2022/2023 UEA Bachelor's Degree Programme (Taught in Chinese)

Mechanical Engineering (Intelligent Manufacturing)

Xi'an Jiaotong University

** The information below is extracted from the existing curriculum, which is subject to change. Please refer to the curriculum used in the year of entry as final curriculum.*

1. Program Overview

University/School: School of Mechanical Engineering, Xi'an Jiaotong University (XJTU)
Major: Mechanical Engineering
Awarding Degree: Bachelor of Engineering
Duration: 4 Years
Credit requirement for graduation: For graduation, students should complete all modules in the curriculum with 145 credits, passing HSK5 with graduation certificate. Students, who have met the criteria as required by the university regulation on undergraduate student registration and degree awarding, will be awarded with degree certificate.

2. Teaching Outcomes

This program aims to develop international talent in engineering with a solid theoretical foundation in science and engineering and good mastery of specialist knowledge in mechanical design, manufacturing and automation. Graduates are expected to have the competency for undertaking works in product development, technological research and development, production and operation as well as management.

Teaching Methods:

Theoretical learning and practice will be combined in program delivery. In the first four semesters, students will receive general education to complete foundational modules in engineering, mathematics, English and computer science, as well as core modules in the Science and Engineering category. In Semesters 5, 6 and 7, students will learn modules and practices relating to mechanical engineering and intelligent manufacturing. Students will

complete graduation design (thesis) and pass the defense in Semester 8.

3. Curriculum

Core subject: Mechanical Engineering

Relevant subjects: Mechanics, Materials Science and Technology, Control Science and Engineering, Power Engineering and Engineering Thermophysics

Curriculum

Type	Code	Module Title (In Chinese)	Module Title (In English)	Credit	Hours	Compulsory /Optional	Semester
Public		汉语听说		4	64	Compulsory 18 credits	1-1，1-2
		汉语精读		12	192		1-1，1-2
		中国概况		2	32		1-2
		普通话语音		2	32	Compulsory 2 credits	2-2
		成语选讲		2	32		2-1
		中国文化概论		2	32		2-2
	PHED109050	体育-1	Sports-1	0.5	32	Compulsory 2 credits	1-1，2-1
	PHED109150	体育-2	Sports-2	0.5	32		1-2，2-2
	PHED109250	体育-3	Sports-3	0.5	32		1-1，2-1
	PHED109350	体育-4	Sports-4	0.5	32		1-2，2-2
Foundational General Modules				Optional: 2 credits Compulsory: 20 credits			
General Education - Subtotal				22 credits			
Maths and Founda-tional Science Modules	MATH294107	高等数学 I-1	Advanced Mathematics I-1	6.5	110	Compulsory 39 credits	1-1
	MATH294307	高等数学 I-2	Advanced Mathematics I-2	6.5	110		1-2
	MATH294207	线性代数与解析几何	Linear Algebra and Analytic Geometry	4	64		1-1
	COMP250605	大学计算机Ⅰ	Fundamentals of Computers I	3	56		1-1
	PHYS281509	大学物理 II-1	University Physics II-1	4	64		1-2
	PHYS281609	大学物理 II-2	University Physics II-2	4	64		2-1
	PHYS281809	大学物理实验 I-1	University physics experiments I-1	1	32		1-2
	PHYS281909	大学物理实验 I-2	University physics experiments I-2	1	32		2-1
	MATH200907	概率论与数理统计	Probability and Mathematical Statistics	3	48		2-2
	CHEM249809	大学化学	College Chemistry	3	48		2-1
	CHEM249909	大学化学实验	University Chemistry Experiment	1	32		2-1
	COMP250505	算法设计与问题求解	Algorithm design and problem solving	2	48		2-1
Maths and Foundational Science Modules/ Social Science Foundational Modules - Subtotal				Compulsory: 39 credits			
Subject Founda-tional Modules	MECH300206	理论力学	Theoretical Mechanics	4	72		2-1
	MECH300406	材料力学	Mechanics of Materials	4	72		2-2
	MECH301401	材料力学（英）	Mechanics of Materials	4	64		2-2
	ELEC325104	电工电子技术-1	Electrical	3	48		2-2

