Course

Engineering Design 2

MMAN2100 | 6 Units of Credit
Overview

This course focuses on the subject of engineering design, which plays the role in guiding an engineer or a team of engineers to think like a designer along a systemic, rational, and creative pathway, towards breakthrough innovations of new product/service. This course provides students with a holistic understanding of the big picture, wide spectrum, and structured process of engineering design. In particular, it focuses on the early stage design, with respect to functional design and conceptual design, which greatly determines the ultimate success of any new product development.

Unlike the purely technical engineering subjects, engineering design is characterized by the synergy between “analysis” and “synthesis”, between “rationality” and “optimality”, as well as between “do the right thing” and “do the thing right”. Therefore, this course aims to make you understand the socio-technical nature of engineering design, and provide you with the capacity of not only solving a given design problem using relevant engineering knowledge, but also formulating a new design problem.

Design thinking is a fundamental skill that every engineer must have for the 21st Century. It is one of the skills that profoundly distinguish human intelligence from artificial intelligence, which greatly impacts an engineer’s long-term career success in the workplace. Therefore, this course aims to equip you with the domain-independent and solution-neutral design thinking, which can be applied to whatever technical stream (e.g., aerospace, mechanical, manufacturing, mechatronic, or naval engineering) you choose to pursue in the future.

Finally, today’s engineering problem is becoming too complex to be addressed by a single engineer based on separate disciplinary knowledge. Therefore, this course also aims to make you understand both opportunities and challenges of collaborative engineering design. Through the pedagogy of project-based learning, it’s expected that your collaborative communication, negotiation, and decision-making skills will be enhanced.
Faculty
Faculty of Engineering

School
School of Mechanical and Manufacturing Engineering

Study Level
Undergraduate

Delivery Mode
Fully on-site

Indicative contact hours
7

Timetable
Visit timetable website for details
Conditions for Enrolment

Pre-requisite: ENGG1000 OR DPST1071
Equivalent Courses

DESN2000 6 UOC  
Engineering Design and Professional Practice

BINF6111 6 UOC  
Genome Informatics Engineering Design Workshop

CVEN3031 6 UOC  
Civil and Environmental Engineering Practice

SOLA2052 6 UOC  
Project in Photovoltaics and Renewable Energy 2

COMP2111 6 UOC  
System Modelling and Design

ELEC2142 6 UOC  
Embedded Systems Design
Course Outline

To access course outline, please visit:

MMAN2100 Course Outline
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions
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Authorised by Deputy Vice-Chancellor (Academic)
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