UNSW Course Outline

IDES2326 Materials and Manufacturing for Industrial Designers 2 - 2024

Published on the 01 Feb 2024

General Course Information

Course Code : IDES2326
Year : 2024
Term : Term 1
Teaching Period : T1
Is a multi-term course? : No
Faculty : Faculty of Arts, Design and Architecture
Academic Unit : School of Built Environment
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Materials and Manufacturing for Industrial Designers 2 emphasises the close relationship

between industrial design practice and manufacturing technologies. You will deepen your knowledge of engineering materials and manufacturing processes, enabling you to communicate intelligently and effectively with other specialists in industrialised production. You will learn about cover plastics and metals, with specific emphasis on thermoplastics and injection moulding, sheet metal and tube, CNC machining, advanced manufacturing technologies, composites, fit and assembly, and design specifications to Australian Standards.

Relationship to Other Courses

This course follows on from IDES1316: Materials and Manufacturing for Industrial Designers 1.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Analyse products and describe a range of key manufacturing materials and manufacturing processes.
CLO2 : Detail and specify manufacturing materials and processes for design projects.
CLO3 : Explain design considerations, properties and performance characteristics for a range of materials.
CLO4 : Communicate design approaches employing a range of materials and manufacturing processes using written and visual formats.

Course Learning Outcomes	Assessment Item
CLO1 : Analyse products and describe a range of key manufacturing materials and manufacturing processes.	• Component Analysis
CLO2 : Detail and specify manufacturing materials and processes for design projects.	• Assembly and Fit
CLO3 : Explain design considerations, properties and performance characteristics for a range of materials.	• Component Analysis • Assembly and Fit
CLO4 : Communicate design approaches employing a range of materials and manufacturing processes using written and visual formats.	• Component Analysis • Assembly and Fit

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

The learning outcomes will be achieved through project-based learning and a physical

engagement in problem solving.

A weekly lecture will explain the theory, show examples and introduce the tasks to be done in tutorial class. A series of online activities are completed outside of class and contribute to the knowledge and skills that you will apply in the assessments. You will engage with your peers in group activities and peer review of work.

The course is delivered in-person teaching mode with learning activities occuring in the tutorials.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Component Analysis Assessment Format: Individual	50%	Start Date: 16/02/2024 09:00 AM Due Date: 22/03/2024 10:00 PM Post Date: 22/03/2024 10:00 PM
Assembly and Fit Assessment Format: Individual	50%	Start Date: 15/03/2024 09:00 AM Due Date: 19/04/2024 10:00 PM Post Date: 19/04/2024 10:00 PM

Assessment Details

Component Analysis

Assessment Overview

You will systematically disassemble a simple multicomponent household product for analysis. Verbal feedback will be given throughout the project's development, both to individuals and broadly to the class. Grading will be done against assessment criteria.

Course Learning Outcomes

- CLO1 : Analyse products and describe a range of key manufacturing materials and manufacturing processes.
- CLO3 : Explain design considerations, properties and performance characteristics for a range of materials.
- CLO4 : Communicate design approaches employing a range of materials and manufacturing processes using written and visual formats.

Detailed Assessment Description

Refer to briefing document on Moodle

Submission notes

Digital submission on Moodle, and in-class presentation of work

Assessment information

Refer to briefing document on Moodle

Assignment submission Turnitin type

Not Applicable

Assembly and Fit

Assessment Overview

You will build a simple electronic product using an inventory of defined parts along with additional parts that you will detail, specify and produce using digital manufacturing techniques. Verbal feedback will be given throughout the project's development, both to individuals and broadly to the class. Grading will be done against assessment criteria.

Course Learning Outcomes

- CLO2 : Detail and specify manufacturing materials and processes for design projects.
- CLO3 : Explain design considerations, properties and performance characteristics for a range of materials.
- CLO4 : Communicate design approaches employing a range of materials and manufacturing processes using written and visual formats.

