

EN7920

Mechanical Project



Course Aim To provide engineering students with advanced understanding and specialist skills in engineering design, stress analysis, beam design, engineering ethics, pressure vessel design, strain measurement, environment impact assessment, prototype manufacturing integrated in a fully immersive PBL environment.

Short Title

Faculty EDICT

Credits 60

Pre-requisites EN6904 (or ENB5904), EN6902 (or ENB5902), EN7917 (or ENB6917), EN7919 (or ENB6919), EN6107 (or ENB5107), EN6908 (or ENB5908)

Co-requisites None**Anti-requisites** ENB6912, ENB6913, ENB6914, ENB6909**Version** 4

Effective From September 1, 2018

Indicative NQF Level 7**Student Contact hrs** 300**Self-directed hrs** 300**Other directed hrs** 0**Total learning hrs** 600**Learning Outcomes**

- On successful completion of this course, students will be able to:
- 1 Evaluate and Analyse mechanical components, applied loadings and construction material in terms of stress, strain, stress planes, stress concentrations and failure; for a set of performance criteria
 - 2 Produce detailed manufacturing engineering drawings using 3D CAD for engineering components and assemblies to meet industry standard.
 - 3 Manufacture and fabricate mechanical components and assemblies to a specified design, working in teams and applying project management techniques
 - 4 Design, critically analyse and build engineering components to meet design specifications and standards
 - 5 Use appropriate strain measurement methods and techniques to analyse engineering components
 - 6 Solve mechanical design problems involving thick, thin and compound cylinders, using analytical techniques
 - 7 Demonstrate a general understanding of the principles of industrial control
 - 8 Demonstrate ethical, legal and social responsibility as an engineering technologist including the critical analysis of the environmental aspects of a given engineering application using sustainable solutions

NQF Sub-strandTheoretical
UnderstandingPractical
Application of
knowledgePractical
Application of
knowledgeTheoretical
UnderstandingPractical
Application of
knowledgeTheoretical
UnderstandingTheoretical
UnderstandingTheoretical
Understanding