	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	2
Faculty	EDICT	Effective From	September 1, 2016
		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	Use technologist level skills of manufacturing and fabrication of mechanical components and assemblies to a specific design	Practical Application of knowledge
4	Design, critically analyse, build and test 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 and social responsibility as an engineering technologist including the critical analysis of the environmental aspects of a given engineering application	Theoretical Understanding