

## Associate in Arts Pathway to a major in Mechanical Engineering (10911) 2015—2016

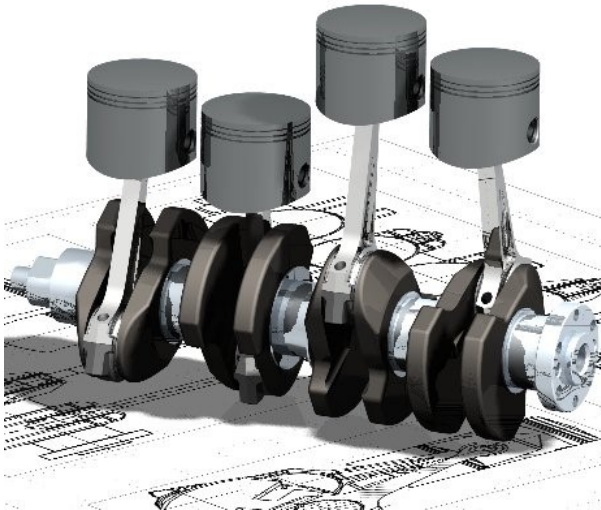
### About the Program

The Mechanical Engineering program prepares students to practice mechanical engineering in support of the design of engineered systems through the application of the fundamental knowledge, skills, and tools of mechanical engineering. They will also enhance their skills through formal education and training, independent inquiry, and professional development. The ME works independently as well as collaboratively with others, while demonstrating the professional and ethical responsibilities of the engineering profession.



### Areas of Specialization

- ◆ Mechanics and modeling
- ◆ Design and product development
- ◆ Controls, instrumentation and robotics
- ◆ Nano/Micro technology
- ◆ Energy science
- ◆ Bioengineering
- ◆ Metallurgy



### The Advantage of the Degree

Mechanical engineers use mechanics and energy principles to design machines such as engines and motors. Many mechanical engineers work in the areas of air-conditioning and refrigeration, automotive, manufacturing, welding, and robotics. They designed the robotically controlled braces that people with disabilities use to walk. They also design and develop technology for commercial aviation, the national defense, and space exploration.

### Earn This Degree and Work as...

Position	Median Salary
Mechanical Engineer	<b>\$80,580</b>
Materials Science Engineer	<b>\$85,150</b>
Aerospace Engineer	<b>\$103,720</b>
Nuclear Engineer	<b>\$104,270</b>

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

## A.A. Pathway to a major in Mechanical Engineering Program Code 10911

Total credits required for the degree is 60.

The major provides students with a broad academic base complemented by hands-on laboratory activities and cooperative education experience. Students devote their first two years to the study of mathematics, physics, chemistry, liberal arts, and engineering sciences, while gaining the necessary pre-requisites to transfer to an institution of their choice.

### 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
COP2270	"C" for Engineers	4
EGN1008C	Intro to Engineering	3
CHM1045L	General Chemistry 1 Lab	2
PHY2048	Physics with Calculus 1	4
PHY2048L	Physics with Calculus 1 Lab	1

### COMPUTER COMPETENCY

CGS1060	Intro to Microcomputer Usage	0
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### Required Engineering pre-requisite courses

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

BSC2010L	Principles of Biology 1 Lab	2
PHY2049	Physics with Calculus 2	4
PHY2049L	Physics with Calculus 2 Lab	1
EGN2312	Engineering Statics	4
EGS2321	Engineering Dynamics	4

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

15 Credits

PHI2604	Critical Thinking/Ethics	3
MAC2313	Calculus 3	4
PHY2048	Physics with Calculus 1	4
PHY2048L	Physics with Calculus 1 Lab	1
PSY2012	Introduction to Psychology	3

### Fourth Term

15 Credits

PHI2010	Introduction to Philosophy	3
MAP2302	Differential Equations	3
PHY2049	Physics with Calculus 2	4
PHY2049L	Physics with Calculus 2 Lab	1
COP2270	"C" for Engineers	4

### Fifth Term\*

12 Credits

ECO2013	Principles of Macro-Economics	3
BSC2010	Principles of Biology 1	3
BSC2010L	Principles of Biology 1 Lab	2
EGN2312	Engineering Statics	4

**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.**

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