

明志科技大學四技部112學年度入學 機械工程系車輛組 課程總表

114/3/4 校課程委員會審議通過
114/1/3 院課程委員會審議通過
113/1/27 系課程委員會審議通過

科 目 名 稱	一上 學分	一下 學分	二上 學分	二下 學分	三上 學分	三下 學分	四上 學分	四下 學分	每班人數 上限	每班人數 下限	備註
基礎 課程 學分	全民國防教育暨軍事訓練(一)(二) 體育(一)(四)(Physical Education)	0 2	0 2	1 2	1 2	1 2					
	永續發展與社會實踐(Sustainable Development and Social Practice)	1 2	1 2	1 2	1 2	1 2					
	文學鑑賞與情感表達(Accomplishment of Literature and Emotional Expression)	1 1									
	藝術鑑賞與社會參與(Art Literacy and Social Participation)	2 2									
	生活與職場英文(一)(二)(English for Life and Business)	2 2									
	英語聽讀(一)(二)(Aural-Oral English)	3 3	3 3	3 3							
	英文實務(一)(二)(Practical English)				1 2	1 2			1 2	1 2	「商政與法治」、「歷史思辨」課程
	社會哲學領域(Social Philosophy)				3 3	3 3					
	合計	7 10	6 9	5 7	2 4	0 0	0 0	0 0	1 2	1 2	22
	大學之道(The Goal of University Education)	1 2									
核心 心2 課程 學分	設計思考(Design Thinking)			1 1							
	勞動教育(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	
	實習前職場素養訓練(Professionalism Prior to Curricular Practical Training)					1 1					
必修 課分 總計	工讀實務實習(一)(四)(Curricular Practical Training I - IV)						16				
	合計	0 0	0 0	0 0	0 0	0 0	1 1	16	0 0	0 0	
	實習前職場素養訓練(Hands-on Courses Prior to Curricular Practical Training)						1 2				
專業 學分	專13 普通物理(一)(General Physics I)	3 3									
	微積分(一)(二)(Calculus I & II)	3 3	3 3	3 3							
	工程數學(一)(二)(Engineering Mathematics I)			3 3							
	合計	6 6	3 3	3 3	0 0	1 2	0 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									
	電腦輔助機械製圖(Computer-Aided Mechanical Drawing)	3 3									
	計算機程式與實習(Computer Programming and Practice)			3 3							
	靜力學(Statics)	2 2									
	動力學(Dynamics)			3 3							
專業 學分	工程熱力學(Engineering Thermodynamics I)				3 3						全英語授課English-taught course
	材料科學與工程實驗(Materials Science and Engineering Laboratory)	3 4									
	材料力學與實驗(Mechanics of Materials with Laboratory)	3 4									
	機構學(Mechanism of Machinery)			3 3							
	自動控制(一)(二)(Automatic Control I)			3 3							
40 學 分	流體力學(Fluid Mechanics)			3 3							
	專題製作(一)(二)(Special Project I, II)			1 3							
	機械元件設計(一)(二)(Design of Machine Elements I)			3 3							
	工程倫理與專業實務講課(Lectures in Engineering Ethics and Practice)			1 2							
共至 同少 ~8 應學 選修 分量	合計	5 5	8 9	11 11	6 6	6 6	6 6	0 0	5 8	1 3	40
	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」										
院專 業選 修	選修各四類型各修2學分且合計至少8學分。										
	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							
	院開 設 專 題 選 修	科技英文閱讀與聽力訓練(一)(Technical English: Reading and Listening I)	0 1								
	科技英文閱讀與聽力訓練(二)(Technical English: Reading and Listening II)	0 1		0 1							
	科技英文閱讀與聽力訓練(三)(Technical English: Reading and Listening III)			0 1							
	科技英文閱讀與聽力訓練(四)(Technical English: Reading and Listening IV)			0 1							
	科11 技英 文專 題 選 修	科學演說與表達(Scientific Presentation in English)			1 1				▲	▲	
選修	科學演說與表達(Scientific Presentation in English)			2 2					▲	▲	
	科技英語演說與表達(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	1 1	1 1	4 2	4 0	0 0	8 12	6 10	17
	車輛工程概論(Introduction of Vehicle Engineering)	3 3									
	汽車實務(一)(Automobile Workshop I)		3 3								
	電機學與實驗(Electric Machinery with Laboratory)	3 4		3 3							
	汽車實務(二)(Automobile Workshop II)			3 3							
專業 應修 至 少 46 學 分	鐵製助動車(Automatic Vehicle)			3 3							
	內燃機(Internal Combustion Engine)			3 3							
	車輛性能與測驗(Vehicle Performances and Testings)			3 3							
	機械元件設計(一)(Design of Machine Elements I)			3 3							
	機械元件設計(二)(Design of Machine Elements II)			3 3							
	車道車輛技術(Bicycle Vehicle Systems)			3 4							
	人工智慧與物聯網(Introduction to Artificial Intelligence & Internet of Things)			3 4							
	車輛電子與車輛實驗(Vehicle Electronics with Laboratory)			3 4							
	電動車輛技術(Electric Vehicle Practices)			3 3							
	汽車感測元件與控制(Vehicle Sensors and Control Practices)			3 3							
專業 應修 至 少 46 學 分	車輛技術與整合實務(Practice of Vehicle Technology and Integration)			3 3							
	車輛動力學(Vehicle Dynamics)			3 3							
	電動車輛技術(Electric Vehicle Technology)			3 3							
	車輛系統與模型分析(Vehicle System Modelling and Analysis)			3 3							
	車輛元件設計與分析(Design and Analysis of Vehicle Components)			3 3							
	電動車輛實驗(Electric Vehicle Test Practice)			3 3							
	專題研究與評鑑(Special Project Exploration)	3 2									
	車輛專業英語(Professional English in Vehicle Engineering)			2 2							
	製造學(Manufacturing Principles)			3 3							
	3D列印實務與應用(3D Printing Practice and Application)			3 3							
專業 應修 至 少 46 學 分	專題實務(Special Project Practice)			1 1							
	車輛材料(Materials in Vehicle Application)			3 3							
	車等材料(II)(Intermediate Mechanics of Materials)			3 3							
	專題設計(一)(Special Project Design I)			1 1							
	專題設計(二)(Special Project Design II)			3 3							
	製造輔助設計(一)(Computer-Aided Design I)			3 3							
	製造輔助設計(二)(Computer-Aided Design II)			3 3							
	機械設計(Mechanism Design)	2 2									
	機械工程概論(Introduction to Mechanical Engineering)	3 3									
	機械加工技術(Practical Training of Machining)			3 3							
選修	精密量測與量程(Precision Measurement and Practice)			3 3							
	人工智慧概論(Introduction to Artificial Intelligence)			2 2							
	工程數學(一)(Engineering Mathematics I)			3 3							
	車輛底盤與實驗(Vehicle Chassis and Experiments)			3 4							
	電力電子學(Power Electronics)			3 3							
	工程熱力學(一)(Engineering Thermodynamics I)			3 3							
	熱傳學(Heat Transfer)			3 3							
	車輛系統與車輛管理(Vehicle Assembly Plant Management)			3 3							
	化工業用機械電動裝置(Lectures on electro-mechanical engineering practice for chemical industry)			3 3							
	無人載具技術與應用(Technology and Applications of Unmanned Vehicle)			3 3							
選修	熱流工程實務(Thermal-fluid Engineering Practice)			3 3							
	基礎機械問題與車輛修護(Scooter Maintenance Practices)			2 2							
	基礎機械問題與車輛修護(Car Maintenance Practices)			2 2							
	基礎機械問題與車輛修護(Car Maintenance Practices)			2 2							
	合計	8 8	16 17	14 14	16 18	27 27	0 0	27 27	17 17	17 17	125

