

明志科技大學四技部112學年度入學 機械工程系光機電組 課程總表

115/7/7 校課程委員會審議通過
115/5/28 院課程委員會審議通過
115/5/13 系課程委員會審議通過

		科 目 名 稱	一上		一下		二上		二下		三上		三下		四上		四下		每班人數	備註			
			學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	上限		下限		
必修	共同 (41學分)	基礎課程22學分	全民國防教育軍事訓練(一)(二)	0	2	0	2																
		體育(一)(四)(Physical Education)	1	2	1	2	1	2	1	2													
		永續發展與社會實踐(Sustainable Development and Social Practice)	1	1																			
		文學鑑賞與情意表達(Appreciation of Literature and Emotional Expression)	2	2																			
		藝文消費與社會參與(Art Literacy and Social Participation)																					
		生活與健康英文(一)(二)(English for Life and Business)	3	3	3	3			1	2	1	2											
		素養導讀(一)(二)(Yajual-Oed English)														1	2	1	2				
		英文實務(一)(二)(Practical English)																					
		社會哲學領域(Social Philosophy)							3	3													
		合計	7	10	6	9	5	7	2	4	0	0	0	0	0	1	2	1	2			22	
核心2 課程學分	大學之道(The Goal of University Education)	設計思考(Design Thinking)	1	2																			
		勤勞教育(一)(二)(Labor Education)	0	0.5	0	0.5																	
		合計	1	2.5	1	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		實習前職場素養訓練(Professionalism Prior to Curricular Practical Training)	1	2.5	1	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
校—共17 同學課分	多元學習模組(一)-(四)(Multimodal Learning Module)	合計	0	0	0	0	0	0	0	0	1	1	16	160	0	0	0	0			「工讀實務實習」、 「專案研究實		
		實習前技術訓練(Hands-on Courses Prior to Curricular Practical Training)								1	2												
專業 (53學分)	院—專系 必修 40學分	普通物理(一)(General Physics I)	3	3							1	2											
		微積分(一)(二)(Calculus I & II)	3	3	3	3																	
		工程數學(一)(Engineering Mathematics I)					3	3															
		合計	6	6	3	3	3	3	0	1	2	0	0	0	0	0	0	0			13		
		普通物理與實驗(General Physics with Laboratory)				3	4																
		普通化學(General Chemistry)	2	2																			
		計算機程式與實習(Computer Programming and Practice)	3	3																			
		電腦輔助機械製圖(Computer-Aided Mechanical Drawing)	3	3																			
		靜力學(Statics)			2	2																	
		動力學(Dynamics)					3	3															
		材料力學與實驗(Mechanics of Materials with Laboratory)					3	4															
		材料科學與工程實驗(Materials Science and Engineering Laboratory)									3	4											
		工程熱力學(一)(Engineering Thermodynamics I)									3	3											
		機械學(Mechanism of Machinery)									3	3											
		自動控制(一)(Automatic Control I)									3	3											
		流體力學(Fluid Mechanics)									3	3											
		專題製作(一)(二)(Special Project I, II)																					
		機械元件設計(一)(Design of Machine Elements I)														1	3	1	3				
工程倫理與專業實務講座(Lectures in Engineering Ethics and Practice)														1	2								
合計	8	8	5	6	6	7	12	13	3	3	0	0	5	8	1	3			40				
共至同少 (8應修學分)	通識課程	一、開課清單請參考「通識課程彙總表」。																					
		二、通識五類型課程「語言與全球化、人文藝術、社會研究與未來趨勢、自然科學與環境永續、自主學習」。 任選四類型各修畢2學分且合計至少8學分。																					
院專系選修 (11應修學分)	(院專系選修)	跨領域頂石專題(一)(Interdisciplinary capstone course(I))							1	3											跨領域專題Interdisciplinary capstone		
		跨領域頂石專題(二)(Interdisciplinary capstone course(II))								1	3										跨領域專題Interdisciplinary capstone		
		跨領域頂石專題(三)(Interdisciplinary capstone course(III))												1	3						跨領域專題Interdisciplinary capstone		
		跨領域頂石專題(四)(Interdisciplinary capstone course(IV))														1	3				跨領域專題Interdisciplinary capstone		
		科技英文閱讀與聽力訓練(一)(Technical English: Reading and Listening I)	0	1	0	1																榮譽學分學程課程Honors credit	
		科技英文閱讀與聽力訓練(二)(Technical English: Reading and Listening II)																				榮譽學分學程課程Honors credit	
		科技英文閱讀與聽力訓練(三)(Technical English: Reading and Listening III)																				榮譽學分學程課程Honors credit	
		科技英文閱讀與聽力訓練(四)(Technical English: Reading and Listening IV)					0	1														榮譽學分學程課程Honors credit	
		科技英文閱讀與聽力訓練(五)(Technical English: Reading and Listening V)							0	1												榮譽學分學程課程Honors credit	
