

MECH0007 Topic Notes
UCL

Hasha Dar

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Chapter 1

Course Outline

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1.1 Coursework and exam

- Metallography and Microstructure - Lab week (week 26), held in Materials Lab Sub Basement Roberts.
- Manufacturing Case Study - Friday afternoon consultancy slots (14:30 onwards), Materials Lab Sub Basement Roberts.
- One three hour exam, consistent of two sections: MCQ (sort of?) and conventional. Timetabled revision slots in summer term.

Add notes about the following topics:

- Cracking - welding vs riveting, arrestment of cracks in a material.
- Casting and forging - in context of manufacturing processes, perocity of a liquid vs a solid.
- Crystalline and amorphous solids - materials which are one or the other, both or both in different capcaities, look into molecular structure of each, crystallinity is a degree of structure which affects its properties.
- Plasticity and deformations in metals and other materials.

Structure - Property Relationship at the heart of all Material Science.

Manufacturing (Processing)	
Structure	Property

Categories - these all have different structures and hence properties.

- Metals
- Ceramics
- Polymers
- Composites - a mix of the other three above (physical mix)