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「工讀實務實質(一)(四)」,共 17 學分。

3 每學期選課人數以 27 分為「大一」、選課下限以 16 分為「大二」、四選課下限為 9 分為「大三」。

4 上三課程採用灑水方式(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(二)體育(四)。於大二至大四,採興趣選項教學。

6 學生應修滿一個跨領域課程或是第三學年專長學程,始得畢業。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。

最低畢業學分認定:修讀第二學年學分學程/跨領域學分學程: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),選修四類各2學分。院專業必修13學分,系專業必修40學分,專業選修還至少46學分,合計148學分。

7 計148學分:已畢業之第一、二學年專長學程/跨領域學分學程系外系分學系,採系為系專業選修學分。

系專業選修為車輛核心課程模組(模組A)、智慧動車輛跨領域學分學程(模組B)、車輛設計課程模組(模組C)、車輛選修課程模組(模組D)。其中車輛核心課程模組(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,採系為系專業選修。

8 之專業選修,最多6學分,採系為系專業選修。

9 經修習各科課程學生,「特色專題(一)(二)」、「科技英文簡報與表達(一)(四)」、「科技英文閱讀與聽力訓練(一)(五)」為必需,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 依大學部各系課程規定畢業學分最低需 148 學分。

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" 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 must complete either 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.

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, 2 credits each), 13 credits from college compulsory courses, 40 credits from department compulsory courses, and at least 46 credits from department elective courses.

7 making 148 credits in total. Credits obtained from the interdisciplinary or the second-specialization program will be counted as credits from department elective courses.

The department's elective courses are divided into the following modules: Precision Machinery Core Courses Module (Module A), Smart Manufacturing Interdisciplinary Credit Program Module (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 classes

8 within the Mechanical Engineering Department can be counted as professional elective credits.

Honor program students who enrol 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."

9 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."