明志科技大學四技部113學年度入學 機械工程系光機電組 課程總表

113/10/8 校課程委員會審議通過
113/5/30 院課程委員會審議通過
113/5/21 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)	0.5	2	0.5	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																	
			藝文涵養與社會參與(Art Literacy and Social Participation)			2	2															
			生活與職場英文(一)(二)(English for Life and Business)	3	3	3	3															
			英語聽講(一)(二)(Aural-Oral English)					1	2	1	2											
			英文實務(一)~(二)(Practical English)													1	2	1	2			
			~~歷史思維與多元文化領域(Historical Thinking and Multicultural Studies)~~					2	2													
			合　計	7.5	10	6.5	9	4	6	2	4	0	0	0	0	1	2	1	2			22
		（核心2學分）	大學之道(The Goal of University Education)	1	2																	
			設計思考(Design Thinking)			1	1															
			~~勞勞教育(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			
		（共同17學分）	~~工讀自學英文(Self-Study English During Vocational Practice)~~											~~2~~								
			實習前職場素養訓練(Professionalism Prior to Curricular Practical Training)									1	1									
			工讀實務實習(一)~(四)(Curricular Practical Training I ~ IV)											16								
			合　計	0	0	0	0	0	0	0	0	1	1	18	0	0	0	0	0			
	專業（53學分）	院必修（13學分）	實習前技術訓練(Hands-on Courses Prior to Curricular Practical Training)									1	2									
			普通物理(一)(General Physics I)	3	3																	
			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	0	1	2	0	0	0	0	0	0			13
		系必修40學分	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											
			機構學(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)													1	3	1	3			
			機械元件設計(一)(Design of Machine Elements I)													3	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
選修	共同至少8學分	通識選修	一、開課清冊請參考「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。																			
	院專業選修	（院開設6學分）	~~跨領域頂石專題(一)(Interdisciplinary capstone course(I))~~							~~1~~	~~3~~											~~跨領域專題~~
			~~跨領域頂石專題(二)(Interdisciplinary capstone course(II))~~									~~1~~	~~3~~									~~跨領域專題~~
			~~跨領域頂石專題(三)(Interdisciplinary capstone course(III))~~													~~1~~	~~3~~					~~跨領域專題~~
			~~跨領域頂石專題(四)(Interdisciplinary capstone course(IV))~~															~~1~~	~~3~~			~~跨領域專題~~
			科技英文閱讀與聽力訓練(一)(Technical English: Reading and Listening I)	0	1																	榮譽學分學程課程
			科技英文閱讀與聽力訓練(二)(Technical English: Reading and Listening II)			0	1															榮譽學分學程課程
			科技英文閱讀與聽力訓練(三)(Technical English: Reading and Listening III)					0	1													榮譽學分學程課程
			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
			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
			科技英文簡報與表達(Scientific Presentation in English)													2	2					榮譽學分學程課程
			特色專題(一)(Senior Capstone Project(I))													2	4					榮譽學分學程課程
			特色專題(二)(Senior Capstone Project(II))															2	4			榮譽學分學程課程
			合　計	0	1	0	1	0	1	1	4	1	4	0	0	5	9	3	7			10
	專業（應修畢至少46學分）	系專業選修（開設103學分）	電機學與實驗(Electric Machinery with Laboratory)			3	4															**模組A**
			電子學與實驗(Electronics with Laboratory)					3	4													**模組A**
			單晶片原理與應用(Single Chip Principle and Applications)							3	3											**模組A**
			光電材料(Electrical and Optical Materials)									3	3									**模組A**
			機電整合與實驗(Mechatronics with Laboratory)									3	3									**模組A**
			生醫光電概論(Introduction to Biophotonics)											3	3							**模組A、遠距課程**
			基本感測實務(Sensor Practice)													3	3					**模組A**
			微系統製程與實驗(Micro System Process and Laboratory)															3	3	15		**模組A**
			機械加工實務(Practical Training of Machining)	3	3																	**模組B**
			人工智慧概論(Introduction to Artificial Intelligence)			2	2															**模組B**
