

Engineering Technology Certificate Green Design & Engineering

Course #	Course Title	Credits	Prerequisites	Semester Offered	Semester Taken	Grade Earned
ENR104	3D Mechanical Design II	4	ENR102	Spring		
ENR105	Circuit Theory and Analysis	4	MAT041, ENL020 & ENL050 or satisfactory basic skills assessment scores	Fall, Spring		
ENV171	Energy Efficiency and Conservation Methods	3	(MAT020 or MAT025), ENL020 & ENL050 or satisfactory basic skills assessment scores	Fall		
MAT250	Calculus II	4	MAT240 or MAT185	Varies		
ENR201	Statics	3	ENR101 & MAT240; Co-requisite MAT250	Fall, Spring		
PHY211	University Physics I	4	MAT195; Co-requisite MAT240	Varies		
Total Credits		22				

This certificate has advanced mathematics requirements.

Overview

This certificate prepares students to successfully incorporate sustainability concepts into the design, manufacture, and support of electro-mechanical devices used in industry and construction. This certificate applies equally well for those students whom are already in the workforce and are looking to augment their skills as well as new students looking to enter into the dynamic green engineering technology work field.

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 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). Therefore students earning this certificate will emerge with the confidence, knowledge, and experiential skills to convert a customer's requirements into robust and environmentally sound deliverables, in the shortest time possible, with maximum waste elimination throughout the value chain.

Career Outlook

Green design engineering technologists typically work in the following economy sectors:

- Manufacturing - This sector covers activities related to industrial manufacturing of technology as well as energy efficient manufacturing processes.
- Research, Design, and Consulting Services - This sector encompasses "indirect jobs" which includes activities such as energy consulting or research and other related business services.

This occupational profile is provided by O*NET.

www.onetcenter.org/green.html?p=2

Program Outcomes

Upon completion of the Green Design & Engineering Certificate students are able to.

- Develop a concept from an idea through to a finished product all the while integrating sustainable and renewable energy standards, methods, and materials into the project. Fully analyze and document the design using Computer Aided Design software
- Review project instructions and blueprints to ascertain test specifications, procedures, and objectives, and test nature of technical problems such as redesign. Analyze test results in relation to design or rated specifications and test objectives, and modify or adjust designs to meet specifications.
- Discuss changes in design, method of manufacture and assembly, and drafting techniques and procedures with staff and coordinate corrections.
- Set up and conduct tests of complete units and components under operational conditions to investigate proposals for improving equipment performance.
- Demonstrate knowledge of industry standard tools for effective practices including software, code implementation, and interpretation.