		科技英文閱讀與發表(Scientific Presentation in English)								1	1											榮譽學分學程課程Honors credit	
		特色專題(一)(Senior Capstone Project I)														2	4					榮譽學分學程課程Honors credit	
		特色專題(二)(Senior Capstone Project II)																2	4			榮譽學分學程課程Honors credit	
合計	0	1	0	1	0	1	1	4	2	4	0	0	5	9	3	7			11				
選修 專業—應修畢至少46學分	系專業選修 (開設108學分)	電機學與實驗(Electric Machinery with Laboratory)				3	4														模組(Module) A		
		電子學與實驗(Electronics with Laboratory)					3	4													模組(Module) A		
		單晶片原理與應用(Single Chip Principle and Applications)									3	3										模組(Module) A	
		光電材料(Electrical and Optical Materials)										3	3									模組(Module) A	
		機電整合與實驗(Mechatronics with Laboratory)										3	3									模組(Module) A	
		生物光電組訓(Introduction to Biophotonics)													3	3						模組(Module) A、 兼距課程distance	
		基本感測實務(Sensor Practice)													3	3						模組(Module) A	
		微系統製程與實驗(Micro System Process and Laboratory)														3	3					模組(Module) A	
		機械加工實務(Practical Training of Machine)	3	3														3	3	3	15	模組(Module) B	
		人工智慧概論(Introduction to Artificial Intelligence)			2	2																模組(Module) B	
		Python程式語言與應用(Computer Programming and Applications)					3	3														模組(Module) B、 EMI課程English-	
		人工智慧物聯網概論(Introduction to Artificial Intelligence & Internet of Things)					2	2														模組(Module) B、 EMI課程English-	
		MATLAB軟體應用(Applications of MATLAB)								3	3											模組(Module) B	
		自動控制(二)(Automatic Control II)										3	3									模組(Module) B	
		電動機控制(Electrical Motor Control)													3	3						模組(Module) B	
		機械設計(Mechanism Design)													3	3						模組(Module) B	
		自動(化)學檢測(Automated Optical Inspection)																	3	3		模組(Module) B	
		無人載具技術與應用(Technology and Applications of Unmanned Vehicle)																		3	3	模組(Module) B	
		進階電腦輔助機械製圖(Advanced Computer-Aided Mechanical Drawing)			3	3																模組(Module) C	
		電腦輔助設計(一)(Computer-Aided Design I)					3	3														模組(Module) C	
		精密量測與實習(Precision Measurement and Practice)					3	3														模組(Module) C	
		3D 列印實務與應用(3D Printing Practice and Application)					3	3														模組(Module) C	
		模具設計與製造(Design and Manufacture of Mould)											3	3									模組(Module) C
		製造學(Manufacturing Principles)											3	3									模組(Module) C
		半導體製程(Semiconductor Process)													3	3							模組(Module) C、 兼距課程distance
		電腦輔助工程分析(Computer-Aided Engineering)															3	3					模組(Module) C
		塑膠模具設計與模流分析(Design and Flow Analysis of Plastic Mould)																	3	3			模組(Module) C
		專題初探(Special Project Exploring)	2	2																			模組(Module) D
		專題實務(Special Project Practice)					1	1															模組(Module) D
		工程數學(二)(Engineering Mathematics II)										3	3										模組(Module) D
		專題設計(一)(Special Project Design I)										1	1										模組(Module) D
		專題設計(二)(Special Project Design II)												1	1								模組(Module) D
		專題專題(二)(Special Project Design II)																					模組(Module) D
		氣壓學與實習(Pneumatic System and Practice)															3	3					模組(Module) D
		新能源工程導論(Introduction to New Energy Engineering)															3	3					模組(Module) D
		熱傳導(Heat Transfer)															3	3					模組(Module) D
化學工業—機電實務導論(Lectures on electro-mechanical engineering practice for chemical industry)															3	3					模組(模組(Module) D、 化工系開設		
工程光學與實驗(Engineering Optics and Laboratory)															3	3					模組(Module) D		
奈電子學與實驗(Nanoelectronics with Laboratory)																	3	3			模組(Module) D		
電動車輛電機整合工程師實務(Practice of Electric Vehicle Mechatronics Integration)																			3	3			
合計			3	3	10	11	18	19	10	10	16	16	6	6	27	27	18	18			108		

- 畢業至少應修 148 學分。
- 三上必修「實習前職場素養訓練」，三下必修「多元學習模組(一)-(四)」，共17學分。
