Module Registrar: Dr M Wheel
marcus.wheel@strath.ac.uk

Other Lecturers Involved: Dr J Wood

Taught To (Course): Cohorts for whom class is compulsory

Credit Weighting: 10 (ECTS 5)  Semester: 1

Assumed Prerequisites: ME105 Mechanical Engineering Design, ME211 Materials, Design and Engineering Applications or equivalent

Compulsory class  Academic Level: 3

Module Format and Delivery (HOURS i.e. 1 credit = 10hrs of study):

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Tutorial</th>
<th>Laboratory</th>
<th>Groupwork</th>
<th>External</th>
<th>Online</th>
<th>Project</th>
<th>Assignments</th>
<th>Private Study</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Educational Aim

This module aims to provide students with experience in applying engineering science principles in a design context. It is the aim of this class to have students experience the application of knowledge, gained primarily from previous classes, to the initial stages of the design process including product design specification, concept generation and selection, and performance analysis of a candidate design solution.

Learning Outcomes

On completion of the module the student is expected to be able to have
LO1 experienced working in teams and the role of organisation in success
LO2 developed a concept from inception to detailed design level
LO3 experienced working with the non-analytical elements of design
LO4 appreciated design as a process of iteration

Syllabus

The module will teach the following:

The class consists of a semester-long group design exercise. Over the 12 weeks of the semester, the groups will develop their design from the conceptual stage to final detailed design. There is an initial assessment for 25% at week 6 when the product design specification is consolidated and resulting concepts that have been generated are evaluated. A group portfolio of the design, detailing its background and genesis will be submitted in week 12, along with the Peer Marking sheets.

Assessment of Learning Outcomes

Criteria

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:

LO1 to LO4

Please note that due to the integrated nature of the group design activity the learning outcomes are not assessed independently. Assessment is therefore carried out part way through and at the end of the semester on the following basis:-

Project Consolidation, week 6  25%
Prototype Design Presentation, week 12  75%

Both assessments consist of combination of informal presentation and questions and answers session with the class facilitators. During each session students should collectively demonstrate their understanding of the design process as defined by LO1 to LO4 through the presentation and explanation of their group solution to the specific design problem.

Peer Marking may be used to modify individual marks as necessary.
The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

### 12 Principles of Assessment and Feedback
*(on Learning & Teaching web pages: [www.strath.ac.uk/learnteach/informationforstaff/staff/assessfeedback/12principles/](http://www.strath.ac.uk/learnteach/informationforstaff/staff/assessfeedback/12principles/))*

Ongoing formative feedback will be provided by verbal discussion at weekly timetabled groupworking sessions based in the design studio.

Summative feedback will be provided by mark awarded at the project consolidation stage and for the group portfolio presented upon completion of the detailed design.

### Assessment Method(s) Including Percentage Breakdown and Duration of Exams

<table>
<thead>
<tr>
<th>Examinations</th>
<th>Courseworks</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Month(s)</td>
<td>Duration</td>
</tr>
<tr>
<td>1 Group</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>LO1 to LO4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicate which learning outcomes (LO1, LO2 etc) are to be assessed by exam/coursework/project as required.

**Coursework / Submissions deadlines:**

n/a

**Resit Assessment Procedures:**

Students who fail will be required to carry out additional work as instructed by the Class Registrar by the beginning of semester 2.

### PLEASE NOTE:

Students need to gain a summative mark of 40% to pass the module. Students who fail the module at the first attempt will be re-examined during the August diet. This re-examination will consist entirely of coursework.

### Recommended Reading

****Purchase essential; ***Purchase recommended; **Highly recommended reading; *

*Simply for reference (do NOT purchase)*

none

### Additional Student Feedback

*(Please specify details of when additional feedback will be provided)*

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Room No</th>
</tr>
</thead>
</table>

Session: 2014/15

### Approved:

Course Director Signature: 

Date of Last Modifications: 12 September 2014
MODULE TIMETABLE

Module Code: ME312  Module Title: Mechanical Engineering Design 3A

**Brief Description of Assessment:**
Project Consolidation (Group Presentation), week 6. Prototype Design Presentation (Group Presentation), week 12

**Assessment Timing:**
Indicate on the table below the start/submission dates for each assignment/project and the timing of each exam/assessment(s).

<table>
<thead>
<tr>
<th>Semester One</th>
<th>WK1</th>
<th>WK2</th>
<th>WK3</th>
<th>WK4</th>
<th>WK5</th>
<th>WK6</th>
<th>WK7</th>
<th>WK8</th>
<th>WK9</th>
<th>WK10</th>
<th>WK11</th>
<th>WK12</th>
<th>Exam Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Presentat</td>
</tr>
<tr>
<td>Semester Two</td>
<td>WK1</td>
<td>WK2</td>
<td>WK3</td>
<td>WK4</td>
<td>WK5</td>
<td>WK6</td>
<td>WK7</td>
<td>WK8</td>
<td>WK9</td>
<td>WK10</td>
<td>WK11</td>
<td>WK12</td>
<td>Exam Period</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>