ENGINEERING DUAL DEGREE OPTIONS

Through an agreement with Clayton State and the Georgia Institute of Technology, students may complete a specified three-year program of study at CSU, and then attend Georgia Institute of Technology for approximately two years. After completion of the engineering program at Georgia Institute of Technology, the student will receive two degrees:

a **Bachelor of Science** from Clayton State in:

- **Computer Science**,
- **Mathematics**,
- **Chemistry** or
- **Integrative Studies**

and a **Bachelor of Science from Georgia Tech** in Engineering (restricted to Chemical and Biomolecular Engineering for the Chemistry Dual Degree option).

In order to transfer to Georgia Tech, students must:

- Obtain an overall GPA of at least 3.3 (all attempts at all courses).
- Obtain a math/science GPA of at least 3.3 (all natural science courses and all MATH 1501 Calculus I and higher).
- Be enrolled at Clayton State for at least 2 semesters immediately preceding transfer to GT, i.e. Fall/Spring or Spring/Summer for a Fall GT enrollment
- Admission to Georgia Tech is not guaranteed

Additional Program-Specific Graduation requirements for all Dual Degree Programs:

All Dual Degree students must earn a grade of C or better (or K) in the following courses:

- All MATH courses applied towards the degree
- All science courses (i.e., courses with BIOL, CHEM, or PHYS prefixes) applied towards the degree
- All CSCI courses applied towards the degree
- ENGL 1101 English Composition I & ENGL 1102 English Composition II; CRIT 1101 Critical Thinking

A maximum of one grade of D is allowed to be applied towards the degree.

Note: Grades of D cannot be transferred to or from Georgia Tech. All grades transferred to or from Georgia Tech must be C or better.

Dual Degree Program Options

Computer Science + Engineering

Code	Title	Credit Hours
Core IMPACTS		42
Field of Study		18
Required Lower Division Computer Science & Mathematics Courses	[1]	9-12
Required Upper Division Computer Science & Mathematics Courses		21
Guided Electives		8
Total Credit Hours		**98-101**

[1] Credits vary based on Core IMPACTS (M) Math Course.

Mathematics + Engineering

Code	Title	Credit Hours
Core IMPACTS		42
Field of Study		18
Required Upper-Division Mathematics Courses		13
Elective Upper-Division Mathematics Courses		12
Guided Electives	[1]	8-11
Total Credit Hours		**93-96**

[1] Credits vary based on Core IMPACTS (M) Math Course.

Integrative Studies + Engineering

Code	Title	Credit Hours
Core IMPACTS		42
Field of Study		18
Additional Lower Division Requirements	[1]	5-8
Differential Equations Requirement		3
Lower Division Math/Science/CSCI Electives	[2]	0-16
Upper Division Math/Science/CSCI Electives	[2]	8-24
Total Credit Hours		**92-95**

[1] Credits vary based on Core IMPACTS (M) Math Course.
[2] Must Total at least 24 hours.

The remainder of the 120-hour program of study will consist of upper division engineering courses, which are included in the program of study for the engineering degree program at Georgia Tech. In order to complete the Dual Degree program, the student must complete an engineering degree at Georgia Tech. *It is the responsibility of the student to ensure they take the correct science and mathematics sequence – as they differ throughout the engineering disciplines. Students are strongly encouraged to speak with an advisor before entering this program of study.*

Program Requirements

Computer Science + Engineering

For Students Using MATH 1112 College Trigonometry or MATH 1113 Pre-Calculus in Core IMPACTS

