

EN8912

## Applied Thermodynamics



**Course Aim** Investigate heat energy conversion as they apply to the industry and shedding light over alternatives by introducing renewable energy.

Short Title	Applied Thermo	Version	2
Faculty	EDICT	Effective From	September 1, 2016
Polytechnic Level		Indicative NQF Level	8
Credits	15	Student Contact hrs	60
Pre-requisites	EN7919 and minimum of 60 level 7 credits from the BEngTec (mechanical)	Self-directed hrs	90
Co-requisites	None	Other directed hrs	0
Anti-requisites	ENB6915	Total learning hrs	150

Learning Outcomes	On successful completion of this course, students will be able to:	NQF Sub-strand
1	Demonstrate advanced knowledge in energy and mass balances principles, and critical knowledge of industrial thermodynamic application.	Practical Application of knowledge
2	Compare ideal power cycles to real engines, and describe, investigate and understand advanced principles of work and energy conversion as well as their applications in thermal cycles.	Theoretical Understanding
3	Critically evaluate limitations of real cycle efficiencies, evaluate numerical data, measure efficiency and provide solutions to industrial problems.	Generic, Problem Solving and Analytical Skills
4	Critically analyse, research and evaluate alternative energy sources, and explore their application for environmental sustainability.	Autonomy, Responsibility, Context