

**TRANSFER CREDIT  
ARTICULATION AGREEMENT**  
*between*  
**HOFSTRA UNIVERSITY  
SCHOOL OF ENGINEERING AND APPLIED SCIENCE**  
*and*  
**SUFFOLK COUNTY COMMUNITY COLLEGE**

Effective: February 1, 2016

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

**Transfer Credit Articulation Agreement**

*between*

**Hofstra University**

**School of Engineering and Applied Science**

*and*

**Suffolk County Community College**

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**Transfer Credit Articulation Agreement**  
*between*  
**Hofstra University**  
**School of Engineering and Applied Science**  
*and*  
**Suffolk County Community College**

This document represents the Transfer Credit Articulation Agreement between Hofstra and Suffolk County Community College (hereafter, SCCC). This agreement is applicable to SCCC students transferring into the School of Engineering and Applied Science (hereafter SEAS).

The information included will be effective as of February 1, 2016 and renews automatically. This agreement will be reviewed by both institutions every other year and updated or terminated as determined by either party with a six month written notice.

The attached documents are the result of dialogue between SCCC and Hofstra University SEAS. Each engineering course outline has been reviewed by both parties for content and transferability.

1. Hofstra University will accept up to 69 semester hours (s.h.) of transfer credits from SCCC. Any given course must have a grade of C- or better, and the applicant must have an overall GPA of 2.0 or higher.
2. The attached articulation agreement serves as a guideline for the minimum number of transfer credits from SCCC to Hofstra University. SCCC students have the opportunity to complete the requirements for their choice of engineering degree from SEAS within four additional semesters of full-time study.
3. Hofstra University requires that the last 30 semester hours required for either BS or BE degrees must be earned at Hofstra. In addition, students must complete in residence 15 semester hours in their major field of specialization.

**To better serve the needs of SCCC students considering transfer to Hofstra, to facilitate the transfer process and to ensure that students are provided the information they need, it is agreed:**

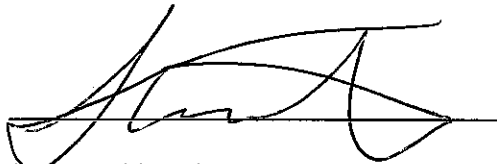
**Hofstra University will:**

- A. designate an academic adviser in the Center of University Advising for SCCC students transferring to Hofstra. Additionally, an academic adviser in SEAS will be designated to work with SCCC students.
- B. conduct an orientation and registration program specifically for SCCC students transferring to Hofstra.
- C. provide regular, on-site information sessions on the SCCC campus for students interested in transferring to Hofstra.
- D. have faculty continue to work with SCCC faculty in reviewing additional courses for transferability.
- E. grant SCCC transfers who apply for housing by May 1<sup>st</sup> the same priority for housing assignments as well as other new incoming students.
- F. designate a financial aid counselor for SCCC students transferring to Hofstra.

**Suffolk County Community College will:**

- A. publicize this agreement to students, faculty and professional staff in campus publications.
- B. have advisers inform interested students of this opportunity.
- C. provide a list of graduates upon request.
- D. provide a list of engineering majors upon request.
- E. organize a "Hofstra Day" for students on the SCCC campus.
- F. assure that brochures and other printed materials are distributed to the Transfer Office, Advisement Center and academic departments.
- G. advertise any special programs or events Hofstra is offering on the SCCC campus.

**For Hofstra University:**

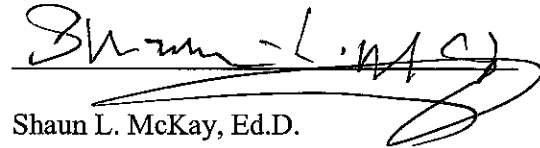


Stuart Rabinowitz, J.D.

President

Hofstra University

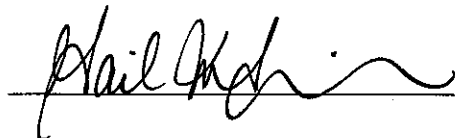
**For Suffolk County Community College:**



Shaun L. McKay, Ed.D.

President

Suffolk County Community College



Gail M. Simmons, Ph.D.

Provost and Senior Vice President

Hofstra University



Suzanne Johnson, Ph.D.

Vice President for Academic Affairs

Suffolk County Community College

# Biomedical Engineering

## SCCC Course - First Semester -FALL 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
COL101 (-)	Freshman Seminar	1			
CHE133	College Chem I	4	Chem 3A	Gen Chem	3
			Chem 3B	Gen Chem Lab	1
ENG101	Standard Freshman Composition	3	WSC 1	Composition	3
ENS112	Introduction to Engineering Design	2	ENGG 15	Design Human World	2
MAT141	Calculus with Analytic Geometry I	4	MATH 71	Calculus I	4

## SCCC Course - Second Semester -Spring 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
CHE134	College Chem II	4	Chem4A (-)	General Chemistry II	3
ENG102	Introduction to Literature	3	WSC 2	Composition	3
MAT142	Calculus with Analytic Geometry II	4	MATH 72	Calculus II	4
ENS117	Engineering Computations	3	ENGG 10	Comp. Prog. For Engg.	3
PHY130	Physics I	3	Phys 11A	Gen. Physics	3
PHY132	Physics I Lab	1	Phys 11B	Gen. Physics Lab	1
			ENGG 19 (+)	Tech. & Society	3

## SCCC Course - Third Semester -FALL 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
DRF114	AutoCAD I	3	ENGG 112	Engg. Drawing	2
ENS118	Engineering Mechanics: Statics	3	ENGG 25	Statics	3
ENS233	Electrical Engineering Circuit Analysis	4	ENGG 30	Engg. Circuit Analysis	3
			ENGG 34	Circuit Analysis Lab	1
MAT204	Differential Equations	4	MATH 131	Differential Equations	3
PHY230	Physics II	3	Phys 12A	Gen. Physics	3
PHY232	Physics II Lab	1	Phys 12B	Gen. Physics Lab	1
			ENGG 27 (+)	Engineering Materials	3

## SCCC Course -Fourth Semester -Spring 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
ENS119	Engineering Mechanics Dynamics or * Engineering Elective	3	ENGG 26	Dynamics	3
	History Elective	3	Elective (+)	Soc.Sci/Humanities	3
MAT203	Calculus with Analytical Geometry III	4	MATH 73	Calculus III	4
PHYS245 (-)	*Physics III	3			
PHYS246 (-)	*Physics III Lab	1			
			ENGG 28 (+)	Strength of Materials	3
			ENGG 113 (+)	Thermodynamics	3

(+) Hofstra Requires

(-) Hofstra Does Not Require

\*Credit will transfer but not towards this major

# Civil Engineering

## SCCC Course - First Semester -FALL 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
COL101 (-)	Freshman Seminar	1			
CHE133	College Chem I	4	Chem 3A	Gen Chem	3
			Chem 3B	Gen Chem Lab	1
ENG101	Standard Freshman Composition	3	WSC 1	Composition	3
ENS112	Introduction to Engineering Design	2	ENGG 15	Design: Human World	2
MAT141	Calculus with Analytic Geometry I	4	MATH 71	Calculus I	4

## SCCC Course - Second Semester -Spring 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
CHE134	College Chem II	4	Chem4A (-)	General Chemistry II	3
ENG102	Introduction to Literature	3	WSC 2	Composition	3
MAT142	Calculus with Analytic Geometry II	4	MATH 72	Calculus II	4
ENS117	Engineering Computations	3	ENGG 10	Comp. Prog. For Engg	3
PHY130	Physics I	3	Phys 11A	Gen. Physics	3
PHY132	Physics I Lab	1	Phys 11B	Gen. Physics Lab	1
			ENGG 19 (+)	Tech. & Society	3

## SCCC Course - Third Semester -FALL 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
DRF114	AutoCAD I	3	ENGG 112	Engg. Drawing	2
ENS118	Engineering Mechanics: Statics	3	ENGG 25	Statics	3
ENS233	Electrical Engineering Circuit Analysis	4	ENGG 30	Engg. Circuit Analysis	3
			ENGG 34	Circuit Analysis Lab	1
MAT204	Differential Equations	4	MATH 131	Differential Equations	3
PHY230	Physics II	3	Phys 12A	Gen. Physics	3
PHY232	Physics II Lab	1	Phys 12B	Gen. Physics Lab	1
			ENGG 27 (+)	Engineering Materials	3

## SCCC Course - Fourth Semester -Spring 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
ENS119	Engineering Mechanics Dynamics or * Engineering Elective	3	ENGG 26	Dynamics	3
	History Elective	3	Elective	Soc Sci/Humanities	3
MAT203	Calculus with Analytical Geometry III	4	MATH 73	Calculus III	4
PHYS245 (-)	*Physics III	3			
PHYS246 (-)	*Physics III Lab	1			
			ENGG 28 (+)	Strength of Materials	3
			ENGG 113 (+)	Thermodynamics	3

(+) Hofstra Requires

(-) Hofstra Does Not Require

\*Credit will transfer but not towards this major

# Electrical Engineering Major

## SCCC Course - First Semester -FALL 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
COL101 (-)	Freshman Seminar	1			
CHE133	College Chem I	4	Chem 3A	Gen Chem	3
			Chem 3B	Gen Chem Lab	1
ENG101	Standard Freshman Composition	3	WSC 1	Composition	3
ENS112	Introduction to Engineering Design	2	ENGG 15	Design: Human World	2
MAT141	Calculus with Analytic Geometry I	4	MATH 71	Calculus I	4

## SCCC Course -Second Semester -Spring 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
CHE134	College Chem II	4	Chem 4A (-)	General Chemistry II	3
ENG102	Introduction to Literature	3	WSC 2	Composition	3
MAT142	Calculus with Analytic Geometry II	4	MATH 72	Calculus II	4
ENS117	Engineering Computations	3	ENGG 10	Comp. Prog. For Engg	3
PHY130	Physics I	3	Phys 11A	Gen. Physics	3
PHY132	Physics I Lab	1	Phys 11B	Gen. Physics Lab	1
			ENGG 19 (+)	Tech. & Society	3

## SCCC Course - Third Semester -FALL 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
DRF114	AutoCAD I	3	ENGG 112 (-)	Engg. Drawing	2
ENS118	Engineering Mechanics: Statics	3	ENGG 25	Statics	3
ENS233	Electrical Engineering Circuit Analysis	4	ENGG 30	Engg. Circuit Analysis	3
			ENGG 34	Circuit Analysis Lab	1
MAT204	Differential Equations	4	MATH 131	Differential Equations	3
PHY230	Physics II	3	Phys 12A	Gen. Physics	3
PHY232	Physics II Lab	1	Phys 12B	Gen. Physics Lab	1

## SCCC Course - Fourth Semester -Spring 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
ENS119	Engineering Mechanics Dynamics or * Engineering Elective	3	ENGG 26	Dynamics	3
	History Elective	3	Elective	Soc Sci/Humanities	3
MAT203	Calculus with Analytical Geometry III	4	MATH 73	Calculus III	4
PHYS245 (-)	*Physics III	3			
PHYS246 (-)	*Physics III Lab	1			
			ENGG 32A (+)	Logic Des. & Dig. Circuit	3

(+) Hofstra Requires

(-) Hofstra Does Not Require

\*Credit will transfer but not towards this major



# Industrial Engineering

## SCCC Course - First Semester -FALL 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
COL101 (-)	Freshman Seminar	1			
CHE133	College Chem I	4	Chem 3A	Gen Chem	3
			Chem 3B	Gen Chem Lab	1
ENG101	Standard Freshman Composition	3	WSC 1	Composition	3
ENS112	Introduction to Engineering Design	2	ENGG 15	Design: Human World	2
MAT141	Calculus with Analytic Geometry I	4	MATH 71	Calculus I	4

## SCCC Course - Second Semester -Spring 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
CHE134	College Chem II	4	Chem4A (-)	General Chemistry II	3
ENG102	Introduction to Literature	3	WSC 2	Composition	3
MAT142	Calculus with Analytic Geometry II	4	MATH 72	Calculus II	4
ENS117	Engineering Computations	3	ENGG 10	Comp. Prog. For Engg	3
PHY130	Physics I	3	Phys 11A	Gen. Physics	3
PHY132	Physics I Lab	1	Phys 11B	Gen. Physics Lab	1
			ENGG 19 (+)	Tech. & Society	3

## SCCC Course - Third Semester -FALL 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
DRF114	AutoCAD I	3	ENGG 112	Engg. Drawing	2
ENS118	Engineering Mechanics: Statics	3	ENGG 25	Statics	3
ENS233	Electrical Engineering Circuit Analysis	4	ENGG 30	Engg. Circuit Analysis	3
			ENGG 34 (-)	Circuit Analysis Lab	1
MAT204	Differential Equations	4	MATH 131	Differential Equations	3
PHY230	Physics II	3	Phys 12A	Gen. Physics	3
PHY232	Physics II Lab	1	Phys 12B	Gen. Physics Lab	1
			ENGG 27 (+)	Engineering Materials	3

## SCCC Course - First Semester -Spring 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
ENS119	Engineering Mechanics Dynamics	3	ENGG 26	Dynamics	3
	History Elective	3	Elective	Soc Sci/Humanities	3
MAT203	Calculus with Analytical Geometry III	4	MATH 73	Calculus III	4
PHYS245 (-)	*Physics III	3			
PHYS246 (-)	*Physics III Lab	1			
			ENGG 28 (+)	Strength of Materials	3
			ENGG 113 (+)	Thermodynamics	3

(+) Hofstra Requires

(-) Hofstra Does Not Require

\*Credit will transfer but not towards this major

# Mechanical Engineering Major

## SCCC Course - First Semester -FALL 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
COL101 (-)	Freshman Seminar	1			
CHE133	College Chem I	4	Chem 3A	Gen Chem	3
			Chem 3B	Gen Chem Lab	1
ENG101	Standard Freshman Composition	3	WSC 1	Composition	3
ENS112	Introduction to Engineering Design	2	ENGG 15	Design, Human-World	2
MAT141	Calculus with Analytic Geometry I	4	MATH 71	Calculus I	4

## SCCC Course - Second Semester -Spring 1

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
CHE134	College Chem II	4	Chem4A (-)	General Chemistry II	3
ENG102	Introduction to Literature	3	WSC 2	Composition	3
MAT142	Calculus with Analytic Geometry II	4	MATH 72	Calculus II	4
ENS117	Engineering Computations	3	ENGG 10	Comp. Prog. For Engg	3
PHY130	Physics I	3	Phys 11A	Gen. Physics	3
PHY132	Physics I Lab	1	Phys 11B	Gen. Physics Lab	1
			ENGG 19 (+)	Tech. & Society	3

