

**CORE1200**  
**Engineering Team Design Experience**

**Spring 2023**

**3 Credits**

**Course Description**

The Engineering Team Design Experience course allows students to explore various areas of engineering, culminating in the final competition before the end of the term. Students will use these specific project requirements as an opportunity to explore activities in which managers/engineers of various disciplines are involved. Students in this course will be divided into design teams with a common goal: design and/or construct their project artifact. Each team will then undergo half-a-term training on construction, mobile phone programming and/or 3D modelling. Team members work together to obtain the skills needed to design their project. Finally, the teams compile a project and contest other teams in a competition.

**Course Objectives**

CORE 1200 emphasizes learning-by-doing educational philosophy to improve student's problem solving and design skills. The engineering design process, from design constraint formulation to prototype fabrication, will be discussed and practiced. The basic principles in areas such as Computer Science, Mechanical Engineering, and Electronic Engineering will be covered, and the course also requires students to take initiative in exploring additional knowledge that they need in the design process. At the end of the semester, students will be asked to create a project and participate in a competition or roadshow.

The course serves the common core objectives by:

- Spark passion for learning, broaden horizons and liberate the mind

The competition environment does not set a limit on how much students have to learn, and students will be encouraged to think and learn independently in the process. The involvement of peer advisor in the course will also promote learning through interpersonal experience.

- Develop analytical capacity and creative thinking

Main part of the course setting (tutorials) requires students to work and communicate in teams, and complete the in-class assignments. The course creates a team organization where students are required to communicate with teammates and their peer technical advisors. At the first half of the course, students will be asked to identify the design criteria for a particular problem, develop potential alternatives, plan a chosen solution, construct and test a prototype, assess the result and refine their solution. This leads students through the design process in an engineering context, requiring analysis, creative thinking and precision

- Foster appreciation of arts and culture, social issues, and scientific and technological precision

This course creates an environment where hands-on design and construction skills are developed to foster appreciation of scientific and technological precision;

- Encourage inquiry and ability to work as a team

The team building session will address the appreciation of diversity in an effective team and how to contribute in a multi-disciplinary environment.

## Intended Learning Outcomes (ILO)

ILO No.	Description
1	Apply an engineering design approach to: generate ideas, model, analyze, predict and build an innovative object of engineering interest taking into consideration both societal and economic impact
2	Describe appropriate knowledge and behavior for effective and ethical membership on a technical team
3	Communicate effectively with others orally, in writing and by use of sketches/drawings.
4	Develop possible innovative engineering solutions via peer learning and self-initiated learning processes
5	Develop new creativity building techniques and exercises
6	Plan and propose creative solutions for a specific context, informed by engagement with a community group

### Course Instructor

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### Course Coordinators

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CORE 1200 - Engineering Team Design Experience				
Course Schedule - Spring 2023				
Week	Date	Timeslot	Venue	Session
1	3-Feb	12:00 to 1:30	Rm 5620	Course Introduction
		1:30 to 2:50		
2	10-Feb	12:00 to 1:30	Rm 5620	Team Building with Spatial Intro to Blender
		1:30 to 2:50		
3	27-Feb	12:00 to 1:30	Rm 5620	Intro to Creativity
		1:30 to 2:50		
4	24-Feb	12:00 to 1:30	Rm 5620	Creativity 2
		1:30 to 2:50		
5	3-Mar	12:00 to 1:30	Rm 5620	Creativity 3
		1:30 to 2:50		
6	10-Mar	12:00 to 1:30	Rm 5620	Design Thinking
		1:30 to 2:50		
7	17-Mar	12:00 to 1:30	Rm 5620	Graphic Design
		1:30 to 2:50		
8	24-Mar	12:00 to 1:30	Rm 5620	Idea Pitch
		1:30 to 2:50		
9	31-Mar	12:00 to 1:30	Rm 5620	3D Modeling of Final Design Task
		1:30 to 2:50		
10	14-Apr	12:00 to 1:30	Rm 5620	Modelling Feedback and Consultation
		1:30 to 2:50		
11	21-Apr	12:00 to 1:30	Rm 5620	Team Design
		1:30 to 2:50		
12	28-Apr	12:00 to 1:30	Rm 5620	Roadshow
		1:30 to 2:50		
13	5-May	12:00 to 1:30	Rm 5620	Product Presentation And Reflection
		1:30 to 2:50		

## Assessment

	Schedule	Grading	ILO#
Blender Sessions x3	Weeks 3-7	15%	#1, #2, #6
Visual Representation	Week 7	20%	#3, #5
Idea Pitch	Week 8	20%	#1, #2, #3, #4, #6
3D Model	Week 12	20%	#1, #3, #6
Roadshow	Week 12	25%	#1, #5