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[Learning Resources](#) [Support](#) [Social News & Info.](#) [Learning & Information Services](#)
[Technical Support](#)

Definitive Module Document (DMD)

[Back](#)

[Module Info](#) > DMD

Module Code: 1ACM0027

Title of Module

Full Title: Automotive Technology and Business

Short Title: Auto Tech & Bus

MODULE

1ACM0027 (A 05/6)

Automotive Technolog...

- [Module Homepage](#)
- [Module News](#)
- [Module Information](#)
- [Teaching Resources](#)
- [Reading List](#)

Search Website

Version: 1

Credit Points: 15

Level / ECTS Level: 1

First Offered: 1/9/2001 00-00-00

6. Home Department:

AAD

7. Departments(s) contributing to teaching:

9. Module Aims:

- * develop an awareness of the technologies, processes and practices used to design and build motor vehicles
- * have an understanding of the management and business practices relevant to an engineering product
- * develop the responsibilities associated with working in and contributing to a team

10a. Learning Outcomes: Knowledge and Understanding:

- * identify the major vehicle components and systems, and their operating parameters
- * understand the implications of road transport and the environment
- * identify the important factors in vehicle design and performance
- * Identify the ethical and social issues of a business and its impact on a customer
- * Identify the ethical and social issues of a business and its impact on a customer

10b. Learning Outcomes: Skills and Attributes:

- * suggest possible methods of manufacture for automotive components
- * apply and appraise appropriate mathematical techniques to a business

11. Module Content

11a Module Content:

Function and properties of vehicle components and systems e.g. suspension, steering, body, electrical, powertrain.

Factors affecting engine performance. Combustion theory. Reverse engineering of components.

For the business part of this course students will work within a business team and will develop professional responsibilities as individuals and as team members. The course balances lectures with team work and gives the student an understanding of the ethical and social issues of a business and its impact on the customer. Management and business practices and techniques are introduced through the design and development of a product and supporting lectures

11b. Further details on how the learning outcomes of the module will be achieved:

1. Identification and function of major systems using Ford Focus demonstrator and engine rigs. Formative questionnaire and open access lab on vehicle ergonomics.
2. Summary and analysis of questionnaire data. Subjectivity and commercial design. Introduction to engines-- cycles, function requirements, operating principles and parameters, mapping. Engine design guidelines- bore/stroke, torque/power, thermal and volumetric efficiencies, basic operating thermodynamics, compression ratio and cycle temperatures. Engine rig demonstrations.
3. Combustion theory. Environmental considerations. Energy use calculations. Group assignment set
4. Reverse engineering presentations
5. Suspension, steering, body, electrical systems. Market-led engineering.
6. Systems- interactions, synergy, restraints and requirements. Exhaust system components studied. Assignment on vehicle exhaust systems set.

Identify alternative organisational forms, legal requirements to publish accounts and aspects of employment law.

Identify the ethical and social issues of a business and its impact on a customer

Customer values, ethics and social issues through case studies and videos

Identify and translate customer needs into a design, through the application of management and business techniques

Market research, questionnaire design, forecasting, company set up, product costing

Recognise the professional responsibilities of working within a team

Communication methods, appraise individual performance within a team

12. Language of Delivery:

English

13. Language of Assessment:

English

14. Assessment Details (Academic):

Coursework: 100

Exam: 0

Other: Typically, assessment will consist of-

- Peer assessed group assignment and presentation on production methods and a written assignment on systems marked by the tutor (40%)
- business group report (50%)
- study skills assignment (10%)

Assessment Notes:

15. Locations(s):

UH HATFIELD

16. Pre and Co-Requisite:

Pre-Requisite

Co-Req

Prohibited

17. Subject Board of Examiner/s:

AERO/CIVIL/MECH L1 COMMON

18. Comments

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