## SCCC Course - Third Semester -FALL 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
DRF114	AutoCAD I	3	ENGG 112	Engg. Drawing	2
ENS118	Engineering Mechanics: Statics	3	ENGG 25	Statics	3
ENS233	Electrical Engineering Circuit Analysis	4	ENGG 30	Engg. Circuit Analysis	3
			ENGG 34	Circuit Analysis Lab	1
MAT204	Differential Equations	4	MATH 131	Differential Equations	3
PHY230	Physics II	3	Phys 12A	Gen. Physics	3
PHY232	Physics II Lab	1	Phys 12B	Gen. Physics Lab	1
			ENGG 27 (+)	Engineering Materials	3

## SCCC Course -Fourth Semester -Spring 2

Course #	Description	Credits	Course #	Hofstra Equivalent Description	Credits
ENS119	Engineering Mechanics Dynamics or * Engineering Elective	3	ENGG 26	Dynamics	3
	History Elective	3	Elective	Soc Sci/Humanities	3
MAT203	Calculus with Analytical Geometry III	4	MATH 73	Calculus III	4
PHYS245 (-)	*Physics III	3			
PHYS246 (-)	*Physics III Lab	1			
			ENGG 28 (+)	Strength of Materials	3
			ENGG 113 (+)	Thermodynamics	3

(+) Hofstra Requires

(-) Hofstra Does Not Require

\*Credit will transfer but not towards this major

# Engineering Department

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Associate Professor Puerzer, *Chairperson*  
Professors Burghardt, Craig, Ghorayeb, Kwong, Rabbany, Weissman  
Associate Professors Caputi, Goldberg, Hunter, Rooney  
Assistant Professors de Guzman, Miranda, Vaccaro

The Jean Nerken Distinguished Professorship In Engineering is held by Dr. Sina Y. Rabbany, Professor of Engineering. See Endowed Chairs and Distinguished Professorships.

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## Mission Statement

The Department of Engineering at Hofstra University offers three ABET-accredited degree programs: a Bachelor of Engineering in Engineering Science, a Bachelor of Science in Electrical Engineering, and a Bachelor of Science in Mechanical Engineering. In addition, we offer interdisciplinary degree programs leading to a Bachelor of Science in Industrial Engineering and a Bachelor of Arts in Engineering Science.

Since all degrees are offered under the aegis of a single department, the organizational structure fosters collegiality among faculty of different programs and ensures that all students are exposed to a variety of engineering disciplinary perspectives. The knowledge base encompassed by engineering is constantly expanding, but the fundamental skills and aptitudes which a four-year undergraduate program can hope to impart to graduates remain the same, regardless of time or of specific degree. They include a solid grounding in mathematics as a language to express scientific laws, in applied physics as represented primarily in the engineering sciences, in engineering design integrated throughout the curriculum but especially demonstrated through participation in capstone team projects, and in a well-chosen variety of social sciences and humanities.

Technological advances generated by the engineering profession have foreseen and unforeseen effects on human culture and civilization. The broadly educated Hofstra engineering graduate will mirror the multifaceted engineer/builder envisioned in classical times by Vitruvius, and will therefore be best situated to assess the consequences of the societal changes constantly being wrought by the profession. The department benefits from an active relationship with professionals through its Industry Advisory Board, which assists in maintaining the vision of its programs.

## Department of Engineering Student Outcomes

While adhering to the general philosophy outlined above, each degree program which seeks ABET accreditation is committed to ensuring that its graduates exhibit a range of abilities indicative of a successful member of the engineering community. These include:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;

- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context;
- i. Recognition of the need for, and an ability to engage in, lifelong learning;
- j. A knowledge of contemporary issues; and
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Students matriculate in an ambiance of small class size, excellent student-faculty interaction, and easy access to all laboratory facilities for research and design projects. All students, part-time as well as full-time, are assigned a faculty adviser in their general field of interest, and may choose from a range of engineering and science electives to build a foundation for the engineering career of their choice. For some the goal will be graduate study in a specialized area of engineering, such as civil, electrical, mechanical or biomedical; for others, a position in industry or government research, development and design.

ROTC scholarship engineering majors, who must take additional courses in Military Science, may be funded for a total of five years while completing their engineering degree.

### **Technology and Public Policy (TPP) Courses**

These courses were formulated in response to the perceived needs of industry, government and business. The objectives are:

1. Establish the relationship between technology and public policy by focusing on the utilization of technology for the fulfillment of societal needs;
2. Examine the impact and pervasiveness of existing and potential technology on society;
3. Evaluate the converse concept of the role of technological developments in influencing and producing changes in public policy; and
4. Determine the effect of public policy on the stimulation, control and regulation of technology as applied to social, economic, political and national defense problems.

The courses are designed to provide students with the opportunity to develop a minor in conjunction with one of several disciplines, such as chemistry, communication arts, computer science, economics, engineering, history, mathematics, philosophy or political science.

# Electrical Engineering, BS Major in

This program is intended for students who wish intensive study at the undergraduate level to develop proficiency in the field of electrical engineering. The curriculum provides a broad foundation in engineering, mathematics, physics and liberal arts. The broad range of Hofstra University resources in the humanities and social sciences make the liberal arts component especially enlightening.

They will develop design skills progressively, beginning with their first courses in circuit analysis and digital circuits and will apply their accumulating knowledge to practical problems throughout the curriculum. This process culminates in the capstone design course, which complements the analytical part of the curriculum.

Candidates for graduation with the BS degree in electrical engineering must fulfill the following requirements:

## Program Requirements - Total Semester Hours: 133

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### 1. The Successful Completion of 133 Semester Hours

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The successful completion of 133 s.h. in Electrical Engineering and a cumulative grade point average of 2.0 in work completed at Hofstra. Military Science may not be counted toward this total semester hour requirement.

### 2. Liberal Arts

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At least 68 semester hours must be completed in the liberal arts, with at least 48 of these semester hours taken outside of engineering.

### 3. Residence Requirements

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There are two requirements that must ordinarily be completed in residence at Hofstra: 15 semester hours in the major field of specialization and the last 30 semester hours. The 15 semester hours need not be included within the last 30 hours.

### 4. General and Major Requirements

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The general and major requirements as listed under the program below. Courses may not be taken on a Pass/D+/D/Fail basis. Transfer credit will only count toward the major for engineering courses completed with a minimum grade of C-.

## Notes

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This program is intended for students who wish intensive study at the undergraduate level to develop proficiency in the field of electrical engineering. The curriculum provides a broad foundation in engineering, mathematics, physics and liberal arts. The broad range of Hofstra University resources in the humanities and social sciences make the liberal arts component especially enlightening.

They will develop design skills progressively, beginning with their first courses in circuit analysis and digital circuits and will apply their accumulating knowledge to practical problems throughout the curriculum. This process culminates in the capstone design course, which complements the analytical part of the curriculum.

## Program Educational Objectives

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Graduates of the program will:

- Become successful practitioners in electrical engineering.
- Apply their liberal arts background to business and social situations.
- Continue to develop intellectually.
- Acclimate to the business environment.

The 11 generic indicators of achievement listed under the Department of Engineering student outcomes apply specifically to electrical engineering graduates, as a measure of the program's effectiveness in meeting its stated objectives.