Detailed Assessment Description

Refer to briefing document on Moodle

Submission notes

Digital submission on Moodle, and in-class presentation of work

Assessment information

Refer to briefing document on Moodle

Assignment submission Turnitin type

Not Applicable

General Assessment Information

Refer to Moodle for latest information

Grading Basis

Standard

Requirements to pass course

Aggregate mark of 50/100 required

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 12 February - 18 February	Lecture	• Course Introduction • Assessment 1 Briefing • Sheet Metal & Tube bending • General Hardware & Fasteners
	Tut-Lab	Sheel metal & Tube bending demo in DFL
Week 2 : 19 February - 25 February	Lecture	• CNC Machining • Metal Casting • Metal Extrusions
	Tut-Lab	CNC Machining demo in DFL
Week 3 : 26 February - 3 March	Lecture	• Introduction to Polymers • Vacuum forming
	Tut-Lab	Vacuum Forming demo in DFL
Week 4 : 4 March - 10 March	Lecture	• Design for Injection Moulding • Specialty fasteners for plastics
	Tut-Lab	Injection Moulding demo in DFL
Week 5 : 11 March - 17 March	Lecture	• Design for Injection Moulding • Assessment 2 briefing
	Assessment	Assessment 1 due - in class presentation
Week 6 : 18 March - 24 March	Online Activity	Flexibility Week - Optional Activities • Lecture Recording: Injection Moulding tooling guidelines • Optional: 1-on-1 tutorial consultation via MS Teams
	Other	Flexibility week
Week 7 : 25 March - 31 March	Other	No Class - Public Holiday
Week 8 : 1 April - 7 April	Lecture	Rotomoulding Design Guidelines
	Tutorial	Assessment 2 consultation
Week 9 : 8 April - 14 April	Lecture	Introduction to Glass Blowing
	Tutorial	Assessment 2 consultation
Week 10 : 15 April - 21 April	Lecture	Composite materials
	Assessment	Assessment 2 due - in class presentation

Attendance Requirements

You are expected to be regular and punctual in attendance at all classes for the School of Built Environment courses in which you are enrolled. If and where individual courses have specific attendance requirements, these will be stated in the course outline.

If you do not attend, engage, or participate in scheduled class activities, including lectures, tutorials, studios, labs, etc, you run the risk of failing a course.

If illness or unexpected and beyond your control circumstances prevent you from completing a task on time, or substantially disturb your assessment performance, you should apply for Special Consideration, as soon as practicable, accompanied by appropriate documentation.

No special consideration will be provided if you miss out on essential course information and materials, or if you miss assessment tasks and deadlines due to unexplained absences or an

unapproved lack of attendance.

You may be advised by the Course Convenor to withdraw from the course if significant learning activities are missed.

General Schedule Information

Classes will consist of a 1 hour lecture, then followed by a 2 hour tutorial, with live demos conducted in DFL.

Course Resources

Prescribed Resources

Refer to Leganto

Recommended Resources

Refer to Leganto

Additional Costs

Associated costs for prototyping materials (e.g. 3d printing in DFL), and equipment (craft knife, camera, calipers, and hand tools)

Course Evaluation and Development

Student feedback will be gathered through the MyExperience end of term survey. Your comments are analysed and improvements to the course are made based on these.

Response to previous student feedback

This course has been refreshed from previous iterations to include less assessment events over the course whilst maintaining the hands-on learning that is a highlight of this course. The balance of theory and practical learning has been maintained and the connection between theory and practice has been strengthened in response to student feedback. Opportunities for students to share their work have been increased in the course schedule.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Mitchell Br own				During class time, email for appointment outside of class	Yes	Yes
Tutor	George Pap adogiannis				Avaliable during class time only	No	No

Other Useful Information

Academic Information

Due to evolving advice by NSW Health, students must check for updated information regarding online learning for all Arts, Design and Architecture courses this term (via Moodle or course information provided).

