Innovation Engineering

Innovation Engineering is a program that focuses on producing field-ready engineers equipped with the practical skills and knowledge demanded by today's industries.

Our program is divided into two halves, with the initial two years focusing on foundational engineering principles through four distinct "fundamental" micro-credentials. The latter two years are dedicated to advanced specialization, where students complete a 15-credit capstone sequence and pursue 2-3 additional industry-focused engineering micro-credentials.

INNOVATION ENGINEERING PROGRAM OUTCOMES

1. Engineering Analysis and Design

Graduates will demonstrate an ability to employ principles of engineering, science, and mathematics to **identify, formulate, and solve complex engineering problems** and **apply the engineering design process** to produce solutions that meet specified needs.

2. Experimentation and Engineering Judgment

Graduates will demonstrate an ability to **develop and conduct appropriate experimentation**, **acquire and apply new knowledge** as needed, **analyze and interpret data**, and use **sound engineering judgment** to draw conclusions.

3. Professionalism and Societal Impact

Graduates will demonstrate an ability to **recognize ethical and professional responsibilities** in engineering situations, and **make informed judgments** with consideration for the economic, environmental, and societal contexts, as well as local, regional, and global impacts of solutions.

4. Communication, Collaboration, and Teamwork

Graduates will demonstrate essential skills including the ability to **communicate effectively** with a range of audiences and to **function effectively within a team** whose members together provide leadership, create a collaborative environment, establish goals, plan tasks, and meet objectives.

***Full offering of this degree program is contingent on final accreditation approval by HLC, expected in Spring 2026.

Bachelor of Science with a Major in Innovation Engineering

Math recommendation, but required if not able to place directly into calculus should complete ENGR 107 Engineering Essentials or MATH 107 Precalculus. The following general education courses are recommended: PHIL 210 Ethics, GEOG 289 Introduction to GIS and ECON 201 Principles of Microeconomics.

General Education		**38**
Innovation Engineering majors are required to take the following specific courses which may also be used to help satisfy the General Education requirements. Core Science courses also contribute to General Education requirements.		
COMM 110	Fundamentals of Public Speaking	
ENGL 110	College Composition I	
ENGL 120	College Composition II	
UNIV 110	First Year Seminar	
Required Engineering coursework		
Fundamentals of Structures		
MATH 165	Calculus I	4
CSCI 160	Computer Science I	4
ENGR 201	Statics	4
ENGR 150	E-Studio I: Engineering for Industry and Research	2
Fundamentals of Machines		
MATH 446	Applied Statistics	4
ENGR 202	Dynamics	4
ENGR 190	Computer-Aided Design	2
ENGR 195	Introduction to Workplace Safety and Compliance Management	2
ENGR 160	E-Studio II: Professional Practice in Engineering	2
Fundamentals of Materials		
MATH 265	Calculus III	4

ENGR 203	Engineering Materials	4
ENGR 250	Fabrication	2
ENGR 251	Fluids and Thermodynamics	2
CHEM 121	General Chemistry I	5
ENGR 260	E-Studio III: Design and Innovation in Engineering	2
Fundamentals of Circuits		
MATH 266	Differential Equations	4
ENGR 206	Fundamentals of Electrical Engineering	4
PHYS 252	University Physics II	5
ENGR 310	E-Studio IV: Project Management	2
Engineering Practices and Research		
ENGR 240	E-Studio V: Research Methods for Engineering and Science	2
ENGR 320	E-Studio VI: Engineering Futures	1
ENGR 494	Directed Research in Engineering	6
or ENGR 397	Engineering Internship	
or ENGR 497	Engineering Cooperative Education	
ENGR 480	Engineering Capstone	2
Additional 30 credits from courses numbered 300 and above, in two microcredentials		30

Engineering Principles Concentration

ENGR 201	Statics	4
ENGR 202	Dynamics	4
ENGR 203	Engineering Materials	4
ENGR 206	Fundamentals of Electrical Engineering	4
Total Hours		**16**