

# ENGINEERING, INDUSTRIAL - ASSOCIATE IN SCIENCE IN ENGINEERING



## ENIN

Successful completion of this program enables qualified students to transfer to an accredited engineering curriculum and apply most credits to a Bachelor of Science degree in engineering. This program provides a firm background in basic engineering principles. The curriculum includes a strong foundation in mathematics, the basic sciences and engineering fundamentals, as well as liberal arts courses that are applicable to most Bachelor of Science degree programs.

Entrance to the program requires a mathematics placement examination at a calculus level (student is ready to take Calculus I (MATH 2141)) or the completion of Pre-Calculus Mathematics (MATH 2111). It is recommended that all applicants take a mathematics placement examination prior to the summer session.

For courses to transfer to accredited engineering programs, it is important that students adhere to the required prerequisites and corequisites. When in doubt, refer to the course descriptions (<https://catalog.ccri.edu/course-descriptions/>).

Although most courses apply to the curriculum of many B.S. in engineering programs, the course sequences and schedules listed on the following pages will allow students to apply their studies toward one of nine University of Rhode Island engineering programs. These course sequences are for full-time, day students who enter in the fall semester, allowing them to complete the Associate in Science degree requirements at CCRI in four semesters and transfer to the University of Rhode Island as a junior. For the first semester, all engineering students take all the same courses. In all other semesters, the required courses will depend upon the desired engineering program. For most engineering programs, students are required to take courses only offered by URI. For CCRI students taking 12 or more credits, up to seven of these credits can be taken per semester at URI under the inter-institutional agreement at no additional cost. See description of the agreement on this page (<https://catalog.ccri.edu/academic-information/>).

**Note:** Many courses require prerequisites, corequisites and/or testing. See course descriptions for details (<https://catalog.ccri.edu/course-descriptions/>).

Please see **Physics and Engineering Department** (<https://www.ccri.edu/physandengr/engt/>) webpage for program changes and updates.

## Program Learning Outcomes

Upon completion of this program, a student will be able to:

1. Complete a course of study that leads to successful transfer to a 4-yr ABET accredited program.
2. Apply knowledge of mathematics, science, and engineering.
3. Identify, formulate, and solve engineering problems.
4. Communicate effectively.
5. Function on project teams.

6. Design and conduct experiments as well as analyze and interpret data.
7. Demonstrate knowledge of contemporary issues.
8. Recognize and understand the need to engage in life-long learning.

## Requirements

Code	Title	Hours
<b>General Education Requirements</b>		
CHEM 1030	General Chemistry I Quantitative Literacy	MSCI; Scientific Reasoning; 5
ECON 2030	Principles of Microeconomics Quantitative Literacy	SSCI; Critical Thinking; 3
ENGL 1010	Composition I (or ENGL 1010A) Communication; Information Literacy	HUMN; Written 3
MATH 2141	Calculus I	MSCI; Scientific Reasoning; Quantitative Literacy 4
MATH 2142	Calculus II	MSCI; Scientific Reasoning; Quantitative Literacy 4
MATH 2243	Calculus III	MSCI; Scientific Reasoning; Quantitative Literacy 4
Choose ONE of the following:		
Humanities Elective ( <a href="https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/">https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/</a> ) HUMN		
Social Science Elective ( <a href="https://catalog.ccri.edu/academic-information/general-education/course-attributes/#sscigened/">https://catalog.ccri.edu/academic-information/general-education/course-attributes/#sscigened/</a> ) SSCI		
Subtotal		23
<b>Core Requirements</b>		
ENGR 1020	Introduction to Engineering & Technology	3
ENGR 2160	Introduction to Engineering Analysis	2
MATH 2362	Advanced Engineering Mathematics	4
PHYS 1150 & PHYS 1151	University Physics I and University Physics I Laboratory (Formerly PHYS 1100)	MSCI; Critical Thinking; Scientific Reasoning 4
PHYS 1500 & PHYS 1501	University Physics II and University Physics Lab II (Formerly ENGR 2150/2151)	4
Subtotal		17
<b>Industrial (ENIN)</b>		
ENGR 1030	Engineering Graphics	3
ENGR 2050	Engineering Mechanics Statics	3
Choose TWO of the following:		
ENGR 2060	Engineering Mechanics Dynamics	
ENGR 2540	Mechanics of Materials for Engineering	
ENGR 2620	Linear Electrical Systems and Circuit Theory for Engineers	
Choose ONE of the following:		
BIOL 1005	Biology in the Modern World	MSCI; Scientific Reasoning; Social and Professional Responsibilities 4-5
CHEM 1100	General Chemistry II	
PHYS 2000 & PHYS 2001	University Physics III and University Physics III Lab (Formerly PHYS 2110/2111)	
EGR 316G	Engineering Ethics (URI-Spring only) <sup>1</sup>	3
ISE 240	Manufacturing Processes and Systems (URI) <sup>1</sup>	3
ISE 241	Manufacturing Processes and Systems Lab (URI) <sup>1</sup>	1
ISE 261G	Sustainable Lean Production (URI-Fall only) <sup>1</sup>	3