In addition to fulfilling the degree requirements listed above, the following courses must be successfully completed: WSC 001 or placement examination\* and WSC 002; 3 hours in literature, literature in translation or comparative literature (chosen from Distribution Courses designated LT); 3 hours in behavioral social sciences (chosen from distribution courses designated BH); 3 hours in history, philosophy, religion in social sciences (chosen from distribution courses designated HP), and 6 hours in humanities or social sciences. Students transferring in with previous social science/humanities credits may use them in place of distribution requirements in the same category as the transferred credits.

## Courses

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- MATH 071 - (MA) Analytic Geometry and Calculus I Semester Hours: 4
- MATH 072 - (MA) Analytic Geometry and Calculus II Semester Hours: 4
- MATH 073 - (MA) Analytic Geometry and Calculus III Semester Hours: 4

- MATH 131 - (MA) Elementary Differential Equations Semester Hours: 3
- MATH 144 - (MA) Engineering Mathematics II Semester Hours: 3
- PHYS 011A - (NS) General Physics Semester Hours: 4
- PHYS 011B - (NS) General Physics Laboratory Semester Hours: 1
- PHYS 012A - (NS) General Physics Semester Hours: 4
- PHYS 012B - (NS) General Physics Laboratory Semester Hours: 1
- CHEM 003A - (NS) General Chemistry I Semester Hours: 3-4
- CHEM 003B - (NS) General Chemistry Laboratory I Semester Hours: 1
- ENGG 010 - Computer Programming for Engineers Semester Hours: 3
- ENGG 015 - (NS) Designing the Human-Made World Semester Hours: 3
- ENGG 019 - Technology and Society Semester Hours: 3
- ENGG 025 - Mechanics: Statics Semester Hours: 3
- ENGG 027 - Engineering Materials Semester Hours: 3
- ENGG 030 - Engineering Circuit Analysis Semester Hours: 3
- ENGG 032A - Logical Design and Digital Circuits Semester Hours: 3
- ENGG 032B - Digital Circuits Laboratory Semester Hours: 1
- ENGG 033 - Electronic Circuits Semester Hours: 3
- ENGG 034 - Circuit Analysis Laboratory Semester Hours: 1
- ENGG 036 - Microprocessor Systems Semester Hours: 3
- ENGG 104 - Engineering Electromagnetics Semester Hours: 3
- ENGG 111 - Electromagnetic Waves and Transmission Semester Hours: 3
- ENGG 113 - Engineering Thermodynamics Semester Hours: 3
- ENGG 143J - Electrical and Computer Engineering Design Semester Hours: 2
- ENGG 143K - Electrical and Computer Engineering Design Semester Hours: 1
- ENGG 150 - (MA) Engineering Mathematics I Semester Hours: 3
- ENGG 171 - Principles of Communication Systems and Noise Semester Hours: 3
- ENGG 176 - Network Analysis Semester Hours: 3
- ENGG 177 - Signals and Linear Systems Semester Hours: 3
- ENGG 178 - Communication Networks Laboratory Semester Hours: 1
- ENGG 189 - Random Signal Analysis Semester Hours: 3
- ENGG 192 - Electronics Laboratory Semester Hours: 1
- ENGG 193 - Electronic and Feedback Networks Semester Hours: 3
- ENGG 194 - Advanced Electronic Circuits Semester Hours: 3
- ENGG 195 - Advanced Electronics Laboratory Semester Hours: 1
- TPP 112 - Technology and Human Values Semester Hours: 3
- WSC 001 - Composition Semester Hours: 3-4
- WSC 002 - Composition Semester Hours: 3
- 12 hours in technical electives†

## Cumulative Average

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A cumulative average of C or better is required in the following courses, while a cumulative average of C or better is required in all engineering courses.

- ENGG 030 - Engineering Circuit Analysis Semester Hours: 3
- ENGG 032A - Logical Design and Digital Circuits Semester Hours: 3
- ENGG 033 - Electronic Circuits Semester Hours: 3
- ENGG 036 - Microprocessor Systems Semester Hours: 3
- ENGG 104 - Engineering Electromagnetics Semester Hours: 3

- ENGG 176 - Network Analysis Semester Hours: 3
- ENGG 177 - Signals and Linear Systems Semester Hours: 3
- ENGG 193 - Electronic and Feedback Networks Semester Hours: 3

## Suggested Four-Year Sequence - Total Hours: 133

### First Year

	1st. Sem.	2nd. Sem.
<u>ENGG 015, 010</u>	6	-
<u>ENGG 019</u>	-	3
<u>CHEM 003A, 003B</u>	4	-
<u>WSC 001, 002</u>	3	3
<u>MATH 071, 072</u>	4	4
<u>PHYS 011A, 011B</u>	-	5
<b>Total</b>	<b>17</b>	<b>15</b>

### Second Year

	1st Sem.	2nd Sem.
<u>ENGG 025, 032A</u>	3	3
<u>ENGG 030, 027</u>	6	-
<u>ENGG 034</u>	-	1
<u>MATH 073, 131</u>	4	3
<u>PHYS 012A, 012B</u>	5	-
<u>TPP 112</u>	-	3
<u>Social science or humanities **</u>	-	3
<u>Literature or literature in translation **</u>	-	3
<b>Total</b>	<b>18</b>	<b>16</b>

### Third Year

	1st Sem.	2nd Sem.
<u>ENGG 036, 104</u>	3	3
<u>ENGG 176, 177</u>	3	3
<u>ENGG 189</u>	-	3
<u>ENGG 033</u>	3	-
<u>ENGG 032B, 193</u>	1	3
<u>ENGG 150</u>	3	-



MATH 144	-	3
Social science or humanities **	3	-
Total	16	15

## Fourth Year

	1st Sem.	2nd Sem.
ENGG 111, 113	3	3
ENGG 143J, 143K	2	1
ENGG 171, 178	3	1
ENGG 192	1	-
ENGG 194, 195	-	4
Social science or humanities **	3	3
Technical electives†	6	6
Total	18	18

## Footnotes

\*If this requirement is fulfilled by passing the placement examination, 3 s.h. in the humanities or social sciences should be taken with adviser's approval.

\*\*With adviser's approval.

†Electrical engineering majors will choose four technical electives from the following list of courses: ENGG 035, 101, 153, 166B, 172, 173, 174, 179, 180, 187, 190, 191; one technical elective must be a design course: ENGG 172, 173 or 180.

# Engineering Science, BA Major in

This program is designed for those students who wish to combine elements of a fundamental engineering program with those of a broad liberal arts program. In addition to meeting the degree requirements for the BA, students are required to earn a cumulative average of C or better in engineering courses. Students pursuing this degree must choose either the Biomedical Engineering Option or the Production and Manufacturing Option.

## Program Requirements

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### Biomedical Engineering Option

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The Biomedical Engineering option of this degree has been created for those students whose career goals are directed toward medicine, but with a strong analytical element provided by engineering course work.

