

Short Title:	Energy Science 1 APPROVED
Full Title:	Energy Science 1
Module Code:	ENSC H1005
Credits:	5
Field of Study:	Electricity and energy
Module Delivered in	1 programme(s)
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Module Description:	This module aims to introduce the student to the fundamentals of physics relevant to the analysis of energy and energy conversion systems.

Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Use SI units to measure and evaluate quantities relevant to energy systems.
LO2	Explain the principles of power, energy, forces and solve fundamental problems involving these quantities
LO3	Explain the operation of simple electrical circuits.
LO4	Explain the process of energy conversion between electromagnetic and kinetic energy sources

Module Content & Assessment

Course Work				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Laboratory	Basic units and density measurements	1,2	6.00	Week 2
Laboratory	Graphical exercises/ Hooke's Law	1,2	6.00	Week 3
Laboratory	Dynamics, measurements on the linear air track	1,2	6.00	Week 4
Continuous Assessment	Mid Term Test	1,2	10.00	Week 5
Laboratory	Resistivity measurement/ Ohm's Law	1,2,3	6.00	Week 6
Laboratory	DC circuit analysis	1,2,3	6.00	Week 8

End of Module Formal Examination				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Formal Exam	End-of-Semester Final Examination	1,2,3,4	60.00	End-of-Semester

TU Dublin – Tallaght Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Classwork	2.00	Every Week	2.00
Laboratories	Practical Work	2.00	Every Week	2.00
Independent Learning Time	Outside of Class	3.00	Every Week	3.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

This module has no Part Time workload.

Module Resources

Required Book Resources

Energy Science 1 course notes

Recommended Book Resources

Keith Johnson,Simmons Hewett,Sue Holt,John Miller 2015, *Advanced Physics for You*, 2nd Ed., Oxford University Press [ISBN: 9781408527375]

John Andrews,Nick Jelley 2017, *Energy Science*, 3rd Ed., Oxford University Press [ISBN: 9780198755814]

Roger Hinrichs,Merlin Kleinbach 2013, *Energy: Its Use and the Environment*, 5th Ed., Cengage Learning [ISBN: 9781111990831]

This module does not have any article/paper resources

This module does not have any other resources

Module Delivered in

Programme Code	Programme	Semester	Delivery
TA_EAEEE_D	Bachelor of Engineering in Sustainable Energy and Environmental Engineering	1	Mandatory