



# Course Outline

MATS3002

Fundamentals of Ceramic Processing

Materials Science and Engineering

Science

T2, 2020

# 1. Staff

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Position	Name	Email	Consultation times and locations	Contact Details
Course Convenor	Dr Owen Standard	<a href="mailto:o.standard@unsw.edu.au">o.standard@unsw.edu.au</a>	Room 243A, School of Materials Science and Engineering (Building E10) by appointment (please contact by email)	Phone: 9385 4437
Lecturer	Prof Chris Sorrell	<a href="mailto:c.sorrell@unsw.edu.au">c.sorrell@unsw.edu.au</a>	Room 248, School of Materials Science and Engineering (Building	

- x Understand and design basic processing routes for ceramic materials and components, and undertake practical problem solving.

## **2.3 Course learning outcomes (CLO)**

At the successful completion of this course you (the student) should be able to:

- 1.

## **3. Strategies and approaches to learning**

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### **3.1 Learning and teaching activities**

(Based on UNSW Learning Guidelines)

- x Students should read through the relevant chapters of the recommended textbooks.
- x Students should complete all assessment tasks and submit them on time.
- x Students are expected to participate in online discussions (if requested) through the Moodle page

## 4. Course schedule and structure

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The recommended pace of self-learning in the course is indicated in the table below. Nominally there are 3 x 2 hrs recorded lectures per week. The online laboratory class is nominally 2 hrs. The formal mid-term and final exams are nominally 2 hours each. You are expected to take an additional 60 hours (6 hrs per week) of non-class contact hours to study and readings, complete assessment tasks, study and readings, and exam preparation spread over the term.

Week	Topic	Activity
1	Overview of ceramic materials and processing operations Ceramic raw materials and their processing	
2	Ceramic forming Dry forming processes Plastic formation processes	
3	Plastic formation processes Wet forming methods	Formative Quiz
4	Wet forming methods Drying of ceramics	Laboratory
5	Drying of ceramics Mid-term exam	Assignment Pt 1
6	Study Week	
7	Firing of ceramics	Assignment Pt 2
8	Firing of ceramics	

## 5. Assessment

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### 5.1 Assessment tasks

Assessment task	Description	Weight	Due date
<b>Laboratory Review Questions:</b>	<p>Owing to the COVID-19 medical emergency a face-to-face lab. class is not possible and instead students complete this online activity incl. review questions. The online lab. activity consists of video demonstrations of:</p> <p>Extrusion: Investigation of the effect of selected material and extruder parameters on the rate of extrusion and the properties of the extruded/fired product. This laboratory will provide formative assessment of the understanding of</p> <p>Slip casting: Investigate of rheological behaviour of ceramic particulate suspensions and their effects on slip casting behaviour. This laboratory will provide formative assessment of the understanding of ceramic raw materials and their behaviour in plastic and wet forming.</p>		

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.
- Owing to the course being run as distance delivery this term (and due to the ongoing stress and inconvenience on students arising from the COVID19 situation) normal UNSW grading (HD, DN, CR, PS, FL) will not apply to the course in T2-2020. Instead students will receive results of **SY (satisfactory)**, **FL (Fail)**, or **UF (Unsatisfactory Fail)**.
- Satisfactory performance in the course requires completion of all assessment tasks, a score of at least 40% for the overall exam component (i.e., mid-session exam and final exam marks combined), and a total mark in the course of at least 50%.
- Students who fail to achieve a score of at least 40% for the overall exam component (i.e., mid-session exam and final exam marks combined), but achieve a final mark >50% for the course, will be awarded a UF (Unsatisfactory Fail) for the course.

## 5.3 Submission of assessment tasks

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Midsession exams: Students will receive their marked exams indicating what questions were answered correctly and incorrectly. Overall comments and worked solutions may be provided to the class.

Final exam: Students will receive their final mark.



## 6. Academic integrity, referencing and plagiarism

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**Referencing** is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

**Academic integrity** is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage.<sup>1</sup> At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and **plagiarism** can be located at:

x The Current Student Handbook (2018) | Tc 0.05TJ 8.71fr2 (55) | 1-2 (e)6.18.9943.4 (or) W 1,h[(F)1.2- (001)j /TT0 1

- x F. Moore, Institute of Ceramics Textbook Series II: Rheology of Ceramic Systems. Maclaren, London. 1965.
- x D. Ganguli and M. Chatterjee, Ceramic Powder Preparation: A Handbook. Kluwer Academic Publishers, Boston, 1997.
- x R.E. Grim, Applied Clay Mineralogy. McGraw-Hill, New York, 1962.
- x

- x Assessment Implementation Procedure:  
<https://www.gs.unsw.edu.au/policy/documents/assessmentimplementationprocedure.pdf>