### Suggested Sequence

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#### BA Major in Engineering Science With a Biomedical Engineering Option

##### First Year

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	First Semester	Second Semester
CHEM <u>3A, 3B, 4A, 4B</u>	4	4
ENGG <u>10, 15, 112</u>	5	3
MATH <u>71, 72</u>	4	4
PHYS <u>11A, 11B</u>	-	5
WSC <u>1</u> (or placement examination) (See footnote†)	3-4	-
<b>TOTAL</b>	<b>16</b>	<b>16</b>

##### Second Year

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	First Semester	Second Semester
BIO <u>11</u>	-	4
ENGG <u>25, 27, 28, 81</u>	6	6
MATH <u>73</u>	4	-

PHYS 12A, 12B	5	-
WSC 2 (or placement examination) (See footnote†)	-	3
Social Science Distribution Elective Credits	-	3
<b>TOTAL</b>	<b>15</b>	<b>16</b>

### Third Year

	First Semester	Second Semester
BIO 12	4	-
CHEM 131A, 131B, 132A, 132B	4	4
ENGG 30, 34, 113, 182	3	7
Humanities Distribution Credits	3	3
Language Requirement Credits (See footnote†)	3	3
<b>TOTAL</b>	<b>17</b>	<b>17</b>

### Fourth Year

	First Semester	Second Semester
ENGG 166B, 183	3	3
Humanities Distribution Credits	3	-
Language Requirement Credits (See footnote†)	3	3
Social Science Distribution, Cross- Cultural Distribution Credits	6	3
Technical Electives Credits	-	6
<b>TOTAL</b>	<b>15</b>	<b>15</b>

### Production and Manufacturing Option

The Production and Manufacturing Option of this degree has been created for those students whose career goals are directed toward business administration, especially in manufacturing or production.

## Suggested Sequence

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### BA Major in Engineering Science With a Production and Manufacturing Option

#### First Year

	First Semester	Second Semester
CHEM <u>3A, 3B</u>	4	-
ENGG <u>10, 15, 112</u>	5	3
MATH <u>71, 72</u>	4	4
PHYS <u>11A, 11B</u>	-	5
WSC <u>1, 2</u> (or placement examination) (See footnote†)	3-4	3
<b>TOTAL</b>	<b>16</b>	<b>15</b>

#### Second Year

	First Semester	Second Semester
ECO <u>1</u>	-	3
ENGG <u>25, 26, 28, 32A, 32B</u>	3	10
MATH <u>73, 131</u>	4	3
PHYS <u>12A</u>	4	-
Social Science Distribution Elective Credits	3	-
SPCM <u>1</u>	3	-
<b>TOTAL</b>	<b>17</b>	<b>16</b>

#### Third Year

	First Semester	Second Semester
ACCT <u>101</u>	3	-
ENGG <u>30, 36, 113, 160A</u>	6	4
FIN <u>101</u>	3	-
Language Requirement Credits (See footnote†)	3	3
LEGL <u>20</u>	-	3
Literature Distribution or Literature in Translation Credits (See footnote††)	3	3
MGT <u>101</u>	-	3

<b>TOTAL</b>	<b>18</b>	<b>16</b>
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#### **Fourth Year**

	<b>First Semester</b>	<b>Second Semester</b>
ENGG <u>19, 27, 100, 119</u>	6	6
Language Requirement Credits (See footnote†)	3	3
MKT <u>101, 124</u>	3	3
Social Science Distribution, Cross-Cultural Distribution Credits	6	3
<b>TOTAL</b>	<b>18</b>	<b>15</b>

#### **Footnotes († and ††)**

†For BA requirements, see below.

††For literature distribution requirements, see Distribution Courses.

# Engineering Science, BE Major in

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology

This program reflects the need within a broad-based engineering curriculum, for a diversity of offerings reflecting the diversity of careers in the engineering field today. Engineering today encompasses many new technologies, but the core educational requirements remain a thorough grounding in mathematics, physical sciences, engineering sciences and design. The Engineering Science degree then allows students to specialize in one of two options: biomedical or civil. Both options integrate design throughout the curriculum, beginning with the first year, and culminating in a year-long major senior-level design project.

## Program Educational Objectives

Graduates of the program will:

1. A. Become successful practitioners in biomedical engineering.  
B. Become successful practitioners in civil engineering.
2. Apply their liberal arts background to business and society.
3. Continue to develop intellectually.
4. Acclimate to the business environment.

The 11 generic indicators of achievement listed under Department of Engineering student outcomes apply specifically to graduates of each option within the Engineering Science degree program, as a measure of the program's effectiveness in meeting its stated objectives.

## Biomedical Option

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Professor Rabbany, *Adviser*

Biomedical engineering or bioengineering is designed to bridge the gap between the life sciences and physical sciences by applying engineering concepts, methods and techniques to biology and medicine. An understanding of fundamental physiological processes using engineering methodology requires a broad background in basic engineering, sciences and mathematics. Two emphases (biomechanics and bioelectricity) are available to the students, differing from each other by five courses.

## Biomechanics

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In the biomechanics area required courses include:

- ENGG 026 - Mechanics: Dynamics Semester Hours: 3
- ENGG 114 - Heat Transfer Semester Hours: 3
- ENGG 115 - Fluid Mechanics Semester Hours: 3
- ENGG 163 - Mechanics of Solids and Properties of Materials Laboratory Semester Hours: 1
- and
- ENGG 169 - Fluid Mechanics Laboratory Semester Hours: 1

- or
- ENGG 170 - Thermodynamics/Heat Transfer Laboratory Semester Hours: 1
- 
- 7 hours in technical electives†

## **Bioelectricity**

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In the bioelectricity area these courses are replaced by:

- ENGG 032A - Logical Design and Digital Circuits Semester Hours: 3
- ENGG 032B - Digital Circuits Laboratory Semester Hours: 1
- ENGG 033 - Electronic Circuits Semester Hours: 3
- ENGG 104 - Engineering Electromagnetics Semester Hours: 3
- ENGG 192 - Electronics Laboratory Semester Hours: 1
- 
- 7 hours in technical electives††

## **Biomedical Option Candidates for Graduation Must Fulfill the Following Requirements:**

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### **1. Total Semester Hours: Minimum of 131**

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The successful completion of at least 131 semester hours, excluding Military Science, completed at Hofstra.

### **2. Liberal Arts Semester Hour Requirement: Minimum of 68**

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At least 68 semester hours must be completed in the liberal arts, with at least 48 of these semester hours taken outside of engineering.

### **3. Residence Requirement**

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There are two requirements that must ordinarily be completed in residence at Hofstra: 15 semester hours in the major field of specialization and the last 30 semester hours. The 15 semester hours need not be included within the last 30 hours.

### **4. General and Major Requirements**

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The following general and major requirements: WSC 001 or placement examination\* and WSC 002; 3 hours in literature, literature in translation or comparative literature (chosen from distribution courses designated LT); 3 hours in behavioral social sciences (chosen from distribution courses designated BH), 3 hours in history, philosophy, religion in social sciences (chosen from distribution courses designated HP) and 6 hours in humanities or social sciences. Students transferring in with previous social science/humanities credits may use them in place of distribution requirements in the same category as the transferred credits.

Courses may not be taken on a Pass/D+/D/Fail basis. Transfer credit will only count toward the major for engineering courses completed with a minimum grade of C-.

A cumulative average of C or better is required in the courses: ENGG 025, 026 or 033, 027, 028, 030, 100, 113, 115 or 032A; a cumulative average of C or better is required in all engineering courses. Reflecting the fact that not all full-time students can and do adhere to a four year time frame for degree completion, the suggested sequence below shows a possible alignment of courses within that compass.

