Physics I (with Lab)	1 or 4 hours
PHYS 2212/2212L	Principles of Physics II (with Lab)	1 or 4 hours
CHEM 1211/1211L	Principles of Chemistry I (with Lab)	1 or 4 hours
CHEM 1212/1212L	Principles of Chemistry II (with Lab)	1 or 4 hours
BIOL 1107/1107L	Principles of Biology I (with Lab)	1 or 4 hours
Science Electives	May be chosen from Chemistry, Biology, or Physics	2-8 hours