			Python程式語言與應用(Computer Programming and Applications)					3	3													**模組B**
			~~人工智慧物聯網概論(Introduction to Artificial Intelligence & Internet of Things)~~					~~3~~	~~3~~													**~~模組B、全英EMI課程~~**
			MATLAB軟體應用(Applications of MATLAB)							3	3											**模組B**
			自動控制(二)(Automatic Control II)									3	3									**模組B**
			電動機控制(Electrical Motor Control)													3	3					**模組B**
			機構設計(Mechanism Design)													3	3					**模組B**
			自動化光學檢測(Automated Optical Inspection)															3	3			**模組B**
			無人載具技術與應用(Technology and Applications of Unmanned Vehicle)															3	3			**模組B**
			進階電腦輔助機械製圖(Advanced Computer-Aided Mechanical Drawing)			3	3															**模組C**
			電腦輔助設計(一)(Computer-Aided Design I)					3	3													**模組C**
			精密量測與實習(Precision Measurement and Practice)					3	3													**模組C**
			3D 列印實務與應用(3D Printing Practice and Application)					3	3													**模組C**
			模具設計與製造(Design and Manufacture of Mould)									3	3									**模組C**
			製造學(Manufacturing Principles)									3	3									**模組C**
			半導體製程(Semiconductor Process)											3	3							**模組C、遠距課程**
			電腦輔助工程分析(Computer-Aided Engineering)													3	3					**模組C**
			塑膠模具設計與模流分析(Design and Flow Analysis of Plastic Mould)															3	3			**模組C**
			智慧製造感測聯網與數據分析(Sensor Network and Data Analysis in Smart Manufacturing)															3	3			**模組C**
			專題初探(Special Project Exploring)			2	2															**模組D**
			專題實務(Special Project Practice)					1	1													**模組D**
			工程數學(二)(Engineering Mathematics II)							3	3											**模組D**
			專題設計(一)(Special Project Design I)							1	1											**模組D**
			專題設計(二)(Special Project Design II)									1	1									**模組D**
			氣壓學與實習(Pneumatic System and Practice)													3	3					**模組D**
			新能源工程導論(Introduction to New Energy Engineering)													3	3					**模組D**
			熱傳學(Heat Transfer)													3	3					**模組D**
			化工產業之機電實務講座(Lectures on electro-mechanical engineering practice for chemical industry)													3	3					**模組D、化工系開設**
			光電子學與實驗(Optoelectronics with Laboratory)															3	3			**模組D**
			合　計	3	3	10	11	18	19	10	10	16	16	6	6	24	24	18	18			105

1 畢業最少應修 148 學分。
2 三上必修「實習前職場素養訓練」，三下必修「工讀實務實(一)~(四)」及「工讀自學英文」共19 學分。
3 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。
4 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。
5 必修體育(三)、體育(四)，於大二至大四，採興趣選項教學。
6 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。~~
7 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；已修畢之第二專長學分學程/跨領域學分學程外系學分，採計為系專業選修學分。
8 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，採計為專業選修學分。
9 修習本系榮譽學程學分學生，「特色專題(一)(二)」、「科技英文簡報與表達~~(一)(二)~~」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者(700分)可免修「科技英文閱讀與聽力訓練(一)~(五)」。
10 依大學部學則規定畢業應通過系專業能力畢業門檻，詳細請見「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 "Curricular Practical Training I~IV" and "Self-study English During Vocational Practice" in the second semester, totaling 19 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 thidr 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 must complete either an interdisciplinary program or a second-specialization program as one of the graduation requirements.
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-Mechatronics Core Course Module (Module A), Unmanned Vehicle Interdisciplinary Credit Program (Module B), Precision Manufacturing Courses Module (Module C), and Opto-Mechatronics Elective Course Module (Module D). Among these, at least 6 courses must be taken from the Opto-Mechatronics Core Course 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."