- 每學期選課上限為 27 學分，大一至大二選課下限為 16 學分，大三、四選課下限為9學分。
- 三上課程採取濃縮方式（原一週授課時數三小時的課程變更為一週授課四小時）授課。
- 必修類別(二)、體類(四)，於大二至大四，採興趣選項教學。
- 學生應修畢一個跨領域學程或是第二專長學程，始得畢業。若選修院專專業選修「跨領域專題課程」，可申請替代專業必修之「專題製作」課程。
- 最低畢業學分認定：修畢第二專長學分學程/跨領域學分學程者：最低畢業學分結構調整為共同必修41學分、通識選修至少8學分(五類型，任選四類各2學分)，院專業必修13學分，系專業必修40學分，專業選修任選至少46學分，合計148學分；已修畢第二專長學分學程/跨領域學分學程外系學分，計採為系專業選修學分。
- 系專業選修分為光機電核心課程模組(模組A)、無人載具跨領域學分學程(模組B)、精密製造課程模組(模組C)、光機電選修課程模組(模組D)。其中光機電核心課程模組(模組A)至少需修習6門課程，其他模組任選。修習機械系其他兩班之專業選修，最多6學分，計採為專業選修學分。
- 修習本系系學程學生分生，「特色學程(一)(二)」、「科技英文簡報與表達」和「科技英文閱讀與聽力訓練(一)-(五)」為必選，但英文多益成績達標準者(700分)可免修「科技英文閱讀與聽力訓練(一)-(五)」。
- 依大學學則規定畢業應通過系專業能力畢業門檻，詳細說明「機械工程系專業能力畢業門檻及輔導要點」。
- 1 Students must obtain at least 148 credits before graduating.
- 2 Students must take "Professional Prior to Practical Training" in the first semester of the third year, and "Multimodal Learning Module" in the second semester, totaling 17 credits.
- 3 For each semester, courses taken may not exceed 27 credits. Freshmen (1st year) and sophomores (2nd year) must take courses with at least 16 credits. Juniors (3rd year) and seniors (4th year) must take courses with at least 9 credits.
- 4 During the first semester of the third year, study period will be condensed (lectures that originally took 3 hours a week will be extended to 4 hours a week).
- 5 The elective courses "Physical Education III" and "Physical Education IV" are offered based on students' interests from sophomore to senior.
- 6 Students may complete either an interdisciplinary program or a second-specialization program as one of the graduation requirements. If taking the "Interdisciplinary capstone course" from college's elective courses, students can apply to replace the "Special Projects" from Department Professional Compulsory courses.
- 7 Minimum Graduation Credits Requirement: For students who have completed the second major credit program/interdisciplinary credit program, the minimum graduation credit structure is adjusted as follows: 41 credits from common compulsory courses, at least 8 credits from general education elective courses (from five categories, selecting any four categories, 2 credits each), 13 credits from college compulsory courses, 40 credits from department compulsory courses, and at least 46 credits from department elective courses, making 148 credits in total. Credits obtained from the interdisciplinary or the second-specialization program will be counted as credits from department elective courses.
- 8 The department's elective courses are divided into the following modules: Opto-Mechanics Core Courses Module (Module A), Unmanned Vehicle Interdisciplinary Credit Program (Module B), Precision Manufacturing Course Module (Module C), Opto-Mechanics Elective Course Module (Module D). Among these, at least 6 courses must be taken from the Precision Machinery Core Courses Module (Module A), while the other modules can be chosen freely. A maximum of 6 credits from the professional electives of other classes within the Mechanical Engineering department can be counted as professional elective credits.
- 9 Honor program students who enroll to this department must take the following courses as mandatory courses: "Senior Capstone Project I - II", "Scientific Presentation in English", and "Technical English: Reading and Listening I-V." Those who have gained TOEIC score of 700 or more may skip "Technical English: Reading and Listening I-V."
- 10 According to "Academic Regulations for Undergraduate Studies", students must pass the department's professional competency threshold. For details, please refer to "Graduation Requirements for Professional Ability and Guidelines for Students in Department of Mechanical Engineering."