Code	Title	Credit Hours
Core IMPACTS		
All other Core Curriculum requirements for the Dual-Degree Program are shown under Core Curriculum in the Graduation Requirements section of the Undergraduate Catalog. [1]		42
Subtotal		42
Field of Study		
Excess hour from Required MATH 1501 Calculus I		1
MATH 1401	Elementary Statistics	3
MATH 2502	Calculus II	4
Excess hour from Required MATH 2503 Calculus III		1
MATH 2140	Introductory Linear Algebra	3
MATH 2020	Introductory Discrete Math	3
CSCI 1301	Computer Science I	3
Subtotal		18
Required Lower-Division Mathematics Course		
MATH 2503	Calculus III	4
Subtotal		4
Required Lower-Division Computer Science Courses		
CSCI 1302	Computer Science II	3
CSCI 2302	Data Structures and Algorithms	3
CSCI 2305	Computer Org. & Architecture	3
Subtotal		9
Required Upper-Division Computer Science/Mathematics Courses		
MATH 3303	Differential Equations	3
CSCI 3305	Operating Systems	3
CSCI 3306	Computer Networks & Security	3
CSCI 3310	Databases Design & Implement.	3
CSCI 3320	Software Engineering Design	3
CSCI 3333	Programming Languages	3
CSCI 4333	Theory of Computation	3
or CSCI 4334	Algorithm Design & Analysis	
Subtotal		21
Additional Guided Science Electives		
Choose two from the following: [2,3]		8
PHYS 2211 & 2211L	Principles of Physics I and Principles of Physics Lab I	
PHYS 2212 & 2212L	Principles of Physics II and Principles of Physics Lab II	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Lab I	
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry Lab II	
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Lab I	
Science Electives: CHEM, BIOL, or PHYS		
Subtotal		8
Total Credit Hours		**102**

[1] MATH 1112 College Trigonometry or MATH 1113 Pre-Calculus must be taken in Core IMPACTS (M)
A science sequence must be completed in Core IMPACTS (T). CHEM 1211 Principles of Chemistry 1/CHEM 1211L Principles of Chemistry Lab 1 is required by all engineering programs at Georgia Tech except Industrial Engineering.
Economics (ECON 1101 Economic of Financial Literacy, ECON 2105 Principles of Macroeconomics, or ECON 2106 Principles of Microeconomics) is required for the Georgia Tech degree and may be taken at Clayton State to satisfy Core IMPACTS (S)
Note that the following courses do not transfer to Georgia Tech and will not be counted towards the degree:

- MATH 1101 Intro to Mathematical Modeling
- MATH 1111 College Algebra
- BIOL 1111 & 1112 Introduction to Biology I & II and their labs
- CHEM 1151 & 1152 Survey of Chemistry I & II and their labs
- PHYS 1111 & 1112 Introductory Physics I & II and their labs

[2] The 22xx/22xxL Physics sequence is required for every engineering program at Georgia Tech. The additional science requirements should be carefully chosen in consultation with your advisor to satisfy the requirements of the particular engineering discipline at Georgia Tech.

[3] Chemical Engineering and Materials Science and Engineering require BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to the required Physics and Chemistry sequences; Environmental Engineering requires BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I and the Physics sequence.

The remainder of the 120-hour program of study will consist of upper division engineering courses, which are included in the program of study for the engineering degree program at Georgia Tech. In order to complete the Dual Degree program, the student must complete an engineering degree at Georgia Tech.

Computer Science + Engineering

For Students Using MATH 1501 Calculus I in Core IMPACTS

Code	Title	Credit Hours
Core IMPACTS		
All other Core Curriculum requirements for the Dual-Degree Program are shown under Core Curriculum in the Graduation Requirements section of the Undergraduate Catalog. [1]		42
Subtotal		42
Field of Study		
MATH 1401	Elementary Statistics	3
Excess hour from Required MATH 1501 Calculus I		1
Excess hour from Required MATH 2502 Calculus II		1
MATH 2503	Calculus III	4
MATH 2140	Introductory Linear Algebra	3
MATH 2020	Introductory Discrete Math	3
CSCI 1301	Computer Science I	3
Subtotal		18
Required Lower-Division Computer Science Courses		

CSCI 1302	Computer Science II	3
CSCI 2302	Data Structures and Algorithms	3
CSCI 2305	Computer Org. & Architecture	3
Subtotal		9
Required Upper-Division Computer Science/Mathematics Courses		
MATH 3303	Differential Equations	3
CSCI 3305	Operating Systems	3
CSCI 3306	Computer Networks & Security	3
CSCI 3310	Databases Design & Implement.	3
CSCI 3320	Software Engineering Design	3
CSCI 3333	Programming Languages	3
CSCI 4333	Theory of Computation	3
or CSCI 4334	Algorithm Design & Analysis	
Subtotal		21
Additional Guided Science Electives		
Choose two from the following: [2,3]		8
PHYS 2211 & 2211L	Principles of Physics I and Principles of Physics Lab I	
PHYS 2212 & 2212L	Principles of Physics II and Principles of Physics Lab II	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Lab I	
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry Lab II	
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Lab I	
Subtotal		
Total Credit Hours		**98**

