Course Outline

MATS2003

Materials Characterisation

Materials Science and Engineering

Science

T1, 2022

1. Staff

Position	Name	Email	Consultation times and locations	Contact Details
Course Convenor / Lecturer	Dr Owen Standard	o.standard@unsw.edu.au	Room 243A, Hilmer Building (Building E10) by appointment	Phone: 9065 5356
Lecturer	Dr Shery Chang	shery.chang@unsw.edu.au	Rm B65, Chemical Sciences Building (Building F10) by appointment	Phone: 9385 6709

2. Course information

Units of credit: 6

Pre-requisite(s): N/A

Timetabling website: http://timetable.unsw.edu.au/2022/MATS2003.html

Teaching times and locations:

	Lecture	Lecture	Lecture	Laboratory * (In-Person)	Laboratory * (Online)	MT Exam
Day	Monday	Tuesday	Friday	Wednesday	Wednesday	Monday
Time	16:00-18:00	14:00-16:00	09:00-11:00	12:00-14:00	15:00-17:00	13:00-15:00
Location	Online	Online	Online			

3. Strategies and approach es to learning

3.1 Learn ing and teaching activities

- Students are actively engaged in the learning process.
  It is expected that, in addition to attending classes, students read, write, discuss, and are engaged in solving problems in the characterisation of materials and the analysis of materials behaviour. This is facilitated by interactive online tutorials, calculation- based assignments, and laboratory reports.
- Effective learning is supported by a climate of inquiry where students feel appropriately challenged.
  Understanding of the underlying theory and principles of metallography, crystallography, diffraction, microscopy, and spectroscopy are challenging – students will apply this to real-world materials and situations by performing calculations, solving problems, and completing prarrpal

4. Course schedule and structure

This course consists of 58 hours of class contact hours per term (lectures 52 hours, laboratory

5. Assessment

5.1 Assessment tasks

Assessment Task	Descripti on	Weight	Due Date
Tutorial/ Assignments :	Crystallography Assignment: Students will determine basic crystallo		

Mid-Term Exam:	The mid-session exam will provide summative assessment of the topics of Specimen Preparation, Crystallography, and X-ray Diffraction as covered by formal lectures, nominated reading material (from course handouts), and assignments. It will consist of a combination of short-answer style questions and calculations. Any derivations will assume knowledge of the material with relevant background equations provided (except Bragg's Law), rather than resorting equations to memory. The exam will assess both underlying principles of materials characterisation techniques as well as their application to the practical characterisation of real materials.	20%	Week 7
Final Exam:	The final exam will provide summative assessment of the topics of Electron Microscopy, Spectroscopy, Optical Microscopy, Digital Image Analysis, and Stereology as covered by formal lectures, nominated reading material (from course handouts), assignments, and laboratories. It will consist of a combination of multiple-choice questions and short-answer style answers and calculations. Any derivations will assume knowledge of the material with relevant background equations provided, rather than resorting equations to memory. The exam will assess both underlying principles of materials characterisation techniques as well as their application to the practical characterisation of real materials.	30%	UNSW final exam period at end of Term

Further information

UNSW grading system: https://student.unsw.edu.au/grades

UNSW assessment policy: https://student.unsw.edu.au/assessment

5.2 Assessment criteria and standards

- All assessment standards and criteria will be available on the course Moodle page
- Satisfactory completion of the course includes the requirement to achieve •35% in the mid-term exam and •35% in the final exam, and •45% weighted average over the two exams. Students who fail to achieve this will be awarded an Unsatisfactory Fail (UF) grade for the course regardless of if they receive over 50% in total for the course.
- Please refer to the UNSW guide to grades: https://student.unsw.edu.au/grades

5.3 Submission of assessment tasks

- Assessment tasks must be completed and submitted by the dates set (these will advised during session). All submitted work must contain a completed student declaration sheet. Unless statositted w Uv1 (d)(

- UNSW operates under a Fit to Sit/ Submit rule for all

The Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: