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		**Version**	3
Faculty	EDICT	**Effective From**	September 1, 2017
		Indicative NQF Level	7
Credits	60	**Student Contact hrs**	300
Pre-requisites	EN6904 (or ENB5904), EN6902 (or ENB5902), EN7917 (or ENB6917), EN7919 (or ENB6919), EN6107 (or ENB5107), EN6908 (or ENB5908)	**Self-directed hrs**	300
Co-requisites	None	**Other directed hrs**	0
Anti-requisites	ENB6912, ENB6913, ENB6914, ENB6909	**Total learning hrs**	600

Learning Outcomes

On successful completion of this course, students will be able to:

		NQF Sub-strand
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	Theoretical Understanding
2	Produce detailed manufacturing engineering drawings using 3D CAD for engineering components and assemblies to meet industry standard.	Practical Application of knowledge
3	Manufacture and fabricate mechanical components and assemblies to a specified design, working in teams and applying project management techniques	Practical Application of knowledge
4	Design, critically analyse and build engineering components to meet design specifications and standards	Theoretical Understanding
5	Use appropriate strain measurement methods and techniques to analyse engineering components	Practical Application of knowledge
6	Solve mechanical design problems involving thick, thin and compound cylinders, using analytical techniques	Theoretical Understanding
7	Demonstrate a general understanding of the principles of industrial control	Theoretical Understanding
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	Theoretical Understanding