



UNSW
SYDNEY

Australia's
Global
University

Built Environment

IDES1071

Materials & Tech 1: Physical Principles



Course Outline – Term 1, 2020

Disclaimer

Information within this document is subject to change. The full and most accurate course outline will be available in Moodle closer to the start of the term in which the course is offered.

1. COURSE STAFF

Course Contact	Dr Miles Park
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2. COURSE DETAILS

Credit Points	6 units of credit (uoc)
Workload	Approx. 150 hours including class contact hours, weekly individual and group online learning activities, readings, class preparation, and assessment activities.
Teaching Times and Location	Find details in timetable http://www.timetable.unsw.edu.au

Description

This is the first of two courses designed to provide a platform of understanding of physical principles and manufacturing technologies encountered by Industrial Designers. A basic understanding of the principles and related physical properties of materials, mechanical devices, electricity and electronic products is covered. Such knowledge will enable students to comprehend and conceive of product design solutions that are informed by realistic expectations in terms of estimated product function, performance and use. In addition, the course will enable students to discuss their design proposals with technical experts, such as manufacturing engineers and materials specialists.

Aims

This course aims to:

1. Develop a basic understanding of related physics, mechanics, electrical and material properties.
2. Develop an understanding of and describe the physical properties of materials.
3. Develop an understanding of basic engineering and physical science terminology you will encounter as a designer.
4. Develop competence to analyse and apply engineering concepts and physical principles in terms of structures, mechanisms, vectors and forces and tolerances and measurement to design projects.
5. Develop an understanding of basic principles electrical circuits and electrical/electronic products.

Course Learning Outcomes (CLOs)

At the successful completion of this course, you will be able to:

1. Demonstrate an understanding and describe a range of basic physical principles, properties of materials and technologies typically encountered in industrial design.
2. Analyse and apply basic physical principles and simple mechanical devices to design solutions.
3. Demonstrate an understanding and describe basic electrical principles and electrical components within electrical and electronic products.
4. Undertake a simple descriptive analysis of a design in terms of structure, mechanisms, stresses and forces, and tolerances and measurement.

3. ASSESSMENT

Assessment task	Weight	CLOs Assessed
1. Chair Project	20%	1, 2
2. Materials Presentation	20%	1, 3
3. Bridge Project	10%	1, 3, 4
4. Quiz	20%	1, 2, 3, 4
5. Electrical and Electronic Product Analysis	30%	3, 4

4. COURSE IMPROVEMENT AND FEEDBACK

Feedback from students is an integral part of improving courses and teaching approaches. One of the primary mechanisms of feedback is myExperience, which we strongly urge all students to complete at the end of term. Course convenors use the feedback to make ongoing improvements to the course. This is communicated in Moodle in the myFeedback Matters page.