

Ming Chuan University Department of Electronic Engineering
Course Outline for all students entering in 2010

Course	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				
Chinese Literature: Appreciation And Creative Writing	4	4	2		2																	
Practical English 1	2	3	2	1																	1	
Practical English 2	2	3			2	1																
Practical English 3	1	2					1	1														
Practical English 4	1	2							1	1												
English for Business Communication 1	1	2									1	1										
English for Business Communication 2	1	2											1	1								
Practical English of Professionals 1	0	2													1	1						
Practical English of Professionals 2	0	2																1	1			
General Ed	12	12																				2
Physical Education (1)~(6)	0	12	2		2		2		2		2		2									
Implementing Service-Learning	0	1																				
Subtotal	24	47	6		6		3		3		3		3									
Professional Required Courses	Calculus	6	8	3	1	3	1															
	Physics I	3	3	3																		
	Physics Laboratory I	1	3	1	2																Computer course	
	Concept of Computer Science	3	5	3	2																Computer course	
	Introduction to Information Technology	1	1	1																		
	Linear Algebra	3	3	3																		
	Physics II	3	3			3																
	Physics Laboratory II	1	3			1	2															Computer course

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				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 Program	Digital System Design and Laboratory	3	4					2	2											Computer course (Program core course)
	MATLAB Programming	3	5					3												Computer course (Program core course)
	Probability and Statistics	3	3					3												
	Digital Signal Processing	3	3									3								
	Computer organization	3	3									3								
	Data Structure	3	3									3								Computer course
	Introduction to VLSI Design	3	4									3	1							Computer course (Program core course)
	Electronic Circuit Design	3	3									3								
	Control System	3	3											3						
	Digital Image Processing	3	3											3						Computer course
	Analog IC Design	3	3											3						
	FPGA/CPLD Design	3	4											3	1					Computer course
	Mixed Integrated Circuit Design	3	3											3						
	Robotic Control	3	3													3				Computer course
Electronic and semiconductor device program	Optics and Optical Design	3	3							3										Computer course
	Electromagnetics II	3	3							3										(Program core course)
	Electromagnetic Wave	3	3							3										
	Introduction to Electronic Materials	3	3							3										
	Optoelectronic Devices	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	
Introduction to Semiconductor Devices	3	3										3							(Program core course)
Introduction to Microwave Engineering	3	3										3							
Complex Functions	3	3										3							
Modern Physics	3	3												3					
Antenna Project	3	3												3					
Semiconductor Measurement	3	3												3					
Introduction to Semiconductor Manufacturing Technology	3	3													3				
Introduction to Flat Display	3	3													3				
Semiconductor Optics	3	3													3				
Semiconductor Thin Film Technology	3	3															3		
Optical Fiber Communication	3	3															3		
Military Training Education I	0	4	2		2														1-semester courses
Nursing Education I	0	4	2		2														1-semester courses
Japanese I	4	6	2	1	2	1													1-semester courses
Military Training Education II	0	4					2		2										1-semester courses
Vector Calculus	3	3					3												
Programming Design II	3	3					3												Computer course
Intellectual Property Rights	2	2							2										
Optoelectronic	3	3										3							
Communication Systems	3	3										3							
Introduction to Telecommunication Engineering	3	3												3					

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			class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	class	lab	
Numerical Analysis	3	3											3						
VLSI Design	3	3											3						
Discrete Mathematics	3	3											3						
Linear Circuit Design	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				
NANO Electronic Devices	3	3															3		
Embedded Systems	3	3															3	Computer course	
Digital Communication	3	3															3		
Physical Training (7)~(8)	4	4													2		2	1-semester courses	
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.

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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 only be regarded as the EE professional elective courses under the approval of the department chair; otherwise, the credits cannot be counted as the graduation credits.
4. Students who fulfill the requirement of each program can apply for the corresponding certificate. Each program has its own regulation as follows:
 - (1) The VLSI and System Engineering Program: In order to get the program 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 Program: In order to get the program certificate, students must make at least seven elective courses, the program required courses include: Electromagnetics II, Optoelectronic Devices, Introduction to Semiconductor Devices.
5. Education credits cannot be counted as the graduation credits.
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. The elective courses on this Course Outline may be counted toward total graduation credits by students who entered the university prior to the 2010 academic year.