[1] MATH 1501 Calculus I must be taken in Core IMPACTS (M) Economics (ECON 1101 Economic of Financial Literacy, ECON 2105 Principles of Macroeconomics, or ECON 2106 Principles of Microeconomics) is required for the Georgia Tech degree and may be taken at Clayton State to satisfy Core IMPACTS (S)
A science sequence must be completed in Core IMPACTS (T). CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab 1 is required by all engineering programs at Georgia Tech except Industrial Engineering.
Note that the following courses do not transfer to Georgia Tech and will not be counted towards the degree:

- MATH 1101 Intro to Mathematical Modeling
- MATH 1111 College Algebra
- BIOL 1111 & 1112 Introduction to Biology I & II and their labs
- CHEM 1151 & 1152 Survey of Chemistry I & II and their labs
- PHYS 1111 & 1112 Introductory Physics I & II and their labs

[2] The 22xx/22xxL Physics sequence is required for every engineering program at Georgia Tech. The additional science requirements should be carefully chosen in consultation with your advisor to satisfy the requirements of the particular engineering discipline at Georgia Tech.

[3] Chemical Engineering and Materials Science and Engineering require BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to the required Physics and Chemistry sequences; Environmental Engineering requires BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I and the required Physics sequence.

The remainder of the 120-hour program of study will consist of upper division engineering courses, which are included in the program of study for the engineering degree program at Georgia Tech. In order to complete the Dual Degree program, the student must complete an engineering degree at Georgia Tech.

Mathematics + Engineering

For Students Using MATH 1112 College Trigonometry or MATH 1113 Pre-Calculus in Core IMPACTS (M)

Code	Title	Credit Hours
Core IMPACTS		
All other Core Curriculum requirements for the Dual-Degree Program are shown under Core Curriculum in the Graduation Requirements section of the Undergraduate Catalog. [1]		42
Subtotal		42
Field of Study		
Excess hour from Required MATH 1501 Calculus I		1
MATH 2140	Introductory Linear Algebra	3
MATH 2502	Calculus II	4
MATH 2503	Calculus III	4
Choose one from the following:		3
CHEM 1211	Principles of Chemistry I [2]	
PHYS 2211	Principles of Physics I [2]	
MATH 1401	Elementary Statistics	
MATH 2020	Introductory Discrete Math	
Choose one from the following, depending on intended major:		3
CSCI 1301	Computer Science I (Electrical, Computer, and Industrial Engineering)	
CSCI 1371	Computing for Engineers (All Other Engineering Majors)	
Subtotal		18
Required Upper-Division Mathematics Courses		
MATH 3005	A Transition to Higher Math	3
MATH 3006	Communication in Mathematics	1
MATH 3110	Survey of Algebra	3
MATH 3303	Differential Equations	3
MATH 3520	Introduction to Analysis	3
Subtotal		13
Upper-Division Mathematics Elective		
Choose three from the following:		9
MATH 3220	Applied Statistics	
MATH 4130	Applied Algebra	
MATH 4231	Modern Geometry	
MATH 4250	Elementary Number Theory	
MATH 4261	Introduction to Probability	
MATH 4271	Financial Mathematics	3
MATH 4303	Partial Differential Equations	
MATH 4320	Numerical Methods	
MATH 4350	Graph Theory	
MATH 4360	Combinatorics	

Choose one additional course from the list above or from the following:		3
MATH 4800	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
Subtotal		15
Choose one from the following if not taken in Core IMPACTS:		0-3
Guided Electives		
ECON 1101	Economic of Financial Literacy	
ECON 2105	Principles of Macroeconomics	
ECON 2106	Principles of Microeconomics	
Additional Guided Science Electives [3,4]		*5-8*
PHYS 2211 & 2211L	Principles of Physics I and Principles of Physics Lab I	
PHYS 2212 & 2212L	Principles of Physics II and Principles of Physics Lab II	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Lab I	
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry Lab II	
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Lab I	
Select from CHEM, BIOL, or PHYS		
Remaining Guided Electives		*3*
Choose one from the following:		
MATH 1401	Elementary Statistics	
MATH 2020	Introductory Discrete Math	
Additional Upper Division Mathematics Electives from the list above		
MATH 4800	Selected Topics in Mathematics	
or MATH 4803	Selected Topics in Mathematics	
or MATH 4802	Selected Topics in Mathematics	
or MATH 4803	Selected Topics in Mathematics	
or MATH 4804	Selected Topics in Mathematics	
Subtotal		*8-11*
Total Credit Hours		**93-96**