Subtotal	26-27
<b>Total Hours</b>	<b>66-67</b>

<sup>1</sup> This course must be taken at URI. For CCRI students taking 12 or more credits, up to seven of these credits can be taken per semester at URI, under the inter-institutional agreement, at no additional cost. See description of the agreement on this page (<https://catalog.ccri.edu/academic-information/>).

Please see Physics and Engineering Department (<https://www.ccri.edu/physandengr/engt/>) webpage for program changes and updates.

## Recommended Course Sequence

Course	Title	Hours
<b>Prerequisites</b>		
MATH 2111	Pre-Calculus Mathematics	4
	<b>Hours</b>	<b>4</b>
	<b>Total Hours</b>	<b>4</b>

Course	Title	Hours
<b>Year 1</b>		
<b>Semester 1</b>		
Fall:		
CHEM 1030	General Chemistry I	5
ECON 2030	Principles of Microeconomics	3
ENGL 1010	Composition I (or ENGL 1010A)	3
ENGR 1020	Introduction to Engineering & Technology	3
MATH 2141	Calculus I	4
	<b>Hours</b>	<b>18</b>

<b>Semester 2</b>		
Spring:		
ENGR 1030	Engineering Graphics	3
ENGR 2050	Engineering Mechanics Statics	3
ENGR 2160	Introduction to Engineering Analysis	2
MATH 2142	Calculus II	4
PHYS 1150 & PHYS 1151	University Physics I and University Physics I Laboratory (Formerly PHYS 1100)	4
	<b>Hours</b>	<b>16</b>

<b>Year 2</b>		
<b>Semester 1</b>		
Fall:		
MATH 2243	Calculus III	4
PHYS 1500 & PHYS 1501	University Physics II and University Physics Lab II (Formerly ENGR 2150/2151)	4
Choose ONE of the following:		3
Humanities Elective ( <a href="https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/">https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/</a> )		
Social Sciences Elective		
ISE 240	Manufacturing Processes and Systems (URI) <sup>1</sup>	3
ISE 241	Manufacturing Processes and Systems Lab (URI) <sup>1</sup>	1

ISE 261G	Sustainable Lean Production (URI-Fall only) <sup>1</sup>	3
	<b>Hours</b>	<b>18</b>

### Semester 2

Spring:		
Select two of the following:		6
ENGR 2060	Engineering Mechanics Dynamics	
ENGR 2540	Mechanics of Materials for Engineering	
ENGR 2620	Linear Electrical Systems and Circuit Theory for Engineers	
Select one of the following:		4-5
BIOL 1005	Biology in the Modern World	
CHEM 1100	General Chemistry II	
PHYS 2000 & PHYS 2001	University Physics III and University Physics III Lab (Formerly PHYS 2110/2111)	
MATH 2362	Advanced Engineering Mathematics	4
EGR 316G	Engineering Ethics (URI-Spring only) <sup>1</sup>	3
	<b>Hours</b>	<b>17-18</b>
	<b>Total Hours</b>	<b>69-70</b>

<sup>1</sup> This course must be taken at URI. For CCRI students taking 12 or more credits, up to seven of these credits can be taken per semester at URI, under the inter-institutional agreement, at no additional cost. See description of the agreement on this page (<https://catalog.ccri.edu/academic-information/>).

## Transfer

Please meet with an Academic Advisor/Student Success Coach (<https://ccri.edu/advising/>) if you are interested in earning a bachelor's degree. Your Academic Advisor will help you select the courses that best prepare you for transfer to a four-year college or university.

Check out the Joint Admissions Agreement (<https://ccri.edu/jaa/>) if you are interested in transferring to Rhode Island College or the University of Rhode Island. The JAA program offers seamless transfer to RIC or URI with additional benefits. Transfer information, events, and articulations are available on the Transfer Center website ([https://ccri.edu/oes/transfer\\_center/](https://ccri.edu/oes/transfer_center/)).