



Materials for transport applications

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Study contract

- 3 credits
- Evaluation:
 - Oral exam
 - Presentation
 - Executive summary report
 - Active contribution in seminars
- Compulsory reading
 - Ashby: Materials Selection in Mechanical Design, 4th edition
 - Ashby: Materials and the Environment
- Additional literature
 - o Jones & Ashby: Engineering Materials Volume 2, Second Edition
 - Budinski & Budinski: Engineering Materials, Properties, and Selection, 9th edition



Learning outcomes

Knowledge of:

- Most important materials and manufacturing techniques, used in automotive and aerospace industry
- Plastic deformation of metals
- Properties and mechanics of composites

Ability to

- Select a material and process for a transport application
- Understand how composites work
- Analyse and synthetise an English paper on materials research

3

 Present an English paper on materials research in transport applications

Plasticity and forming processes





In-service behaviour of metals

- Fracture toughness
- Fatigue
- Corrosion





Mechanics of composites



Manufacturing of composite materials



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In-service behaviour of composites

- Fracture toughness
- Environmental effects
- Impact
- Fatigue





