MODULE DESCRIPTION FORM

16263    AUTOMOTIVE SYSTEMS 1

Module Registrar: Prof D Mackenzie
d.mackenzie@strath.ac.uk

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

Other Lecturers Involved: Dr B Keating, Mr C Johnstone

Credit Weighting: 10 (ECTS 5)

Semester: 1 and 2

Assumed Prerequisites: None

Elective class

Academic Level: 2

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>
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Educational Aim

This module aims to impart an understanding of the influences which have shaped automotive engineering design in the past, and to explore possible future scenarios.

Also, to convey the fundamental engineering principles involved in the design and manufacture of the principal components of a vehicle: motive power unit, structure and running gear.

Learning Outcomes

On completion of the module the student is expected to be able to

LO1 Understand the engineering concepts involved in principal components of a motor vehicle.

LO2 Appreciate the range of alternative design solutions employed in practice.

LO3 Be aware of possible future scenarios for motor vehicle development.

Syllabus

The module will teach the following:

Historical background; current environmental and safety legislation; IC engine fundamentals; power train options and system matching; suspension, steering and braking systems; materials and structural design; constraints on future development: hybrid and alternative vehicle designs.

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
C1 Demonstrate understanding of how basic engineering concepts influence and determine vehicle design.
C2 Perform basic design/performance calculations relating to vehicle dynamics and thermodynamics.

LO2
C1 Ability to describe and critically assess existing design solutions.

LO3
C1 Demonstrate understanding of concepts and ideas underpinning future motor vehicle development.
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/teaching/staff/assessfeedback/12principles/)

Students will receive individual Coursework marks 3 weeks after the submission date. The subsequent lecture will review the assignment topics. Feedback identifying positive and negative aspects of overall class response (with respect to the Criteria above) will be given in class. Following this, individual students requiring further feedback will arrange a personal meeting with the lecturer.

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

<table>
<thead>
<tr>
<th>L/Outcomes</th>
<th>Examinations</th>
<th>Courseworks</th>
<th>Projects</th>
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<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Month(s)</td>
<td>Duration</td>
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<tr>
<td>LO1, LO2</td>
<td>1</td>
<td>May</td>
<td>60min</td>
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<td>2</td>
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Indicate which learning outcomes (LO1, LO2 etc) are to be assessed by exam/coursework/project as required.

Coursework / Submissions deadlines: Week 9 semesters 1 & 2

Resit Assessment Procedures: 2hr exam in August

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 an exam.

Recommended Reading

N/A

Additional Student Feedback
(Please specify details of when additional feedback will be provided)

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<th>Room No</th>
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Session: 2014-15

Approved:

[Signature]

Course Director Signature:

Date of Last Modifications: 12 August 2014
### MODULE TIMETABLE

**Module Code:** 16263  
**Module Title:** AUTOMOTIVE SYSTEMS 1

**Brief Description of Assessment:**  
2 Assignments (1,600 – 1,800 words) addressing specific course topics.

**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>
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<table>
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<th>Semester Two</th>
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<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>
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<td>Start</td>
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<td>Submit</td>
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<td>60 minute Exam</td>
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