

明志科技大學四技部111學年度入學 機械工程系精密機械組 課程總表

114/8/12 校課程委員會審議通過
114/8/1 院課程委員會審議通過
114/7/28 系課程委員會審議通過

11/7/28 系課程委員會審議通過																				
共 同 (41 學 分)	科 目 名 稱	一上		下		三上		三下		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			
必 修	全民國防教育軍事訓練(一)(二)(Physical Education)	0	2	0	2															
	體育(一)(四)(Physical Education)	1	2	1	2	1	2	1	2											
	經典教育與社會實踐(Classical Education and Social Practice)	1	1																	
	文學賞賞與情感意象(Accentuation of Literature and Emotional Expression)	2	2																	
	藝文通識與社會參與(Art Literacy and Social Participation)			2	2															
	生活英語聽(一)(二)(Aural-Oral English)	3	3	3	3			1	2	1	2									
	英語聽(一)(四)(Practical English)					0	2	0	2			0	2	0	2					
	英文文務(一)(四)(Practical English)					3	3													
	社會哲學領域(Social Philosophy)																			
	合 計	7	10	6	9	5	9	2	6	0	0	0	0	0	2	0	2	20		
必 修	大學之道(The Goal of University Education)	1	2																	
	核心2 設計思考(Design Thinking)			1	1															
	課業 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		
	校へ 工讀自學英文(Self-Study English During Vocational Practice)														2					
	共19 實習與職場素養訓練(Professionalism Prior to Curricular Practical Training)											1	1							
	同學 課程(一)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	0		
	實習前技術訓練(Hands-on Courses Prior to Curricular Practical Training)											1	2							
	院系13 普通物理(一)(二)(General Physics I)	3	3																	
專 業 (53 學 分)	專業必修 微積分(一)(二)(Calculus I & II)	3	3	3	3														13	
	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	0		
	普通物理與實驗(General Physics with Laboratory)			3	4															
	普通化學(General Chemistry)			2	2															
	計算機程式與實驗(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															
	工程熱力學(Engineering Thermodynamics I)			3	3														全英語授課English-taught course	
專 業 (40 學 分)	專業必修 材料科學與實驗(Mechanics of Materials with Laboratory)			3	4															
	機械構造(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)			3	3							1	3	1	3					
	機械元件設計(一)(Design of Machine Elements I)			3	3							3	3							
	工程倫理與專業實務講座(Lectures in Engineering Ethics and Practice)			3	3							1	2							
	合 計	6	6	7	8	9	10	6	7	6	6	0	0	5	8	1	3	40		
	共至 同少 8 應學 修 事	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、社會科學、自然科學」 任選四類型各修畢2學分且合計至少8學分。																		
院 專 業 選 修	跨領域頂石專題(一)(Interdisciplinary capstone course I)									1	3									
	跨領域頂石專題(二)(Interdisciplinary capstone course II)								1	3										
	跨領域頂石專題(三)(Interdisciplinary capstone course III)								1	3										
	跨領域頂石專題(四)(Interdisciplinary capstone course IV)								1	3										
	院系開設專題(一)(Technical English: Reading and Listening I)	0	1						0	1										
	院系開設專題(二)(Technical English: Reading and Listening II)			0	1				0	1										
	院系開設專題(三)(Technical English: Reading and Listening III)					0	1			0	1									
	院系開設專題(四)(Technical English: Reading and Listening IV)								0	1										
	科學文稿與實驗力訓練(一)(Scientific Presentation in English)											2	2							
	特色專題(一)(Senior Capstone Project I)											2	4							
	特色專題(二)(Senior Capstone Project II)											2	4							
	合 計	0	1	0	1	0	1	1	1	4	1	4	0	0	5	9	3	7	10	
選 修 專 業 選 修 至 少 46 學 分	數控工具與實務(Practice in CNC Machine)			3	3															
	機械構造與實驗(Electric Machinery with Laboratory)			3	4															
	電腦輔助設計(一)(Computer-Aided Design I)			3	3															
	電腦輔助設計(二)(Computer-Aided Design II)			3	3															
	模具設計與製造(Design and Manufacture of Mould)			3	3															
	製造原理(Manufacturing Principles)			3	3															
	精密切削(Precision Machining)			3	3															
	熱流工程(Thermal-fluid Engineering Practice)			3	3															
	人工智能概論(Introduction to Artificial Intelligence)	2	2																	
	人機物聯網概論(Introduction to Artificial Intelligence & Internet of Things)			2	2															
專 業 (選 修 至 少 46 學 分)	Python程式語言與應用(Programming and Application of Python Language)			3	3															
	3D列印技術與應用(3D Printing Practice and Application)			3	3															
	切削學(Principle of Metal Cutting)			3	3															
	MATLAB軟體應用(Applications of MATLAB)			3	3															
	機電整合與實驗(Mechatronics with Laboratory)			3	3															
	半導體製程(Semiconductor Process)			3	3															
	智慧快模工具(設計製造)Design and Manufacturing of Intelligent Rapid Tooling)			3	3															
	塑膠設計與製造(Design and Flow Analysis of Plastic Mould)			3	3															
	表面處理技術(Surface Treatment Technology)			3	3															
	智能製造與測量(Sensor Network and Data Analysis in Smart Manufacturing)			3	3															
開 設 學 分	機械工程概論(Introduction to Mechanical Engineering)	2	2																	
	機械工具實務(Practical Training of Machining)	3	3																	
	專題研究(Special Project Exploring)			2	2															
	專題研究(Special Project Practice)			2	2															
	工程熱力學(Engineering Thermodynamics II)			3	3															
	中等學力材料(Intermediate Mechanics of Materials)			3	3															
	工程數學(Engineering Mathematics II)			3	3															
	電子學(Electronics)			2	2															
	專題設計(一)(Special Project Design I)			1	1															
	專題設計(二)(Special Project Design II)			1	1															
選 修 專 業 選 修 至 少 46 學 分	熱傳導(Heat Transfer)											3	3							
	振動分析與實驗(Vibration Analysis with Laboratory)											3	3							
	機構設計(Mechanism Design)											3	3							
	電腦輔助工程分析(Computer-Aided Engineering)											3	3							
	精密量測與實驗(Design of Machine Elements II)	3	3									3	3							
	精密量測與實驗(Design of Measurement and Practice)			3	3							3	3							
	機械材料(Mechanical Engineering Materials)			3	3							3	3							
	電腦輔助工程分析(Computer-Aided Engineering)			3	3							3	3							
	微機控制與實驗(Microcontroller and Experiment)			3	3							3	3							
	化工系開課Offered Courses			3	3							3	3							