- BIO 011 - (NS) Introductory Cell Biology and Genetics Semester Hours: 4
- BIO 012 - (NS) Animal Form and Function Semester Hours: 4
- CHEM 003A - (NS) General Chemistry I Semester Hours: 3-4
- CHEM 003B - (NS) General Chemistry Laboratory I Semester Hours: 1
- ENGG 010 - Computer Programming for Engineers Semester Hours: 3
- ENGG 015 - (NS) Designing the Human-Made World Semester Hours: 3
- ENGG 019 - Technology and Society Semester Hours: 3
- ENGG 025 - Mechanics: Statics Semester Hours: 3
- ENGG 026 - Mechanics: Dynamics Semester Hours: 3
- or
- ENGG 033 - Electronic Circuits Semester Hours: 3
- ENGG 027 - Engineering Materials Semester Hours: 3
- ENGG 028 - Strength of Materials Semester Hours: 3
- ENGG 030 - Engineering Circuit Analysis Semester Hours: 3
- ENGG 034 - Circuit Analysis Laboratory Semester Hours: 1
- ENGG 081 - Introduction to Bioengineering Semester Hours: 3
- ENGG 100 - Engineering Economy Semester Hours: 3
- ENGG 101 - (MA) Numerical Methods I Semester Hours: 3
- ENGG 113 - Engineering Thermodynamics Semester Hours: 3
- ENGG 114 - Heat Transfer Semester Hours: 3
- or
- ENGG 104 - Engineering Electromagnetics Semester Hours: 3
- ENGG 115 - Fluid Mechanics Semester Hours: 3
- or
- ENGG 032A - Logical Design and Digital Circuits Semester Hours: 3
- ENGG 143A - Civil Engineering Design A Semester Hours: 3
- ENGG 143G - Independent Engineering Design B Semester Hours: 3
- ENGG 150 - (MA) Engineering Mathematics I Semester Hours: 3
- ENGG 160A - Measurements and Instrumentation Laboratory Semester Hours: 1
- ENGG 163 - Mechanics of Solids and Properties of Materials Laboratory Semester Hours: 1
- or
- ENGG 032B - Digital Circuits Laboratory Semester Hours: 1
- ENGG 166B - Medical Instrumentation Semester Hours: 3
- ENGG 169 - Fluid Mechanics Laboratory Semester Hours: 1



- or
- ENGG 170 - Thermodynamics/Heat Transfer Laboratory Semester Hours: 1
- or
- ENGG 192 - Electronics Laboratory Semester Hours: 1
- ENGG 182 - Biomechanics and Biomaterials Semester Hours: 3
- ENGG 183 - Cell and Tissue Engineering Semester Hours: 3
- MATH 071 - (MA) Analytic Geometry and Calculus I Semester Hours: 4
- MATH 072 - (MA) Analytic Geometry and Calculus II Semester Hours: 4
- MATH 073 - (MA) Analytic Geometry and Calculus III Semester Hours: 4
- MATH 131 - (MA) Elementary Differential Equations Semester Hours: 3
- PHYS 011A - (NS) General Physics Semester Hours: 4
- PHYS 011B - (NS) General Physics Laboratory Semester Hours: 1
- PHYS 012A - (NS) General Physics Semester Hours: 4
- TPP 112 - Technology and Human Values Semester Hours: 3
- WSC 001 - Composition Semester Hours: 3-4
- WSC 002 - Composition Semester Hours: 3
- 7 hours in technical electives.

## Recommended Sequence - Biomedical Option - Total Semester Hours: 131

Reflecting the fact that not all full-time students can and do adhere to a four year time frame for degree completion, the suggested sequence below shows a possible alignment of courses within that compass.

### First Year

	1st Sem.	2nd. Sem.
<u>ENGG 015, 010</u>	6	-
<u>ENGG 019</u>	-	3
<u>CHEM 003A , 003B</u>	4	-
<u>WSC 001, 002</u>	3	3
<u>MATH 071, 072</u>	4	4
<u>PHYS 011A, 011B</u>	-	5
<b>Total</b>	<b>17</b>	<b>15</b>

### Second Year

	1st Sem.	2nd. Sem.
<u>ENGG 025, 028</u>	3	3
<u>ENGG 030</u>	3	-
<u>ENGG 081</u>	-	3
<u>BIO 011, 012</u>	4	4

MATH 073, 131	4	3
PHYS 012A	4	-
Social science or humanities **	-	3
Total	18	16

### Third Year

	1st. Sem.	2nd. Sem.
ENGG 026 or 033	3	-
ENGG 027	3	-
ENGG 034	1	-
ENGG 113, 115 or 032A	3	3
ENGG 160A, 163 or 032B	1	1
ENGG 182	-	3
ENGG 150	3	-
ENGG 101	-	3
Literature or literature in translation **	-	3
Social science or humanities **	3	-
Technical electives	-	4
Total	17	17

### Fourth Year

	1st. Sem.	2nd. Sem.
ENGG 100	3	-
ENGG 114 or 104	-	3
ENGG 143A, 143G	3	3
ENGG 166B, 183	3	3
ENGG 169 or 170 or 192	1	-
TPP 112	3	-
Social science or humanities **	3	3
Technical electives	-	3
Total	16	15

### Civil Option

Associate Professor Hunter, *Adviser*

Civil engineering shares with military engineering the distinction of being the earliest of the engineering disciplines. Today's civil engineer is concerned with a broad spectrum of problems relating to structures and the infrastructures of modern society. The civil option provides a thorough preparation and professional training in the fundamentals of engineering and related fields with a major thrust in structural analysis and design. All civil option degree candidates must register for the Engineering Fundamentals Examination prior to graduation.

## **Civil Option Candidates for Graduation Must Fulfill the Following Requirements:**

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### **1. Total Semester Hours: Minimum of 131**

---

The successful completion of at least 131 semester hours, excluding Military Science, completed at Hofstra.

### **2. Liberal Arts Semester Hour Requirement: Minimum of 68**

---

At least 68 semester hours must be completed in the liberal arts, with at least 48 of these semester hours taken outside of Engineering.

### **3. Residence Requirement**

---

There are two requirements that must ordinarily be completed in residence at Hofstra: 15 semester hours in the major field of specialization and the last 30 semester hours. The 15 semester hours need not be included within the last 30 hours.

### **4. General and Major Requirements**

---

The following general and major requirements: WSC 001 or placement examination\* and WSC 002; 3 hours in literature, literature in translation or comparative literature (chosen from distribution courses designated LT); 3 hours in behavioral social sciences (chosen from distribution courses designated BH), 3 hours in history, philosophy, religion in social sciences (chosen from distribution courses designated HP) and 6 hours in humanities or social sciences. Students transferring in with previous social science/humanities credits may use them in place of distribution requirements in the same category as the transferred credits.

Courses may not be taken on a Pass/D+/D/Fail basis. Transfer credit will only count toward the major for engineering courses completed with a minimum grade of C-.

A cumulative average of C or better is required in the courses: ENGG 025, 026, 027, 028, 030, 100, 113, 115 ; a cumulative average of C or better is required in all engineering courses. Reflecting the fact that not all full-time students can and do adhere to a four year time frame for degree completion, the suggested sequence below shows a possible alignment of courses with in that compass

- CHEM 003A - (NS) General Chemistry I Semester Hours: 3-4
- CHEM 003B - (NS) General Chemistry Laboratory I Semester Hours: 1
- ENGG 010 - Computer Programming for Engineers Semester Hours: 3
- ENGG 015 - (NS) Designing the Human-Made World Semester Hours: 3
- ENGG 019 - Technology and Society Semester Hours: 3
- ENGG 025 - Mechanics: Statics Semester Hours: 3
- ENGG 026 - Mechanics: Dynamics Semester Hours: 3
- ENGG 027 - Engineering Materials Semester Hours: 3
- ENGG 028 - Strength of Materials Semester Hours: 3
- ENGG 030 - Engineering Circuit Analysis Semester Hours: 3
- ENGG 034 - Circuit Analysis Laboratory Semester Hours: 1
- ENGG 047 - Environmental Engineering Semester Hours: 3
- ENGG 062 - Environmental Unit Operations Laboratory Semester Hours: 1
- ENGG 100 - Engineering Economy Semester Hours: 3
- ENGG 112 - Engineering Drawing Semester Hours: 2
- ENGG 113 - Engineering Thermodynamics Semester Hours: 3
- ENGG 115 - Fluid Mechanics Semester Hours: 3
- ENGG 120 - Transportation Engineering I Semester Hours: 3
- ENGG 132 - Structural Analysis I Semester Hours: 3
- ENGG 135 - Design of Reinforced Concrete Structures Semester Hours: 3
- ENGG 136 - Hydraulic Engineering and Water Resources Semester Hours: 3
- ENGG 143A - Civil Engineering Design A Semester Hours: 3
- ENGG 143G - Independent Engineering Design B Semester Hours: 3
- ENGG 147 - Soil Mechanics and Foundations Semester Hours: 3
- ENGG 150 - (MA) Engineering Mathematics I Semester Hours: 3
- ENGG 160A - Measurements and Instrumentation Laboratory Semester Hours: 1
- ENGG 163 - Mechanics of Solids and Properties of Materials Laboratory Semester Hours: 1
- ENGG 169 - Fluid Mechanics Laboratory Semester Hours: 1
- MATH 071 - (MA) Analytic Geometry and Calculus I Semester Hours: 4
- MATH 072 - (MA) Analytic Geometry and Calculus II Semester Hours: 4
- MATH 073 - (MA) Analytic Geometry and Calculus III Semester Hours: 4
- MATH 131 - (MA) Elementary Differential Equations Semester Hours: 3
- MATH 144 - (MA) Engineering Mathematics II Semester Hours: 3
- or
- ENGG 101 - (MA) Numerical Methods I Semester Hours: 3
- PHYS 011A - (NS) General Physics Semester Hours: 4
- PHYS 011B - (NS) General Physics Laboratory Semester Hours: 1
- PHYS 012A - (NS) General Physics Semester Hours: 4
- TPP 112 - Technology and Human Values Semester Hours: 3
- WSC 001 - Composition Semester Hours: 3-4
- WSC 002 - Composition Semester Hours: 3
- 9 hours technical electives

## Recommended Sequence - Civil Option - Total Semester Hours: 131

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### First Year

	1st. Sem.	2nd. Sem.
ENGG 015, 010	6	-
ENGG 019	-	3
CHEM 003A, 003B	4	-
WSC 001, 002	3	3
MATH 071, 072	4	4
PHYS 011A, 011B	-	5
<b>Total</b>	<b>17</b>	<b>15</b>

### Second Year

	1st. Sem.	2nd. Sem.
ENGG 025, 026	3	3
ENGG 028	-	3
ENGG 112	-	2
MATH 073, 131	4	3
PHYS 012A	4	-
Literature or literature in translation **	-	3
Social science or humanities **	6	3
<b>Total</b>	<b>17</b>	<b>17</b>

### Third Year

	1st. Sem.	2nd. Sem.
ENGG 027, 047	3	3
ENGG 030, 034	3	1
ENGG 113, 115	-	6
ENGG 132, 135, 147	6	3
ENGG 160A, 163	1	1
ENGG 150	3	-
MATH 144 or ENGG 101	-	3
<b>Total</b>	<b>16</b>	<b>17</b>

## Fourth Year

	1st. Sem.	2nd. Sem.
ENGG 062, 120	1	3
ENGG 100, 136	3	3
ENGG 143A, 143G	3	3
ENGG 169	1	-
TPP 112	3	-
Social science or humanities **	-	3
Technical electives	6	3
Total	17	15

## Footnotes

\*If this requirement is fulfilled by passing the placement examination, 3 s.h. in the humanities or social sciences should be taken with adviser's approval.

\*\*With adviser's approval.

† Biomechanical option will choose technical electives from the following list of courses: BCHM 162; CHEM 135; ENGG 112, 116, 129, 130, 131, 187, 197 A-Z, 198.

†† Bioelectricity option will choose technical electives from the following list of courses: BCHM 162; CHEM 135; ENGG 036, 176, 177, 180, 187, 197 A-Z, 198.

††† Civil engineering option will choose technical electives from the following list of courses: ENGG 110, 117, 129, 131, 134.

# Mechanical Engineering, BS Major in

*Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology*

## Program Requirements - Total Semester Hours: 131

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Candidates for graduation with the BS degree in mechanical engineering must fulfill the following requirements:

### 1. The Successful Completion of 131 Semester Hours

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The successful completion of 131 s.h. and a cumulative grade point average of 2.0 in work completed at Hofstra. Military Science may not be counted toward this total semester hour requirement.

### 2. Liberal Arts

---

At least 68 semester hours must be completed in the liberal arts, with at least 48 of these semester hours taken outside of engineering.

### 3. Residence Requirements

---

There are two requirements that must ordinarily be completed in residence at Hofstra: 15 semester hours in the major field of specialization and the last 30 semester hours. The 15 semester hours need not be included within the last 30 hours.

### 4. General and Major Requirements

---

The general and major requirements as listed under the programs below. Courses may not be taken on the Pass/D+/D/Fail basis. Transfer credit will only count toward the major for engineering courses completed with a minimum grade of C-.

### General Information

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This program provides intensive study at the undergraduate level in the field of mechanical engineering. A healthy mix of theory, experiment and design informs the curriculum. Design is introduced early in the curriculum, and all graduates are expected to be broadly enough educated to complete capstone senior

design courses in two distinct areas of mechanical engineering. Extensive laboratory involvement inculcates valuable insights into experimental methods and, in some cases, original research. Through technical electives (decided on in consultation with a mechanical engineering faculty adviser) students have the opportunity to develop a greater in-depth knowledge of one or more specialized areas of mechanical engineering. In addition, the program provides a strong foundation in the engineering sciences, mathematics, and liberal arts.

## Program Educational Objectives

---

Graduates of the program will:

- Become successful practitioners in mechanical engineering.
- Apply their liberal arts background to business and society.
- Continue to develop intellectually.
- Acclimate to the business environment.

The 11 generic indicators of achievement listed under Department of Engineering student outcomes apply specifically to mechanical engineering graduates, as a measure of the program's effectiveness in meeting its stated objectives.

In addition to fulfilling the degree requirements listed in the HCLAS section of this Bulletin, the following courses must be successfully completed. WSC 001 or placement examination\* and WSC 002; 3 hours in literature, literature in translation or comparative literature (chosen from distribution courses designated LT); 3 hours in behavioral social sciences (chosen from distribution courses designated BH); 3 hours in history, philosophy, religion in social sciences (chosen from distribution courses designated HP), and 6 more hours in humanities or social sciences. Students transferring in with previous social science/humanities credits may use them in place of distribution requirements in the same category as the transferred credits. (See Distribution Courses.)