1 MATH 1112 College Trigonometry or MATH 1113 Pre-Calculus must be taken in Core IMPACTS (M).
A science sequence must be completed in Core IMPACTS (T).
CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I is required by all engineering programs at Georgia Tech except Industrial Engineering.
Note that the following courses do not transfer to Georgia Tech and will not be counted towards the degree:

- MATH 1101 Intro to Mathematical Modeling
- MATH 1111 College Algebra
- BIOL 1111 & 1112 Introduction to Biology I & II and their labs
- CHEM 1151 & 1152 Survey of Chemistry I & II and their labs
- PHYS 1111 & 1112 Introductory Physics I & II and their labs

2 Materials Science and Engineering (MSE) and Chemical and Biomolecular Engineering (ChBE) take at least one science.

3 The 22xx/22xxL Physics sequence is required for every engineering program at Georgia Tech. The additional science requirements should be carefully chosen in consultation with your advisor to satisfy the requirements of the particular engineering discipline at Georgia Tech.

4 Chemical Engineering and Materials Science and Engineering require BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to the required Physics and Chemistry sequences; Environmental Engineering requires BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I and the required Physics sequence.

The remainder of the 120-hour program of study will consist of upper division engineering courses, which are included in the program of study for the engineering degree program at Georgia Tech. In order to complete the Dual Degree program, the student must complete an engineering degree at Georgia Tech.

MAthematics + Engineering

For Students Using MATH 1501 Calculus I in Core IMPACTS

Code	Title	Credit Hours
Core IMPACTS		
All other Core Curriculum requirements for the Dual-Degree Program are shown under Core Curriculum in the Graduation Requirements section of the Undergraduate Catalog. [1]		42
Subtotal		42
Field of Study		
Excess hour from Required MATH 1501 Calculus I		1
Excess hour from Required MATH 2502 Calculus II		1
MATH 2503	Calculus III	4
MATH 2140	Introductory Linear Algebra	3
Choose two from the following: [2]		6
BIOL 1107	Principles of Biology I	
CHEM 1211	Principles of Chemistry I	
CHEM 1212	Principles of Chemistry II	
MATH 1401	Elementary Statistics	
PHYS 2211	Principles of Physics I	
PHYS 2212	Principles of Physics II	
MATH 2020	Introductory Discrete Math	
Choose one from the following, depending on intended major:		3
CSCI 1301	Computer Science I (Electrical, Computer, and Industrial Engineering)	
CSCI 1371	Computing for Engineers (All Other Engineering Majors)	
Subtotal		18
Required Upper-Division Mathematics Courses		
MATH 3005	A Transition to Higher Math	3
MATH 3006	Communication in Mathematics	1
MATH 3110	Survey of Algebra	3
MATH 3520	Introduction to Analysis	3
MATH 3303	Differential Equations	3
Subtotal		13
Upper-Division Mathematics Elective		
Choose three from the following:		9
MATH 3220	Applied Statistics	

MATH 4130	Applied Algebra	
MATH 4231	Modern Geometry	
MATH 4250	Elementary Number Theory	
MATH 4261	Introduction to Probability	
MATH 4271	Financial Mathematics	3
MATH 4303	Partial Differential Equations	
MATH 4320	Numerical Methods	
MATH 4350	Graph Theory	
MATH 4360	Combinatorics	
Choose one additional course from the list above or from the following:		3
MATH 4800	Selected Topics in Mathematics	
or MATH 4803	Selected Topics in Mathematics	
or MATH 4802	Selected Topics in Mathematics	
or MATH 4803	Selected Topics in Mathematics	
or MATH 4804	Selected Topics in Mathematics	
Subtotal		15
Additional Requirements		
Choose one from the following if not taken in Core IMPACTS		0-3
ECON 1101	Economic of Financial Literacy	
ECON 2105	Principles of Macroeconomics	
ECON 2106	Principles of Microeconomics	
Additional Guided Science Electives [3,4]		*5*
PHYS 2211 & 2211L	Principles of Physics I and Principles of Physics Lab I	
PHYS 2212 & 2212L	Principles of Physics II and Principles of Physics Lab II	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Lab I	
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry Lab II	
Select from CHEM, BIOL, or PHYS		
PHYS 3454		
Remaining Guided Electives		
Choose one from the following:		0-3
MATH 1401	Elementary Statistics	
MATH 2020	Introductory Discrete Math	
Additional Upper Division Mathematics Elective from the list above		
MATH 4800	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
or MATH 480(	Selected Topics in Mathematics	
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Lab I	
Subtotal		8
Total Credit Hours		**93**

