Ming Chuan University Semiconductor Applications Program
Course Outline for all students entering in 2025

	Course	Credits	Hours	1st year Fall class	lab	1st year Spring class	lab	2nd year Fall class	lab	2nd year Spring class	lab	3rd year Fall class	lab	3rd year Spring class	lab	4th year Fall class	lab	4th year Spring class	lab	Note
Core Required Courses	Chinese Literature: Appreciation And Creative Writing I	2	2	2																
	Chinese Literature: Appreciation And Creative Writing II	2	2			2														
	Introduction of Artificial Intelligence	2	3																	
	Practical English 1	0	2	1	1															
	Practical English 2	0	2			1	1													
	Practical English 3	0	2					1	1											
	Practical English 4	0	2							1	1									
	English for Business Communication 1	2	3									2	1							1
	English for Business Communication 2	2	3											2	1					
	Practical English of Professionals 1	2	3													2	1			
	Practical English of Professionals 2	2	3															2	1	
	General Ed	12	12																	2
	Physical Education (I)~(IV)	0	8	2		2		2		2										
	Subtotal	26	47																	
Professional Required Courses	Concept of Computer Science	3	5	3	2															Computer course
	Programming Design I	3	5	3	2															Computer course
	Calculus I	3	3	3																
	Physics I	3	3	3																
	Calculus II	3	3			3														
	Physics II	3	3	3																
	Electronic Circuits I	3	3			3														

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Physics Laboratory	1	3			1	2													Practical course
Digital Logic Design	3	3			3														
Electronic Circuits II	3	3					3												
Electronics I	3	3					3												
Electromagnetics I	3	3					3												
Engineering Mathematics I	3	3					3												
Electronic Circuits Laboratory I	1	3					1	2											Practical course
Digital System Design and Laboratory	3	3					3												Computer course
Electronics II	3	3							3										
Electronic Circuits Laboratory II	1	3							1	2									Practical course
Introduction to Semiconductor Devices	3	3							3										Program core course
Microprocessor Design and Laboratory	3	4							3	1									Computer course
Project Research I	3	3											3						
Project Research II	3	3													3				
Subtotal	57	68																	

Total Required Course Credits (Electronic Engineering Department)	87																		

Elective Courses	Credits	Hours	1st year Fall class	1st year Fall lab	1st year Spring class	1st year Spring lab	2nd year Fall class	2nd year Fall lab	2nd year Spring class	2nd year Spring lab	3rd year Fall class	3rd year Fall lab	3rd year Spring class	3rd year Spring lab	4th year Fall class	4th year Fall lab	4th year Spring class	4th year Spring lab	Note
Linear Algebra	3	3					3												
Probability and Statistics	3	3					3												
Simulation Program with Integrated Circuit Emphasis (spice)	3	3							3										
Modern Physics	3	3							3										
Electromagnetics II	3	3							3										

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Engineering Mathematics II	3	3							3										
Electronic Circuits Laboratory III	1	3									1	2							Practical course
Introduction to VLSI Design	3	3									3								Computer course (Program core course)
Computer Organization	3	3									3								
Electromagnetic Wave	3	3									3								
Optoelectronic Devices	3	3									3								
Solid State Electronics	3	3									3								Program core course
Electronic Packaging Technology for Semiconductor Devices	3	3									3								
Introduction to Integrated Circuit Testing	3	3									3								
Process Cleanliness and Chemical Hazard Prevention	3	3									3								
Physical Education V	2	2									2								
Electronic Circuit Design	3	3											3						
Integrated Circuit Layout Design	3	3											3						Computer course
Introduction to Semiconductor Manufacturing Process	3	3											3						Program core course
Introduction to Electronic Materials	3	3											3						
Semiconductor Measurement	3	3											3						
Practical Integrated Circuit Test Programming	3	3											3						
Process and Safety Technology Assessment in High-Tech Industries	3	3											3						
Artificial Intelligence	3	3											3						
Introduction to Deep Learning	3	3											3						
Workplace English	3	3											3						
Optoelectronic Sensor Application Circuit Lab	3	3											3						
Physical Education VI	2	2											2						

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Process Safety Management and Practical Applications	3	3													3				
Internship	3	3													3				
Practical of Electronics	3	3													3				
Verilog Programming Design	3	3													3				
FPGA/CPLD Design	3	3													3				Computer course
Digital Integrated Circuit Design	3	3													3				
Introduction to Flat Display	3	3													3				
Semiconductor Measurement Laboratory	3	3													3				
Introduction to Semiconductor Reliability Engineering	3	3													3				
NANO Electronic Devices	3	3													3				
Power Devices	3	3													3				
Physical Education VII	2	2													2				
Analog Integrated Circuit Design	3	3															3		
High-Frequency Circuit Design	3	3															3		
Power Integrated Circuit Design	3	3															3		
Silicon Photonic Device Design	3	3															3		
Computer-Aided Semiconductor Design	3	3															3		
Memory Devices	3	3															3		
Advanced Internship	3	3															3		
Practical Project of Electronics	3	3															3		
Physical Education VIII	2	2															2		
Grand Total — Subtotal Required Course Credits	83																		
Subtotal Elective Course Credits	45																		
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. Only 20 credits at most from other departments can be counted by department. Professional courses given by departments of IT school or joint courses with IT school can be treated as elective courses from other departments. For non-IT professional courses, only those approved by the chairman of department during elective period can be treated as elective courses from other departments.

4. When retaking the required course, for only senior 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 must select at least 3 out of 4 core courses in the elective course group.

6. Students can choose the courses from the master program, which can be counted as their graduation credits.

7. Education credits cannot be counted as the graduation credits.

8. Credits from interdisciplinary programs not listed in the graduation framework can be recognized as credits from other departments.