Please see: https://www.unsw.edu.au/arts-design-architecture/student-life/resources-support/protocols-guidelines for essential student information relating to:

- UNSW and Faculty policies and procedures;
- Student Support Services;
- Dean's List;
- review of results;
- credit transfer;
- cross-institutional study and exchange;
- examination information;
- enrolment information;
- Special Consideration in the event of illness or misadventure;
- student equity and disability;

And other essential academic information.

Academic Honesty and Plagarism

Plagiarism is using the words or ideas of others and presenting them as your own. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement.

UNSW groups plagiarism into the following categories:

- Copying: Using the same or very similar words to the original text or idea without

acknowledging the source or using quotation marks. This includes copying materials, ideas or concepts from a book, article, report or other written document, presentation, composition, artwork, design, drawing, circuitry, computer program or software, website, internet, other electronic resource, or another person's assignment without appropriate acknowledgement.
- Inappropriate paraphrasing: Changing a few words and phrases while mostly retaining the original information, structure and/or progression of ideas of the original without acknowledgement. This also applies in presentations where someone paraphrases another's ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.
- Collusion: Working with others but passing off the work as a person's individual work. Collusion also includes providing your work to another student for the purpose of them plagiarising, paying another person to perform an academic task, stealing or acquiring another person's academic work and copying it, offering to complete another person's work or seeking payment for completing academic work.
- Inappropriate citation: Citing sources which have not been read, without acknowledging the "secondary" source from which knowledge of them has been obtained.
- Duplication ("self-plagiarism"): Submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

The UNSW Academic Skills support offers resources and individual consultations. Students are also reminded that careful time management is an important part of study. One of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and proper referencing of sources in preparing all assessment items. UNSW Library has the ELISE tool available to assist you with your study at UNSW. ELISE is designed to introduce new students to studying at UNSW, but it can also be a great refresher during your study.

Completing the ELISE tutorial and quiz will enable you to:

- analyse topics, plan responses and organise research for academic writing and other assessment tasks
- effectively and efficiently find appropriate information sources and evaluate relevance to your needs
- use and manage information effectively to accomplish a specific purpose
- better manage your time
- understand your rights and responsibilities as a student at UNSW
- be aware of plagiarism, copyright, UNSW Student Code of Conduct and Acceptable Use of UNSW ICT Resources Policy
- be aware of the standards of behaviour expected of everyone in the UNSW community
- locate services and information about UNSW and UNSW Library

Use of AI for assessments

As AI applications continue to develop, and technology rapidly progresses around us, we remain committed to our values around academic integrity at UNSW. Where the use of AI tools, such as ChatGPT, has been permitted by your course convener, they must be properly credited and your submissions must be substantially your own work.

In cases where the use of AI has been prohibited, please respect this and be aware that where unauthorised use is detected, penalties will apply.

Use of AI for assessments | UNSW Current Students

Submission of Assessment Tasks

Turnitin Submission

If you encounter a problem when attempting to submit your assignment through Turnitin, please telephone External Support on 9385 3331 or email them on externalteltsupport@unsw.edu.au

Support hours are 8:00am – 10:00pm on weekdays and 9:00am – 5:00pm on weekends (365 days a year). If you are unable to submit your assignment due to a fault with Turnitin, you may apply for an extension, but you must retain your ticket number from External Support (along with any other relevant documents) to include as evidence to support your extension application. If you email External Support, you will automatically receive a ticket number, but if you telephone, you will need to specifically ask for one. Turnitin also provides updates on their system status on Twitter.

Generally, assessment tasks must be submitted electronically via either Turnitin or a Moodle assignment. In instances where this is not possible, alternative submission details will be stated on your course's Moodle site. For information on how to submit assignments online via Moodle: https://student.unsw.edu.au/how-submit-assignment-moodle

Late Submission Penalty

UNSW has a standard late submission penalty of:

- 5% per calendar day,
- for all assessments where a penalty applies,
- capped at five calendar days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request Special Consideration as early as possible before the deadline. Support with Time Management is available here.

School Contact Information

beadmin@unsw.edu.au