EnTec | MIAMI DADE COLLEGE SCHOOL OF ENGINEERING + TECHNOLOGY

Associate in Arts Pathway to a major in Science Engineering (10904) 2015—2016

About the Major

Science engineering is an interdisciplinary degree that covers enhanced understanding and application of engineering, scientific and mathematical principals. Intimately linked with the fundamental subjects of chemistry, biology, mathematics, and physics — and in close collaboration with fellow engineering disciplines like materials science, computer science, and mechanical, electrical, and civil engineering — science engineering offers unparalleled opportunities to do great things.

Areas of Specialization

- Process modeling
- Biomechanics
- Medical Device Design
- Biioinstrumentation
- Petrochemical
- Clinical Engineering
- Biomaterials

What can I do with this degree

Many students who pursue a degree of this nature tend to go into the Biomedical engineering field of choice. Biomedical engineers are employed in the industry, in hospitals, in research facilities of educational and medical institutions, in teaching, and in government regulatory agencies. They often serve a coordinating or interfacing function, using their background in both engineering and medical fields. In industry, they may create designs where an in-depth understanding of living systems and of technology is essential.

Earn This Degree and Work as...

Position	Median Salary
Biochemist	**$81,480**
Biomedical Engineer	**$86,960**
Materials Engineer	**$85,150**
Chemical Engineer	**$102,270**

Source for position and salary information is from Bureau of Labor Statistics 2012.

Science Engineering — Suggested Program Schedule

A.A. Pathway to a major in Science Engineering Program Code 10904

Total credits required for the degree is 60.

The science engineer requires a complete and quantitative understanding of both the engineering and scientific principles underlying these technological processes. Chemical engineering includes the study of applied mathematics, material and energy balances, thermodynamics, fluid mechanics, energy and mass transfer, separations technologies, chemical reaction kinetics and reactor design, and process design.

GENERAL EDUCATION REQUIREMENTS—36 credits required

(Select the following courses)

Course	Course Title	Credits
ENC1101	English Composition 1	3
ENC1102	English Composition 2	3
SPC1017	Fundamental of Speech Communication	3
PHI2604	Critical Thinking/Ethics	3
PHI2010	Introduction to Philosophy	3
PSY2012	Introduction to Psychology	3
ECO2013	Principles of Macro-Economics	3
MAC2311	Calculus 1	5
MAC2312	Calculus 2	1
CHM1045	General Chemistry 1	3
BSC2010	Principles of Biology 1	3
MAP2302	Differential Equations (Gen. Educ. Req.)	3

MAJOR COURSE ELECTIVES– 24 credits required

Choose 24 credits of these Electives under your advisor's guidance.

MAC2312	Calculus 2	3
MAC2313	Calculus 3	4
EGN1008C	Intro to Engineering	3
CHM1045L	General Chemistry 1 Lab	2
CHM1046	General Chemistry 2	3
CHM1046L	General Chemistry 2 Lab	2
BSC2010L	Principles of Biology 1 Lab	2
PHY2048	Physics with Calculus 1	4
PHY2048L	Physics with Calculus 1 Lab	1

COMPUTER COMPETENCY

CGS1060	Intro to Microcomputer Usage	0

*Required Engineering pre-requisite courses

Classes which are required to transfer to a Engineering degree granting institution include the following:

COP2270	"C" for Engineers	4
PHY2049	Physics with Calculus 2	4
PHY2049L	Physics with Calculus 2 Lab	1
CHM2210	Organic Chemistry 1	3
CHM2210L	Organic Chemistry 1 Lab	2
CHM2211	Organic Chemistry 2	3
CHM2211L	Organic Chemistry 1 Lab	2

The following schedule is based on students beginning in one of the major semesters (Fall or Spring) and following the suggested schedule on a continuing Fall/Spring basis as prescribed by the Faculty of the Department. This however is only one of many possible methods to complete your degree. Please note that some classes may not be offered every semester as well as some may not be offered in the Summer. It is highly recommended that you seek the advice of an Engineering department advisor and/or faculty member prior to starting.

First Term — 15 Credits

ENC1101	English Composition 1	3
MAC2311	Calculus 1	5
SPC1017	Fundamentals of Speech Communication	3
CGS1060	Introduction to Microcomputers	4

Second Term — 15 Credits

ENC1102	English Composition 2	3
MAC2312	Calculus 2	4
CHM1045	General Chemistry 1	3
CHM1045L	General Chemistry 1 Lab	2
EGN1008C	Intro to Engineering	3

Third Term — 16 Credits

PHI2604	Critical Thinking/Ethics	3
MAC2313	Calculus 3	4
PHY2048	Physics with Calculus 1	4
PHY2048L	Physics with Calculus 1 Lab	1
COP2270	"C" for Engineers	4

Fourth Term — 16 Credits

PHI2010	Introduction to Philosophy	3
MAP2302	Differential Equations	3
PHY2049	Physics with Calculus 2	4
PHY2049L	Physics with Calculus 2 Lab	1
CHM1046	General Chemistry 2	3
CHM1046L	General Chemistry 2 Lab	2

Fifth Term* — 12 Credits

PSY2012	Introduction to Psychology	3
ECO2013	Principles of Macro-Economics	3
CHM2210	Organic Chemistry 1	3
CHM2210L	Organic Chemistry 1 Lab	2
BSC2010	Principles of Biology 1	3
BSC2010L	Principles of Biology 1 Lab	2

NOTE: Some classes have pre-requisite or co-requisite requirements which may or may not be listed on the program sheet. It is the students responsibility to find out which classes do have these said requirements and consult with the engineering advisor prior to starting the program.

FOR FURTHER INFORMATION

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