

Ming Chuan University Department of Electronic Engineering
Course Outline for all students entering in 2013

Elective Courses		Credits	Hours	1 st year				2 nd year				3 rd year				4 th year				Note
				Fall		Spring		Fall		Spring		Fall		Spring		Fall		Spring		
				class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
IC Chip and System	Digital System Design and Laboratory	3	3					3												Computer course (Program core course)
	MATLAB Programming	3	3					3												Computer course (Program core course)
	Probability and Statistics	3	3					3												
	Computer organization	3	3									3								
	Data Structure	3	3									3								Computer course
	Introduction to VLSI Design	3	3									3								Computer course (Program core course)
	Electronic Circuit Design	3	3									3								
	Digital Signal Processing	3	3											3						
	Digital Image Processing	3	3											3						
	Analog IC Design	3	3											3						
	Linear Circuit Design	3	3											3						
	FPGA/CPLD Design	3	3											3						Computer course
	Control System	3	3													3				
	Robotic Control	3	3															3		Computer course
Embedded Systems	3	3															3		Computer course	
Electronic and semiconductor device	Optics and Optical Design	3	3						3											Computer course
	Modern Physics	3	3						3											
	Electromagnetics II	3	3						3											Program core course

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			class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Military Training Education III	0	2					2												
Vector Calculus	3	3					3												
Programming Design II	3	3					3												Computer course
Military Training Education IV	0	2							2										
Intellectual Property Rights	2	2							2										
Computer aided design and analysis of electromagnetics	3	3							3										Computer course
Optoelectronic	3	3									3								
Communication Systems	3	3									3								
Green Energy Technology	3	3									3								
Introduction to Solar Cells	3	3									3								
Complex Functions	3	3									3								
Workplace English	3	3											3						
Introduction to Telecommunication Engineering	3	3											3						
Introduction to Random Processes	3	3											3						
Numerical Analysis	3	3											3						
VLSI Design	3	3											3						
Discrete Mathematics	3	3											3						
Mixed Integrated Circuit Design	3	3											3						
Introduction to Data Compression	3	3													3				
Solid State Electronics	3	3													3				
III-V compound semiconductor and photo- electronic devices	3	3													3				
Applied Cryptography	3	3													3				
Introduction to Computer Networks	3	3													3				
Computer Vision	3	3													3				
Artificial Intelligence	3	3													3				
Neural Networks	3	3													3				
Chip Design Practices	3	3													3				Computer course
Introduction to Numerical Electromagnetics	3	3													3				

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			class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Physical Training (7)	2	2													2				
NANO Electronic Devices	3	3															3		
Digital Communication	3	3															3		
Physical Training (8)	2	2															2		
Grand Total	Subtotal Required Course Credits	87																	
	Subtotal Elective Course Credits	41																	
	Total	128																	

Graduation Requirements:

1. In accordance with the General Provisions for Study, undergraduate students need to satisfactorily complete Service Learning, meet the university-wide basic competencies of English, Information Technology, Chinese, and Sports, and pass the core competencies of their department to be eligible for graduation.
2. Students who entered in and since the 2008-09 academic year need to complete at least 12 General Education course credits. General Education courses are divided into three areas: Humanities, Social Science, and Natural Science. Each area is divided into two subcategories: core and extended. Students need to take 1 two-credit course in both of the subcategories within each area to be eligible for graduation. Only 12 course credits will be counted toward graduation. Additional course credits earned in General Education courses are not counted toward graduation.
3. Courses from focused course programs set up by any individual IT department or cooperatively between IT and other Schools can be regarded as the EE professional elective courses under the approval of the department chair. Courses selected from other Schools can also be regarded as the EE professional elective courses under the approval of the department chair with a limitation of at most 20 course credits.
4. When retaking the required course, students can choose those which are with the same course name or the same course content as substitutions under the approval of the department chair. These courses can be regarded as their graduation credits.
5. Students who fulfill the requirement of each courses groups can apply for the corresponding certificate. Each courses groups has its own regulation as follows:
 - (1) The VLSI and System Engineering Courses Groups: In order to get the courses groups certificate, students must make at least seven elective courses, the program required courses include: Digital System Design and Lab, MATLAB Programming, Introduction to VLSI Design.
 - (2) The Electronic Components Courses Groups: In order to get the courses groups certificate, students must make at least seven elective courses,

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the program required courses include: Electromagnetics II, Optoelectronic Devices, Introduction to Semiconductor Devices.

6. Students can choose the courses from the EE master program, which can be counted as their graduation credits under the approval of the department chair.
7. Education credits cannot be counted as the graduation credits.
8. The elective courses on this Course Outline may be counted toward total graduation credits by students who entered the university prior to the 2013 academic year.