Course selection is made in conference and with the approval of a faculty adviser.

## Courses

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- CHEM 003A - (NS) General Chemistry I Semester Hours: 3-4
- CHEM 003B - (NS) General Chemistry Laboratory I Semester Hours: 1
- MATH 071 - (MA) Analytic Geometry and Calculus I Semester Hours: 4
- MATH 072 - (MA) Analytic Geometry and Calculus II Semester Hours: 4
- MATH 073 - (MA) Analytic Geometry and Calculus III Semester Hours: 4
- MATH 131 - (MA) Elementary Differential Equations Semester Hours: 3
- ENGG 185 - Methods of Random Processes Semester Hours: 3
- or CSC 185 - Methods of Random Process Semester Hours: 3
- ENGG 010 - Computer Programming for Engineers Semester Hours: 3
- ENGG 015 - (NS) Designing the Human-Made World Semester Hours: 3
- ENGG 019 - Technology and Society Semester Hours: 3
- ENGG 025 - Mechanics: Statics Semester Hours: 3
- ENGG 026 - Mechanics: Dynamics Semester Hours: 3
- ENGG 027 - Engineering Materials Semester Hours: 3



- ENGG 028 - Strength of Materials Semester Hours: 3
- ENGG 030 - Engineering Circuit Analysis Semester Hours: 3
- ENGG 034 - Circuit Analysis Laboratory Semester Hours: 1
- ENGG 100 - Engineering Economy Semester Hours: 3
- ENGG 110 - Project Management Semester Hours: 3
- ENGG 112 - Engineering Drawing Semester Hours: 2
- ENGG 113 - Engineering Thermodynamics Semester Hours: 3
- ENGG 114 - Heat Transfer Semester Hours: 3
- ENGG 115 - Fluid Mechanics Semester Hours: 3
- ENGG 139 - Thermal Engineering Semester Hours: 3
- ENGG 141 - Mechanical Analysis and Desig Semester Hours: 3
- ENGG 142 - Mechatronic System Design Semester Hours: 3
- ENGG 143D - Design of Multidisciplinary Engineering Systems Semester Hours: 3
- ENGG 143F - Mechanical Engineering Design: Thermal and Fluid Systems Semester Hours: 3
- ENGG 150 - (MA) Engineering Mathematics I Semester Hours: 3
- ENGG 160A - Measurements and Instrumentation Laboratory Semester Hours: 1
- ENGG 163 - Mechanics of Solids and Properties of Materials Laboratory Semester Hours: 1
- ENGG 169 - Fluid Mechanics Laboratory Semester Hours: 1
- ENGG 170 - Thermodynamics/Heat Transfer Laboratory Semester Hours: 1
- PHYS 011A - (NS) General Physics Semester Hours: 4
- PHYS 011B - (NS) General Physics Laboratory Semester Hours: 1
- PHYS 012A - (NS) General Physics Semester Hours: 4
- TPP 112 - Technology and Human Values Semester Hours: 3
- WSC 001 - Composition Semester Hours: 3-4
- WSC 002 - Composition Semester Hours: 3
- † 12 hours in technical electives

## Suggested Four-Year Sequence - Total Hours: 131

Reflecting the fact that not all students can and do adhere to a four year time frame for degree completion, the sequence below shows a possible alignment of courses within that compass.

### First Year

	1st Sem.	2nd. Sem.
<u>ENGG 015, 010</u>	6	-
<u>ENGG 019</u>	-	3
<u>CHEM 003A, 003B</u>	4	-
<u>WSC 001, 002</u>	3	3
<u>MATH 071, 072</u>	4	4
<u>PHYS 011A, 011B</u>	-	5
<b>Total</b>	<b>17</b>	<b>15</b>

## Second Year

	1st Sem.	2nd. Sem.
ENGG 025, 026	3	3
ENGG 027, 028, 113	3	6
MATH 073, 131	4	3
PHYS 012A	4	-
Literature or literature in translation **	3	-
Social science or humanities **	-	3
Total	17	15

## Third Year

	1st Sem.	2nd. Sem.
ENGG 150	-	3
ENGG 185/CSC 185	-	3
ENGG 030, 034	3	1
ENGG 112	2	-
ENGG 114, 115	3	3
ENGG 110	3	-
ENGG 160A, 163	1	1
ENGG 141, 142	3	3
Social science or humanities **	3	-
Technical elective †	-	3
Total	18	17

## Fourth Year

	1st Sem.	2nd. Sem.
ENGG 143D	3	-
ENGG 169, 170	1	1
ENGG 100	3	-
ENGG 139	3	-
ENGG 143F	-	3
TPP 112	-	3
Social science or humanities **	3	3
Technical elective †	3	6
Total	16	16

## Footnotes

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\* If this requirement is fulfilled by passing the placement examination, 3 semester hours in the humanities or social sciences should be taken with adviser's approval.

\*\* With adviser's approval.

† Mechanical engineering majors will choose four technical electives from the following list of courses:  
Mechanical engineering majors will choose four technical electives from the following list of courses:  
ENGG 032A, 035, 036, 106, 116., 119., 129, 130, 131, 132, 134, 136, 138, 140, 143E, 145, 146, 159, 174, 179, 182. Course selection made with approval of adviser.

## Cumulative Average

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A cumulative average of C or better is required in the courses below, while a cumulative average of C or better is required in all engineering courses.

- ENGG 025 - Mechanics: Statics Semester Hours: 3
- ENGG 026 - Mechanics: Dynamics Semester Hours: 3
- ENGG 027 - Engineering Materials Semester Hours: 3
- ENGG 028 - Strength of Materials Semester Hours: 3
- ENGG 113 - Engineering Thermodynamics Semester Hours: 3
- ENGG 114 - Heat Transfer Semester Hours: 3
- ENGG 115 - Fluid Mechanics Semester Hours: 3
- ENGG 141 - Mechanical Analysis and Design Semester Hours: 3

## Transfer Credit Policy

Appropriate courses completed with a minimum grade of C- or the equivalent at fully accredited institutions are transferable. Grades attained at another institution are not recorded on the Hofstra record and are not included in the grade point average to meet graduation requirements. As many as 30 elective credits graded on a pass/fail basis from another accredited institution may be transferred to Hofstra. Students transferring to Hofstra with more than 30 credits graded on a Pass/Fail basis must have the approval of the Undergraduate Academic Affairs Committee. For these students, courses graded pass/fail shall not exceed 50 percent of the total credit hours required for the degree.

1. A course deemed appropriate for transfer is one which might logically be a part of the course of study offered at Hofstra University.
2. The semester hours of transfer credit (advanced standing) allowed a transfer will not necessarily apply to the major selected by the student and may not necessarily satisfy university graduation requirements.
3. A maximum of 64 semester hours is transferable from a junior or community college with the following exceptions:
  - a. engineering programs, 69 semester hours and
4. The amount of transfer credit per course shall not exceed the amount of semester hour credit allowed at the credit granting institution.
5. Credits earned at institutions on quarter or term systems shall be prorated with the semester system.
6. Credit evaluation is completed after admission and prior to registration.
7. **NOTE:** Switching schools and/or majors might affect a student's graduation date if some of the transfer credits are no longer applicable to the new major.