Liverpool John Moores University

Title:	MEng. GROUP PROJECT
Status:	Definitive
Code:	**7024MAR** (115964)
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
Allan Carrier	

Academic Level:	FHEQ7	**Credit Value:**	40	**Total Delivered Hours:**	81
Total Learning Hours:	400	**Private Study:**	319		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Tutorial	21
Workshop	60

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Coursework 1 – Group Project Planning Exercise	20	
Essay	AS2	Coursework 2 - Group Project Management Exercise	30	
Essay	AS3	Coursework 3 - Group Project Management and Review	50	

Aims

The module aims to develop the students ability to work in teams upon an industrially relevant group design project. In order to be successful students will have to demonstrate good organizational skills, group dynamics and leadership.

Learning Outcomes

After completing the module the student should be able to:

1	Develop, monitor and update a plan of work relevant to their design project
2	Apply a variety of modern design processes and methodologies and have the ability to adapt them to unfamiliar situations.
3	Translate customer needs into a viable design solution.
4	Generate innovative design solutions for systems, components or processes to fulfill new needs.
5	Use advanced and computerized design tools.
6	Communicate technical information using appropriate oral, written and graphical methods.

Learning Outcomes of Assessments

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

CW	1	6				
CW	2	3	4	5	6	
CW	1	2	3	4	5	6

Outline Syllabus

Management of a large multi-disciplinary design exercise involving the University's Formula Student engineering design entry. The entry encompasses numerous engineering and management activities including:
Project Management, Gantt Charts
Design Management (BS7000), planning, monitoring and control, design review, life cycle costing, cost drivers, design optimization.
Design Quality, QFD, design FMEA, value engineering, value analysis
Design of form - shape, performance, loading, load path visualisation, manufacture, cost, materials, environment.
Design analysis - hand calculations, modelling, idealisation FE, choice of techniques.
Ergonomics - man/machine interface.
Power units - electrical, hydraulic, pneumatic.
Use of computational tools to aid design.
Performance - life, cost considerations, safety considerations.
Use of British and American standards.
Design for manufacture and assembly.
Concurrent engineering and rapid prototyping.

Learning Activities

Lectures, tutorials, workshops, information gathering and analysis. Design and build

sessions

Notes

This module provides students with the opportunity to undertake design engineering products with knowledge of how to apply research and communication methods.