

# Engineering Technology Certificate Engineering Innovation & Entrepreneurship

Course #	Course Title	Credits	Prerequisites	Semester Offered	Semester Taken	Grade Earned
ENR104	3D Mechanical Design II	4	ENR102	Spring		
MKT100 (or) ENT108	Marketing (or) Introduction to Entrepreneurship	3	ENL020 or satisfactory basic skills assessment score None	Fall, Spring Summer		
MAT250	Calculus II	4	MAT240 or MAT185	Varies		
ENR206	Quality Manufacturing	3	ENR101	Fall, Spring		
ENR201	Statics	3	ENR101 & MAT240; Co-requisite MAT250	Fall, Spring		
PHY211	University Physics I	4	MAT195; Co-requisite MAT240	Varies		
<b>Total Credits</b>		<b>21</b>				

This certificate has advanced mathematics requirements.

## Overview

Knowing how to appropriately incorporate technology innovation is crucial for creating thriving workplaces and careers. Jobs today require creativity and alternative thinking to develop new ideas for and answer to work-related problems. This certificate enables students to study the innovation process as it relates to technology from an engineering, quality control, inventory management, and material flow perspective. This is the perfect certificate for someone interested in working within and managing an innovative and efficient organization – or for someone interested in starting a new one. This certificate will teach one how to provide your products with what user's want, when they want it.

The certificates being offered within the engineering and advanced manufacturing field of studies are designed from a two layer perspective to ensure that a student's skills are aligned with industry and when appropriate academia. This particular certificate is a second tier certificate that requires that the student already possess the level one Engineering Technology Certificate (or be able to demonstrate equivalent competences). Students earning this certificate will emerge with the confidence, knowledge, and experiential skills to take an idea from concept to fruition, in the shortest time possible, with maximum waste elimination throughout the value chain.

## Career Outlook

This occupational profile is provided by O\*NET  
[www.onetonline.org/find/quick?s=engineering+innovation](http://www.onetonline.org/find/quick?s=engineering+innovation)

## Program Outcomes

Upon completion of the Engineering Innovation and Entrepreneurship Certificate students are able to.

- Implement a manufacturing environment that minimizes the time from customer order to delivery of a product, with less cost, space, and inventory.
- Confer with engineering, marketing, production, or sales departments, or with customers, to establish and evaluate design concepts for manufacturability.
- Prepare layouts, drawings, or sketches using computer-aided design (CAD) software.
- Modify and refine designs, using working models, to conform to customer specifications, production limitations, or changes in design trends.
- Direct and coordinate the fabrication of models or samples and the drafting of working drawings and specification sheets from sketches.
- Evaluate feasibility of design ideas, based on factors such as appearance, safety, function, serviceability, production costs/methods, and market characteristics.
- Present designs and reports to customers or design committees for approval, and discuss need for modification.
- Investigate product characteristics such as the product's safety and handling qualities, its market appeal, how efficiently it can be produced, and ways of distributing, using and maintaining it.
- Develop manufacturing procedures and monitor the manufacture to improve operations and product quality.
- Participate in new product planning or market research, including studying the potential need for new products.
- Monitor or measure manufacturing processes to identify ways to reduce losses, decrease time requirements, or improve quality.