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Title: INVESTIGATING DYNAMIC FUNCTIONS
Status: Definitive
Code: **5003TECH** (105293)
Version Start Date: 01-08-2016

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

Team	Leader
Jamie Finlay	Y

Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 60
Total Learning Hours: 240 **Private Study:** 180

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	20
Practical	20
Seminar	20

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1		40	
Portfolio	AS2		60	

Aims

This module is designed to improve the student's intuitive approach to kinematics. It uses a practical approach to cover principles of the geometry, motion and the connections between those principles and the behaviour of simple machine elements.

Learning Outcomes

After completing the module the student should be able to:

- 1 Select a mechanism to solve a given problem.
- 2 Analyse displacement, velocities, accelerations, forces and torques for selected mechanisms with the aid of simple graphics and simulation.
- 3 Combine a number of fundamental mechanisms to create a simple machine device.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Online test	2		
Portfolio	1	2	3

Outline Syllabus

Mechanisms: Commonly used and ingenious mechanisms: crank- sliders, quick return mechanisms, linkages cams, gears and gear trains, interlocking devices, reversing mechanisms, tripping and stop mechanisms, cranks and reciprocating members, feeding and ejection mechanisms.

Dynamic Analysis: Graphical techniques for analysis of displacements, velocities, accelerations, force and torque relationships. Use of solid modelling, animation and simulation to aid design.

Learning Activities

This module will emphasises the graphical CAD and CAE approaches in designing and analysing the dynamic functions of simple mechanical systems.

Notes

This module uses a graphical approach and case studies to bridge this subject and allow students to visualise how mechanisms can be used to solve design problems.