



Module Title Capstone Design II	Module Code MSDE 423	Semester (Sem 1 / Sem 2) Sem 1
Credits 20	Level 6	Professor and email Dong-Young JANG dyjang@seoultech.ac.kr
Delivery Method Seminar, tutorial, workshops / Project	Delivery Location SeoulTech, Mugung Hall	
Module Synopsis This module aims to introduce students to the principles of successful engineering design and to guide students through a practical design experience. It also provides experience of undertaking a complete group design project, allowing them to understand their individual nature within a group when undertaking a significant investigation.		
Outline Syllabus Review of Writing Good Report / Excellent Presentation. An integral part of the project is the report which should: <ol style="list-style-type: none">1. Describe the purpose of the investigation.2. Summarize the literature search and present an analysis of the findings.3. Describe the work done and clearly explain the logic behind the decisions and choices made.4. Present the results obtained.5. Critically review both the approach adopted and the results achieved.6. State any definite conclusions reached. A poster display shall be produced to assist the examiners in arriving at an appropriate classification of the achievement. Capstone design step 2 Learning product generation. Evaluation for performance, cost, manufacture, and assembly		



Indicative Reading:

- 1) Shigley's Mechanical Engineering Design, Richard G. Budynas and J. Keith Nisbett, 8th Edition, 2008
- 2) *Product Design and Development* by Karl T. Ulrich and Steven D. Eppinger (McGraw-Hill 2008)
- 3) Control Systems Engineering 4th Edition, Norman S. Nise, Wiley, 2003

NOTIONAL STUDENT WORKLOAD	Hours
MODE OF DELIVERY (FT / PT / DL)	FT
Lectures	
Seminars	20
Tutorials	40
Laboratories/studios/practical	40
Directed learning	
Independent Learning	100
Work experience/fieldwork	
Other: eg formal presentation	
Total Workload 100 hours for a 10 credit module 200 hours for a 20 credit module	200

Module Outcomes

KU1,2,3,4	<p>KU1. Evaluate and apply unfamiliar knowledge of the scientific and mathematical principles of mechanical engineering to solve Real-World problems.</p> <p>KU2. Perform advanced analysis of unfamiliar engineering systems.</p> <p>KU3. Introduce and utilise complex methodologies to create solutions to a variety of Real-World engineering problems.</p> <p>KU4. Define and investigate complex problems and constraints that occur in engineering design with the aid of advanced tools.</p>
IPSA1,4	<p>IPSA1. Apply advanced approaches to solving complex and unfamiliar real world mechanical engineering problems.</p> <p>IPSA4. Professionally communicate a broad range of engineering concepts to expert and non-expert audiences using a variety of advanced formats and media.</p>



MSDE Module Descriptor

PVA2,3	PAV2. Critically analyse advanced solutions to complex and unfamiliar mechanical engine problems. PAV3. Reflect upon interpersonal and learning skills and explain their use in differing situations.

Assessments	Assessment Type	Weighting %	Midterm/interim/final
Course Work	Weekly Reports	10	
Course Work	Final Report/ Presentation	50	Final
Quiz			
Test			
Laboratory			
Exam			
Presentation	3 progress presentations	40	