1 MATH 1501 Calculus I must be taken in Core IMPACTS (M). All other Core Curriculum requirements for the Dual-Degree Program are shown under Core Curriculum in the Graduation Requirements section of the Undergraduate Catalog. A science sequence must be completed in Core IMPACTS (T).

CHEM 1211 Principles of Chemistry I/ CHEM 1211L Principles of Chemistry Lab Iis required by all engineering majors at Georgia Tech except Industrial Engineering.

Note that the following courses do not transfer to Georgia Tech and will not be counted towards the degree:

- MATH 1101 Intro to Mathematical Modeling
- MATH 1111 College Algebra
- BIOL 1111 & 1112 Introduction to Biology I & II and their labs
- CHEM 1151 & 1152 Survey of Chemistry I & II and their labs
- PHYS 1111 & 1112 Introductory Physics I & II and their labs

2 Materials Science and Engineering (MSE) and Chemical and Biomolecular Engineering (ChE) take at least one science course.

3 The 22xx/22xxL Physics sequence is required for every engineering program at Georgia Tech. The additional science requirements should be carefully chosen in consultation with your advisor to satisfy the requirements of the particular engineering discipline at Georgia Tech.

4 Chemical Engineering and Materials Science and Engineering require BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to the required Physics and Chemistry sequences; Environmental Engineering requires BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I and the required Physics sequence.

The remainder of the 120-hour program of study will consist of upper division engineering courses, which are included in the program of study for the engineering degree program at Georgia Tech. In order to complete the Dual Degree program, the student must complete an engineering degree at Georgia Tech.

Integrative Studies+Engineering

For Students Using MATH 1112 College Trigonometry or MATH 1113 Pre-Calculus in Core IMPACTS (M)

Code	Title	Credit Hours
Core IMPACTS		
All other Core Curriculum requirements for the Dual-Degree Program are shown under Core Curriculum in the Graduation Requirements section of the Undergraduate Catalog. [1]		42
Subtotal		42
Field of Study		
Excess hour from Required MATH 1501 Calculus I		1
MATH 2502	Calculus II	4
MATH 2503	Calculus III	4
MATH 2140	Introductory Linear Algebra	3
Choose one from the following:		3
CHEM 1211	Principles of Chemistry I	
CHEM 1212	Principles of Chemistry II	
PHYS 2211	Principles of Physics I	
PHYS 2212	Principles of Physics II	
BIOL 1107	Principles of Biology I	
Choose one from the following, depending on intended major:		3
CSCI 1301	Computer Science I (Electrical, Computer, and Industrial Engineering)	
CSCI 1371	Computing for Engineers (All Other Engineering Majors)	

Subtotal		36
Additional Lower Division Requirements		
Choose one from the following, if not satisfied in Core IMPACTS		0-3
ECON 1101	Economic of Financial Literacy	
ECON 2105	Principles of Macroeconomics	
ECON 2106	Principles of Microeconomics	
Science Requirements		
Choose from the following: [2,3]		5-8
PHYS 2211 & 2211L	Principles of Physics I and Principles of Physics Lab I	
PHYS 2212 & 2212L	Principles of Physics II and Principles of Physics Lab II	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Lab I	
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry Lab II	
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Lab I	
Science Electives: CHEM, BIOL, or PHYS		
PHYS 3454		
Subtotal		13-22
Upper Division Mathematics Requirement		
MATH 3303	Differential Equations	3
Subtotal		3
Lower and Upper Division Electives		
Choose at least 24 hours, with a maximum of 16 lower division hours.		24
Total Credit Hours		**95-98**

