

Module Title:	Dynamics 2
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	4 programme(s)
Module Aim:	To provide the student with a broad knowledge of the external effects of forces applied to objects in motion.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Apply and solve formulae involving the motion of an object in two dimensions.
LO2	Apply and solve formulae involving the motion of an object undergoing circular motion.
LO3	Apply and solve formulae involving the dynamics of rotation.
LO4	Contribute effectively, as an individual and as part of a group, to the planning and realization of investigations in a laboratory environment into the effects of applied forces on objects in motion.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content

Motion in two dimensions

Motion of a projectile – range on a horizontal and inclined plane; maximum height.

Inertia and Change of Motion.

Newton's laws of motion – application to particles; Application to connected objects.

Motion in a Circle.

Centripetal force, centrifugal force, Applications - Centrifugal clutch.

Dynamics of Rotation

Torque and angular acceleration; Moment of inertia, radius of gyration, Relationship between linear and angular motion – the hoist; Kinetic energy of rotation, function of a flywheel.

Assessment Breakdown

%

Continuous Assessment

90.00%

Practical

10.00%

Continuous Assessment

<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Examination	Class Test	1	35.00	Week 6
Examination	Class Test	2,3	35.00	Week 12
Practical/Skills Evaluation	Labs: Fletcher's Trolley, Centrifugal Force, Falling Mass (Newton 2).	1,2,3,4	20.00	Every Second Week

No Project

Practical

<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Practical/Skills Evaluation	Computer Competencies Assignment	1	10.00	Week 8

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	12 Weeks per Stage	4.00
Laboratory	12 Weeks per Stage	1.00
Independent Learning	15 Weeks per Stage	4.33
Total Hours		125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EMMEC_B	Bachelor of Engineering (Honours) in Mechanical Engineering	3	Mandatory
CW_EEROB_B	Bachelor of Engineering (Honours) in Robotics and Automated Systems	3	Mandatory
CW_EEMEC_D	Bachelor of Engineering in Mechanical Engineering	3	Mandatory
CW_EEROO_D	Bachelor of Engineering in Robotics and Automated Systems	3	Mandatory