



[Your Portal](#) [Your Course](#) [Email PM Voyager](#) [Search Help](#) [Logout](#)

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

Definitive Module Document (DMD)

MODULE

[Back](#)

1AAD0008 (A 05/6)

[Module Info](#) > DMD

Module Code: 1AAD0008

Title of Module

Full Title: Manufacturing Processes

Short Title: Man Processes

Manufacturing Proces...

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

Search Website

Version: 1

Credit Points: 15

Level / ECTS Level: 1

First Offered: 1/9/2004 00-00-00

6. Home Department:

AAD

7. Departments(s) contributing to teaching:

9. Module Aims:

- * develop their knowledge and understanding of the manufacturing processes
- * develop their knowledge and understanding of the economics of manufacturing processes
- * develop understanding of a range of metrological instruments and their application

10a. Learning Outcomes: Knowledge and Understanding:

- * describe a range of forming processes and their application and merits
- * describe a range of joining processes and their applications and merits
- * select suitable processes for the manufacture of a typical consumer product
- * describe the principle of dimensional metrology in engineering applications

10b. Learning Outcomes: Skills and Attributes:

- * select and use metrological instruments to check dimensional and geometrical parameters of manufactured components
- * conduct experiments and collect data and draw conclusions

11. Module Content

11a Module Content:

The module introduces a wide range of primary materials working processes, such as casting, moulding and powder methods for metals, polymers and ceramics as appropriate. Secondary processing such as rolling, extrusion and

similar methods are covered with introduction to the effects of load and temperature on process and materials involved. The forces and concerns to be considered during cutting processes are discussed, with the properties and applications of cutting tool materials. Fundamental aspects of welding, brazing and soldering are described together with application of adhesive and mechanical joining methods. The necessary basics of metrology with application to manufactured components are introduced via practical and demonstration

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

The intended learning outcomes are facilitated through a combination of approaches to learning and teaching, typically this will include lectures, tutorials, and individual assignments/experimental work. These activities will be supported by the module team and by encouraging the students to access a variety of resources, eg Studynet and academic text.

The lectures and tutorial will cover the following aspects of manufacturing processes; -

Primary Forming Processes; - casting of metals, moulding processes, extrusion, powder technology, forming of plastics & composites.

Secondary Forming Processes; - heat treatment, rolling, sheet-metal forming, material removal processes, abrasive processes.

Forces in Machining; - fundamentals of cutting, cutting tool forces, shear mechanism during cutting, wear criteria & implications, cutting tool life/tool economics; - cutting tool materials, depth of cut, vibration.

Joining Processes & Equipment; - oxyfuel gas, MIG, MAG, MMA, solid state welding, the metallurgical consideration of joining relevant to brazing, soldering, adhesive bonding, mechanical joining processes.

Metrology; - measurement standards, line graduated instruments, comparative length measuring instruments, measuring straightness, flatness, roundness & profile, coordinate measurement and layout machines, measurement and gauging, geometrical dimensioning and tolerancing. Students will be introduced to a range of measurement devices in practical sessions.

An appreciation of economics of process will be developed through various exercises

12. Language of Delivery:

English

13. Language of Assessment:

English

14. Assessment Details (Academic):

Coursework: 50

Exam: 50

Other: Two individual practical assignment reports or phase test

One unseen examination

Overall pass required, subject to a maximum grade of E2 if not both coursework and examination are passed. A reasonable attempt at both elements of assessment is required for the attainment of a pass grade.

Each Assessment satisfies a selection of the learning outcomes.

Assessment Notes:

15. Locations(s):

UH HATFIELD

16. Pre and Co-Requisite:

Pre-Requisite

Co-Req

Prohibited

17. Subject Board of Examiner/s:

BUS/MGMT/QUAL COURSES (AADE)

18. Comments

Recommended text-

Manufacturing Engineering & Technology by S. Kalpakjian, Chapters 10-35

[Disclaimer](#)
[Terms and Conditions](#)

Copyright (C) 2006 University of Hertfordshire.

