MECH9650

Introduction to Micro Electromechanical Systems (MEMS)

Cb

Aims of the c ourse

This course introduces the fundamentals of Micro Electromechanical systems (MEMS) and its applications in a wide range of devices and systems, as well as the design and simulation of these systems.

3. 教学

Ideas and skills are first introduced and demonstrated in lectures, and then students develop these skills by applying them to specific tasks through various assignments.

The lectures, delivered in class, will cover a range of Micro and Nano engineering topics. We will discuss about various techniques and approaches for fabrication of micro and nano

7   Microfluidics

Assessment	Weight	Learning outcomes assessed	Due date and submission requirements	Marks returned
Homework # 1	5%	1,2		

Home works

During the semester, home works will be handed out and will be available on the UNSW Moodle website.

Project Presentation

All submissions should have a standard School cover sheet available on the School website at www.engineering.unsw.edu.au/mechanical-engineering/forms-and-guidelines.

All submissions are expected to be neat, and clearly set out. All calculations should be shown as, in the event of incorrect answers, marks are awarded for method and understanding.

The preferred set-out of any numerical calculation is similar to the following:

$\Delta = \rho\nabla$ (Equation in symbols)
   $= 1.025 \times 200$ (Numbers substituted)
   $= 205$ t   (Answer with units)

Submission

Group projects and paper are due on the schedule depicted above. They are to be submitted in assignments boxes.

Late submissions will be penalised 5 marks per calendar day (including weekends). An extension may only be granted in exceptional circumstances. Where an assessment task is worth less than 20% of the total course mark and you have a compelling reason for being unable to submit your work on time, you must seek approval for an extension from the

Centre prior to the examination. Calculators not bearing an "Approved" sticker will not be allowed into the examination room.

Special consideration and   supplementary   assessment

For details of applying for special consideration and conditions for the award of supplementary assessment, see the School intranet, and the information on UNSW's Special Consideration page.

6. E̶x̶p̶ r̶e̶f̶i̶l̶

Main Text:

Lecture notes will be provided via Moodle

Additional Reading:
- SD Senturia, Microsystems Design Book
- Marc Madou, Fundamentals of Microfabrication: The Science of Book Miniturization.
- Nguyen N.T., Wereley S., 2006, Fundamentals and Applications of Microfluidics, Second Edition, Artech House, Boston, London.

7. C̶o̶n̶c̶l̶u̶s̶i̶o̶n̶

Feedback on the course is gathered periodically using various means, including the Course and Teaching Evaluation and Improvement (CATEI) process, informal discussion in the final class for the course, and the School's Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

In this course, recent improvements resulting from student feedback include: 1- dedicated CFD session and troubleshooting, 2- Australia Nanofabrication (ANFF) facility tour, and 3- case studies for successful MEMS related projects.

8. A̶d̶m̶i̶s̶s̶i̶o̶n̶

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals
	PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing
	PE1.3 In-depth understanding of specialist bodies of knowledge
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice