銘傳大學半導體應用學士學位學程國際專班必選修科目表（115 學年度入學生適用）

Ming Chuan University

Bachelor's Degree Program in Semiconductor Applications (International Student Class)

Required and Elective Course List (Applicable to Students Admitted in the 2026 Academic Year)

	科目 Subject	學分 Credits	時數 Hours	第一學年 First Year				第二學年 Second Year				第三學年 Third Year				第四學年 Fourth Year				備註 Remarks
				上 First Semester		下 Second Semester		上 First Semester		下 Second Semester		上 First Semester		下 Second Semester		上 First Semester		下 Second Semester		
				授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	
校定必修 University -required course	基礎華語(一)(英) Basic Mandarin I	3	3	3																僑、外籍生適用
	基礎華語(二)(英) Basic Mandarin II	3	3			3														僑、外籍生適用
	人工智慧概論(英) Introduction to Artificial Intelligence	3	3	3																電腦課程 Computer Courses
	學術英文文法與寫作(一)(英) Academic English Grammar and Writing I	3	3			3														
	英文寫作(2) (英) English Composition II	3	3					3												
	英文寫作(3)(英) English Composition III	3	3							3										
	通識教育(英) General Education	12	12																	備註 2 Remarks 2
	體育(壹~肆) (英) Physical Education (I~IV)	0	8	2		2		2		2										
	小計	**30**	**38**	**8**		**8**		**5**		**5**										
專業必修 Required	計算機概論(英) Concept of Computer Science	3	3	3																電腦課程 Computer Courses
	程式設計(一) (英) Programming Design(I)	3	3	3																電腦課程 Computer Courses
	微積分(一) (英) Calculus (I)	3	3	3																
	物理學(一) (英) Physics (I)	3	3	3																

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Required and Elective Course List (Applicable to Students Admitted in the 2026 Academic Year)

科目 Subject	學分 Credits	時數 Hours	第一學年 First Year				第二學年 Second Year				第三學年 Third Year				第四學年 Fourth Year				備註 Remarks
			上 First Semester		下 Second Semester		上 First Semester		下 Second Semester		上 First Semester		下 Second Semester		上 First Semester		下 Second Semester		
			授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	授課 Lecture	實習輔導 Practical Training & Guidance	
微積分(二)(英) Calculus (II)	3	3			3														
物理學(二)(英) Physics (II)	3	3			3														
電路學(一)(英) Electronic Circuits (I)	3	3			3														
數位邏輯設計(英) Digital Logic Design	3	3			3														
電路學(二)(英) Electronic Circuits (II)	3	3					3												
電子學(一)(英) Electronics (I)	3	3					3												
電磁學(一)(英) Electromagnetics (I)	3	3					3												
工程數學(一)(英) Engineering Mathematics (I)	3	3					3												
電子電路實驗(一)(英) Electronic Circuits Lab (I)	3	3					3												實作課程 Practical Courses
電子學(二)(英) Electronics (II)	3	3							3										
電子電路實驗(二)(英) Electronic Circuits Lab (II)	3	3							3										實作課程 Practical Courses
專題研究(一)(英) Research Project (I)	3	3									3								
專題研究(二)(英) Research Project (II)	3	3											3						
小計	**51**	**51**	**12**		**12**		**15**		**6**		**3**		**3**						

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專業選修 Elective Professional Courses	普通化學(英) General Chemistry	3	3	3																新加選修課 New added
	物理學實驗(英) Physics Lab (I)	3	3			3														實作課程 Practical Courses
	程式設計(二) (英) Programming Design(II)	3	3			3														
	半導體產業概論(英) Introduction to the Semiconductor Industry	3	3			3														新加選修課 New added
	數位系統設計與實習(英) Digital System Design and Lab	3	3					3												
	線性代數(英) Linear Algebra	3	3					3												
	機率與統計(英) Probability and Statistics	3	3					3												
	材料科學導論(英) Introduction to Materials Science	3	3					3												新加選修課 New added
	半導體物理(英) Semiconductor Physics	3	3					3												
	半導體元件導論(英) Introduction to Semiconductor Devices	3	3							3										課群核心 Core Course Group
	環境綠色化學(英) Environmental and Green Chemistry	3	3							3										新加選修課 New added
	微處理機原理與實習(英) Microprocessor Principles and Laboratory	3	4							3	1									
	熱力學與統計物理(英) Thermodynamics & Statistical Physics	3	3							3										新加選修課 New added
	電路模擬設計實習(spice) (英) Circuit Simulation and Design Practice (SPICE)	3	3							3										電腦課程 Computer Courses
	近代物理(英) Modern Physics	3	3							3										
	電磁學(二) (英) Electromagnetics (II)	3	3							3										
	工程數學(二) (英) Engineering Mathematics (II)	3	3							3										
	電子電路實驗(三) (英) Electronic Circuits Lab (III)	3	3									3								實作課程 Practical Courses

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Required and Elective Course List (Applicable to Students Admitted in the 2026 Academic Year)

	超大型積體電路導論(英) Introduction to VLSI Design	3	3									3								課群核心 Core Course Group
	電磁波(英) Electromagnetic Waves	3	3									3								
	光電元件(英) Optoelectronic Devices	3	3									3								
	半導體電子構裝技術(英) Semiconductor Electronic Packaging Technology	3	3									3								
	積體電路測試導論(英) Introduction to Integrated Circuit Testing	3	3									3								
	體育(三上)(英) Physical Education (III-1)	2	2									2								大三體育僅承認 2 學分 Only 2 credits of Physical Education in the third year are recognized.
	固態物理(英) Solid-State Physics	3	3									3								新加選修課 New added
	計算機結構(英) Computer Architecture	3	3									3								
	營業秘密與智慧財產之應用與案例 Applications and Case Studies in Trade Secrets and Intellectual Property											3								
	實驗設計 Experimental Design													3						
	微電子工程 Microelectronics Engineering													3						
	ESD 防護設計導論(英) Introduction to ESD Protection Design	3	3											3						
	電子電路設計(英) Electronic Circuit Design	3	3											3						
	積體電路布局設計(英) Integrated Circuit Layout Design	3	3											3						電腦課程 Computer Courses
	半導體製程概論(英) Introduction to Semiconductor Manufacturing Technology	3	3											3						課群核心

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Required and Elective Course List (Applicable to Students Admitted in the 2026 Academic Year)

	電子材料概論(英) Introduction to Electronic Materials	3	3											3						
	半導體量測(英) Semiconductor Measurements	3	3											3						
	積體電路測試程式實務(英) Practical Applications of Integrated Circuit Test Programming	3	3											3						
	高科技產業製程與安全技術評估(英) High-Tech Industry Processes and Safety Technology Evaluation	3	3											3						
	人工智慧(英) Artificial Intelligence	3	3											3						
	深度學習概論(英) Introduction to Deep Learning	3	3											3						
	職場英文(英) Workplace English	3	3											3						
	光電感測元件應用電路實習(英) Laboratory on Optoelectronic Sensor Circuit Applications	3	3											3						
	體育(三下)(英) Physical Education (III-2)	2	2											2						大三體育僅承認 2 學分 Only 2 credits of Physical Education in the third year are recognized.
	製程潔淨與化學品危害預防(英) Cleanroom Processes and Chemical Hazards Prevention	3	3													3				
	半導體設備概論(英) Introduction to Semiconductor Equipments	3	3													3				新加選修課 New added
	製程安全管理與應用實務案例(英) Process Safety Management and Practical Case Studies	3	3													3				
	企業實習(英) Corporate Internship	3	3													3				
	職場實務(英) Workplace Practical Training	3	3													3				
	Verilog 程式設計(英) Verilog Programming Design	3	3													3				

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Required and Elective Course List (Applicable to Students Admitted in the 2026 Academic Year)

	FPGA/CPLD 設計(英) FPGA/CPLD Design	3	3													3				
	數位積體電路設計(英) Digital Integrated Circuit Design	3	3													3				
	平面顯示器概論(英) Introduction to Flat Panel Displays	3	3													3				
	半導體量測實驗(英) Semiconductor Measurement Experiments	3	3													3				
	半導體可靠度工程導論(英) Introduction to Semiconductor Reliability Engineering	3	3													3				
	奈米電子元件(英) Nanoelectronic Devices	3	3													3				
	功率元件(英) Power Devices	3	3													3				
	體育(四上)(英) Physical Education (IV-1)	2	2													2				大四體育僅承認 2 學分 Only 2 credits of Physical Education in the fourth year are recognized.
	統計製程管制導論(英) Introduction to Statistical Process Control	3	3															3		新加選修課 New added
	記憶體元件導論(英) Introduction to Semiconductor Memory Devices	3	3															3		
	類比積體電路設計(英) Analog Integrated Circuit Design	3	3															3		
	高頻電路設計(英) High-Frequency Circuit Design	3	3															3		
	功率積體電路設計(英) Power Integrated Circuit Design	3	3															3		
	矽光子元件設計(英) Silicon Photonics Device Design	3	3															3		

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	半導體電腦輔助設計(英) Semiconductor Computer-Aided Design	3	3															3		
	企業進階實習(英) Advanced Corporate Internship	3	3															3		
	職場實務專題(英) Workplace Practical Projects	3	3															3		
	體育(四下) (英) Physical Education (IV-2)	2	2															2		大四體育僅承認 2 學分 Only 2 credits of Physical Education in the fourth year are recognized.
通識-自然科學類選修 General Education - Natural Sciences	生物學 Biology	3	3	3																
	會計學(英) Accounting	3	3	3																
	科學導論(英) Introduction to Science	3	3					3												
	統計學(英) Statistics	3	3							3										
	環境議論研究(英) Introduction to Law	3	3							3										
	海洋生物學(英) Marine Biology	3	3							3										
	人類演化論(英) Human Evolution	3	3							3										
	環境科學(英) Environmental Science	3	3							3										
	自然科學專題 Natural Science Topics	3	3							3										
	醫學與健康(英) Medicine and Health	3	3									3								
	環境變遷與永續發展(英) Environmental Change and Sustainable Development	3	3									3								
	環境保護概論(英) Introduction to Environmental Protection	3	3											3						

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通識-社會科學類選修 General Education - Social Sciences	經濟學(英) Economics	3	3	3																	
	心理學(英) Psychology	3	3	3																	
	社會學(英) Sociology	3	3			3															
	政治學(英) Politics	3	3			3															
	社會科學專題(英) Special Topics on Social Science	3	3			3															
	法律概論(英) Introduction to Law	3	3							3											
	生涯規劃(英) Career Planning	3	3									3									
	人際關係(英) Interpersonal Relationships	3	3											3							
	全球化的理論與實務(英) The Theory and Practice of Globalization	3	3											3							
通識-人文科學類選修 General Education - Humanities	中國文學概論(英) Introduction to Chinese Literature	3	3	3																	
	現代中國專題(英) Special Topics on Modern China	3	3	3																	
	人文專題(英) Special Topics on Humanity	3	3	3																	
	中國文化概論(英) Introduction to Chinese Culture	3	3	3																	
	西洋文學概論(英) Introduction to Western Literature	3	3	3																	
	短篇小說選讀(英) Selected Readings in Short Stories	3	3	3																	
	文學鑑賞語創作 Chinese Literature: Appreciation and Creative Writing	3	3	3																	
	藝術專題 Special Topics on Art	3	3	3																	
	世界文學概論(英) Introduction to World Literature	3	3			3															
	西洋藝術賞析(英) Western Art Appreciation	3	3			3															
	歷史文化與社會變遷 Historical Culture and Social Change	3	3			3															
	跨文化溝通(英) Cross-cultural Communication	3	3					3													

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	公共演說(英) Public Speaking	3	3							3										
	休閒流行與文化(英) Casual Fashion and Culture	3	3									3								
	跨文化溝通(英) Cross-cultural Communication	3	3													3				
	世界文學概論(英) Introduction to World Literature	3	3													3				
通識-跨領域通識學科 General Education - Interdisciplinary General Education	國際禮儀與溝通專題(英) Etiquette and Communication	3	3					3												
	教育心理學(英) Educational Psychology	3	3					3												
	第二與習得(英) Second Language Acquisition	3	3					3												
	中級華語(一)(英) Intermediate Mandarin Conversation I	3	3					3												
	亞洲專題(英) Special Topics on Asia	3	3					3												
	第二外國語(一)(英) Second Foreign Language I	3	3					3												
	領導與統馭(英) Leadership	3	3							3										
	應用語言學(英) Applied Linguistics	3	3							3										
	國際專題(英) Special Topics on International Relations	3	3							3										
	兩岸專題(英) Special Topics on Cross-strait	3	3							3										
	第二外國語(英) Second Foreign Language	3	3							3										
	中級華語(二) (英) Intermediate Mandarin Conversation II	3	3							3										
	全球化專題(英) Special Topics on Globalization	3	3							3										
	第二外國語(二)(英) Second Foreign Language II	3	3							3										
	談判專題 Special Topics on Negotiation	3	3							3										
	環保經濟 The Economics of Environmental Pollution	3	3							3										

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	實用英文閱讀(英) Practical English Reading	3	3									3								
	批判識讀(英) Critical Reading	3	3									3								
	公共演說(英) Public Speaking	3	3													3				
	國際禮儀與溝通專題(英) Etiquette and Communication	3	3													3				
	必修科目學分數合計 Required Course Credits Total	81																		
	至少應選修學分數 Minimum Elective Credits Required	47																		
	本系專業選修學分數 Departmental Elective Credits	27																		
	得承認外系選修學分數 Recognized Elective Credits from Other Departments	20																		
	合計 Total	128																		

修業規定(Academic Regulations)：

1. 依本校學則規定，大學部學生需通過「英語能力」、「資訊能力」、「中文能力」、「運動能力」及「專業基本能力」檢定，始得畢業。
   In accordance with the university's academic regulations, undergraduate students must pass assessments in "English Proficiency," "Information Literacy," "Chinese Proficiency," "Physical Fitness," and "Fundamental Professional Competencies" in order to qualify for graduation.

2. 學生須於四年內修畢校定必修之四大學科共 12 學分；社會科學類至少選修 1 科，自然科學類至少選修 1 科，人文學科至少選修 1 科，跨領域通識類至少選修 1 科，多修習之通識課程學分不列入畢業學分。
   Students must complete a total of 12 credits in the four categories of university-required general education courses within four years. Students are required to take at least one course in each of the following categories: Social Sciences, Natural Sciences, Humanities, and Interdisciplinary General Education. Credits earned from additional general education courses beyond the required 12 credits will not be counted toward the graduation credit requirement.

3. 學生修習外系課程本系最多列計 20 學分於畢業學分內。學生選修資訊學院各系專業課程或與資訊學院合作開設之學分學程內的課程可視為外系選修學分；若選修非資訊學院之專業課程或教育學程之學分，須於選課期間內經系主任同意後，方可列為外系選修學分。
   A maximum of 20 credits from courses in other departments may be counted toward graduation requirements. Professional courses offered by departments within the College of Informatics, as well as courses from credit programs jointly established with the College of Informatics, may be considered interdepartmental elective credits. If students choose to take professional courses

from departments outside the College of Informatics or courses from education programs, they must obtain approval from the department chair during the course selection period for the credits to be counted as interdepartmental electives.

4. 需重補修本系專業必修課程者，僅限大四學生得於選課期間內經主任同意後，以其他學系相同科目名稱或授課內容相同之課程對抵，並可列入畢業學分。
   Fourth-year students who need to retake required professional courses from the department may, with the department chair's approval during the course selection period, substitute equivalent courses with the same course title or similar content offered by other departments. These substituted courses may be counted toward graduation credits.

5. 學生選修課群核心之課程至少需 4 選 3。
   Students must select at least three courses from the four core courses in the designated elective course group.

6. 學生選修本系碩士班課程，可視為本系專業選修，其學分數得列計於畢業學分內。
   Graduate-level courses offered by the department may be counted as professional elective credits and included in the total graduation credits.
7. 未列於畢業架構的跨領域學分學程之學分，可認列為外系學分。
   Credits from interdisciplinary credit programs not included in the official graduation structure may be recognized as interdepartmental elective credits.