合計

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。

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 球生應修讀四門體育課，即修讀體育(三)或體育(四)的第一學期課程，並得兩堂

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。
7 若選修專業選修「跨領域專題課程」，可申請替代專業必修之「專題製作」課程。
8 最低畢業學分認定：修畢第一專長學分學程/跨領域學分學程者，最低畢業學分結構組數為共同必修41學分，通過修畢至少8
9 學分之五類別任三科。

⁷ 例假年學生才認定。修華第二專長學分計額/認取學分計額性質：最低年學生才給點調整為共同必修41學分，通識選修至少8學分(五類型，任選四類各2學分)，院專系必修13學分，系專業必修40學分，專業選修任選至少40學分，合計148學分；已修畢之第二專長學分計額/認取學分計額系外系學分，採計為系專業選修學分。

8 系程部分為精密機械核心課程模組(模組A)、智慧製造跨領域學分學程(模組B)、機械設計課程模組(模組C)、3D列印課程模組(模組D)。其中精密機械核心課程模組(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

。首先以「職業取向評量」評量學生的職業取向，並依評量結果，進一步精選個別化職業取向的專業修習內容，以供學生選修。

9 修習本系榮譽學程分學生：「特色專題(一)(二)」、「科技英文簡報與表達」、「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, "Curricular Practical Training I-IV" and "Self-Study English During Vocational Practice" in the second semester, totaling 19 credits.

2 Students must take "Professional Prior to Practical Training" in the first semester of the third year, "Curricular Practical Training I-IV" and "Self-Study English During Vocational Practice" in the second semester, totaling 19 credits.
2 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

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).

4 During the first semester of the 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. If taking the "Interdisciplinary capstone course" from college's elective courses, students can apply to replace the "Special Projects"

- Students can complete either the 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 Departmental 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: Precision Machinery Core Courses Module (Module A), Smart Manufacturing Interdisciplinary Credit Program (Module B), Mechanical Design Courses Module (Module C), and 3D Printing Courses 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 schools.

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.

o Honor program students who enroll in 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

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 skin "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

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."