



MSDE Module Descriptor

Module Title Microprocessor and Computer Automation in Manufacturing	Module Code MSDE 346	Semester (Sem 1 / Sem 2) Sem 2
Credits 10	Level 5	Professor and email Dongha SHIM dongha@seoultech.ac.kr
Delivery Method Lecture / Lab	Delivery Location SeoulTech, Mugung Hall	
Module Synopsis <p>This module covers fundamental topics necessary for analysing microprocessor structures and programming for computer automation systems as used for manufacturing. Application to actuators such as DC motors, step motors, and other automated sensors and actuators will be covered. The module is delivered through a series of lectures and practical work which is designed to help the students understand the taught material assessment is through a series of four laboratories and a final exam.</p>		
Outline Syllabus <ol style="list-style-type: none">1. Digital number systems and representations2. Introduction to Microprocessor3. Microprocessor programming4. Computer and microprocessor interface5. Application to sensors and actuators6. Computer aided automation system design		
Indicative Reading <ol style="list-style-type: none">1) Digital and Microprocessor Fundamentals: Theory and Applications, 4th Ed., William Kleitz, Prentice Hall, 2003.2) ATmega128 online documents		

NOTIONAL STUDENT WORKLOAD	Hours
MODE OF DELIVERY (FT / PT / DL)	FT
Lectures	30



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Seminars	
Tutorials	
Laboratories/studios/practical	30
Directed learning	
Independent Learning	40
Work experience/fieldwork	
Other: eg formal presentation	0
Total Workload 100 hours for a 10 credit module 200 hours for a 20 credit module	100

Module Outcomes	
KU3	KU3. Identify and utilise basic methodologies to create solutions to specific engineering problems.
IPSA2,5	IPSA2. Communicate a range of engineering concepts to expert and non-expert audiences using a variety of formats and media. IPSA5. Demonstrate the ability to solve advanced design problems and communicate the designs to a third part
PVA2	PVA2. Apply creativity in the development of solutions to standard engineering problems.

Assessments	Assessment Type	Weighting %	Mid-Term/interim/final
Coursework			
Project			
Quiz			
Test			
Laboratory	Group report	40	Lab
Exam	Final formal examination	60	Final
Presentation			