Type	Code	Module Title (In Chinese)	Module Title (In English)	Credit	Hours	Compulsory /Optional	Semester
			engineering-1			Compulsory: 27.5 credits (including one of the two Chinese & English-taught modules to be chosen for Mechanical Manufacturing and Automation, one of the two Chinese & English-taught modules to be chosen for Finite element method and numerical analysis in engineering)	
	ELEC325204	电工电子技术-2	Electrical engineering-2	3	48		3-1
	ELEC325404	电工电子技术实验-1	Experiments of Electronics and Electrotechnics-1	0.5	16		2-2
	ELEC325304	电工电子技术实验-2	Experiments of Electronics and Electrotechnics-2	0.5	16		3-1
	MACH390801	机械制图	Mechanical Drawing	3	48		1-1
	MACH402702	工程有限元与数值计算	Finite element method and numerical analysis in engineering	2	40		3-1
	MACH403101	工程有限元与数值计算（英）	Finite element method and numerical analysis in engineering	2	40		3-1
	ENPO330103	热工基础	Fundamental of Thermo-technology	2.5	40		2-2
	ENPO330203	流体力学基础	Elementary Fluid Mechanics	2	36		3-1
	MATL300202	工程材料基础	Fundamentals of Engineering Materials	3	52		3-1
		人工智能基础	Artificial intelligence foundation	2	36	Compulsory	3-1
Subject Foundational Modules - Subtotal				Compulsory: 29.5 credits			
Subject Core Modules	MACH000101	机械工程导论	Introduction for Mechanical Engineering	1	16	Compulsory: 22.5 credits (including one of the two Chinese & English-taught modules to be chosen for Mechanical Manufacturing and Automation)	2-1
	MACH400201	机械设计基础	Fundamentals of Mechanical Design	4	72		2-2
	MACH400301	机械设计基础课程设计	Course Project of Mechanical Design	1	32		3-1
	MACH400501	机械制造技术基础（含机械精度设计基础）	Fundamentals of Mechanical Manufacturing Technology	3	56		3-2
	MATL402801	材料成形技术基础	Fundamentals of Material Forming Technology	2	32		3-2
	MACH400801	机械控制工程基础	Fundamentals of Mechanical Control System Engineering	3	56		3-1
	MACH402901	机械工程测试技术	Measurement Technology in Mechanical Engineering	2.5	48		3-2
	MACH403001	机械工程测试技术（英）	Measurement Technology in Mechanical Engineering	2.5	48		3-2
	MACH402701	数控技术	Digital Control Technology	3	56		3-2
	MACH401101	工业社会学	Industrial Sociology	1.5	24		2-1

Type	Code	Module Title (In Chinese)	Module Title (In English)	Credit	Hours	Compulsory /Optional	Semester
	LITE401201	科技写作与表达	Technical Writing and Presentation	1.5	24		3-1
Subject Core Modules - Subtotal				Compulsory: 22.5 credits			
Subject Optional Modules	MACH500701	装备与制造系统	Manufacturing Equipment Systems	2	40	12 credits	3-2
	MACH501201	现代机器人技术	Robotics Technology	2	40		3-2
	MACH501301	企业与生产运作管理	Production and Operations Management	2	32		3-2
	MACH501501	现代设计理论与方法	Modern Design Theory and Methods	2	32		3-2
	MACH502801	增材制造技术（英）	Additive Manufacturing Technology	2	40		3-2
	MACH502501	制造执行系统技术	Manufacturing Executive System Technology	2	40		3-2
		智能产品规划与设计	Intelligent product planning and design	2	48		4-1
		智能制造信息系统	Intelligent manufacturing information system	2	48		4-1
		自动化系统集成技术	Automation system integration technology	2	48		4-1
		大数据与科学计算	Big data and scientific computing	2	48		4-1
Subject Optional Modules - Subtotal				Optional: 12 credits			
Practice	MPRA200352	金工实习 III-1	Metal Technology Practice III-1	1	64	18 credits	2-1
	MPRA200252	金工实习 III-2	Metal Technology Practice III-2	1	64		2-2
	MCRA300152	测控实习	Measurement and Control Practice	1	32		3-1
	MACA300152	现代加工	Modern processing	1	0		4-1
	PRAC400201	专业实习 I	Professional Practice I	1	40		2-3
	PRAC400101	专业实习 II	Professional Practice II	3	120		3-3
	GRDE900100	毕业设计（论文）	Graduation project （Thesis）	10	640		4-2
	ITDE500301	制造工艺规划与FMS	Process Planning for Manufacturing and FMS	2	56	CDIO: 2 credits	4-1
Practice - Subtotal				20 credits			
Total				145 credits (Compulsory: 133 credits; Optional: 12 credits)			