[1] Must take either MATH 1112 College Trigonometry or MATH 1113 Pre-Calculus in Core IMPACTS (M).
A science sequence must be completed in Core IMPACTS (T).
CHEM 1211 Principles of Chemistry I/ CHEM 1211L Principles of Chemistry Lab Iis required by all engineering programs at Georgia Tech except Industrial Engineering.
Note that the following courses do not transfer to Georgia Tech and will not be counted towards the degree:

- MATH 1101 Intro to Mathematical Modeling
- MATH 1111 College Algebra
- BIOL 1111 & 1112 Introduction to Biology I & II and their labs
- CHEM 1151 & 1152 Survey of Chemistry I & II and their labs
- PHYS 1111 & 1112 Introductory Physics I & II and their labs

[2] The 22xx/22xxL Physics sequence is required for every engineering program at Georgia Tech. The additional science requirements should be carefully chosen in consultation with your advisor to satisfy the requirements of the particular engineering discipline at Georgia Tech.

[3] Chemical Engineering and Materials Science and Engineering require BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to the required Physics and Chemistry sequences; Environmental Engineering requires BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I and the required Physics sequence.

The remainder of the 120-hour program of study will consist of upper division engineering courses, which are included in the program of study for the engineering degree program at Georgia Tech. In order to complete the Dual Degree program, the student must complete an engineering degree at Georgia Tech.

Integrative Studies + Engineering

For Students Using MATH 1501 Calculus I in Core IMPACTS (M)

Code	Title	Credit Hours
Core IMPACTS		
All other Core Curriculum requirements for the Dual-Degree Program are shown under Core Curriculum in the Graduation Requirements section of the Undergraduate Catalog. [1]		42
Subtotal		42
Field of Study		
Excess hour from Required MATH 1501 Calculus I		1
Excess hour from Required MATH 2502 Calculus II		1
MATH 2503	Calculus III	4
MATH 2140	Introductory Linear Algebra	3
Choose two from the following:		6
CHEM 1211	Principles of Chemistry I	
CHEM 1212	Principles of Chemistry II	
PHYS 2211	Principles of Physics I	
PHYS 2212	Principles of Physics II	
BIOL 1107	Principles of Biology I	
Choose one from the following, depending on intended major:		3
CSCI 1301	Computer Science I (Electrical, Computer, and Industrial Engineering)	
CSCI 1371	Computing for Engineers (All Other Engineering Majors)	
Subtotal		18
Additional Lower Division Requirements		
Choose one from the following, if not satisfied in Core IMPACTS.		3
ECON 1101	Economic of Financial Literacy	
ECON 2105	Principles of Macroeconomics	
ECON 2106	Principles of Microeconomics	
Science Requirements		
Choose from the following: [2,3]		2-5
PHYS 2211 & 2211L	Principles of Physics I and Principles of Physics Lab I	
PHYS 2212 & 2212L	Principles of Physics II and Principles of Physics Lab II	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Lab I	
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry Lab II	
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Lab I	
Science Electives: CHEM, BIOL, or PHYS		
Subtotal		5-8
Upper Division Mathematics Requirement		
MATH 3303	Differential Equations	3
Subtotal		3
Lower and Upper Division Electives		
Choose at least 24 hours, with a maximum of 16 lower division hours.		24

Subtotal	24
Total Credit Hours	**92-95**

[1] Must take MATH 1501 Calculus I in Core IMPACTS (M).
A science sequence must be completed in Core IMPACTS (T).
CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I is required by all engineering programs at Georgia Tech except Industrial Engineering.
Note that the following courses do not transfer to Georgia Tech and will not be counted towards the degree:

- MATH 1101 Intro to Mathematical Modeling
- MATH 1111 College Algebra
- BIOL 1111 & 1112 Introduction to Biology I & II and their labs
- CHEM 1151 & 1152 Survey of Chemistry I & II and their labs
- PHYS 1111 & 1112 Physics I & II and their labs

[2] 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.

[3] Chemical Engineering and Materials Science and Engineering require BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to the required Physics and Chemistry sequences; Environmental Engineering requires BIOL 1107 Principles of Biology I/BIOL 1107L Principles of Biology Lab I in addition to CHEM 1211 Principles of Chemistry I/CHEM 1211L Principles of Chemistry Lab I and the Physics sequence.

The remainder of the 120-hour program of study will consist of upper division engineering courses, which are included in the program of study for the engineering degree program at Georgia Tech. In order to complete the Dual Degree program, the student must complete an engineering degree at Georgia Tech.