Liverpool John Moores University

Title:	Finite Element Analysis
Status:	Definitive
Code:	**6004ENGTAR** (117567)
Version Start Date:	01-08-2016
Owning School/Faculty:	Maritime and Mechanical Engineering
Teaching School/Faculty:	Maritime and Mechanical Engineering

Team	Leader
Glynn Rothwell	Y

Academic Level:	FHEQ6	**Credit Value:**	12	**Total Delivered Hours:**	38
Total Learning Hours:	120	**Private Study:**	82		

Delivery Options
Course typically offered: Summer

Component	Contact Hours
Lecture	12
Practical	20
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	Portfolio		20	
Report	Report		80	

Aims

The module aims to provide the student with a fundamental understanding of important techniques in computational analysis and to extend their experience and skill in engineering analysis with the aid of applications related software.

Learning Outcomes

After completing the module the student should be able to:

1 Use a typical finite element package.
2 Set up and validate an efficient and accurate FE model of an engineering component or structure
3 Evaluate the output from FE analyses
4 Understand the basic theory underpinning commercial FE codes.

Learning Outcomes of Assessments

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

FE Portfolio	2	4		
Analysis project	1	2	3	4

Outline Syllabus

Introduction to the finite element method as applied to solid structures and continuums.
General theory of the FE method.
Optimum finite element modeling of real structures/continuums.
Element selection.
Application of boundary conditions and applied loading.
Introduction to the use of finite element software packages.
Analysis of output from finite element packages.
Introduction to non-linear FE analysis.

Learning Activities

Lectures, tutorials and guided computer workshops.

Notes

The module extends the students' knowledge of modern FEA analysis techniques. The emphasis is on applications and problem solving.