浙江理工大学2013级机械电子工程专业培养方案

一、专业名称：机械电子工程　　**专业代码：**080204

二、培养目标

本专业培养具有扎实的机械工程和电子工程基础知识，掌握机电一体化集成技术，能从事现代机电系统研究开发、集成、维护、管理，具有创新精神和能力的复合型工程技术人才。

三、培养规格及基本要求

毕业生应具备的知识、能力与素质结构:

1. 知识结构

（1）具有较扎实的数学、物理等自然科学基础，较好的人文社会科学基础和外语基础；

（2）系统地掌握本专业科学与工程领域的宽厚理论基础知识，主要包括工程制图、力学、机械设计基础、电子技术、控制技术基础等知识；

（3）具有机电系统集成技术的知识与技能，包括机电控制工程、机电系统设计、机器人技术、嵌入式技术等方面的知识与技能，了解本专业学科前沿和发展趋势。

2. 能力结构

（1）具备机电一体化系统设计能力；

（2）能够通过不断的自学来提高专业技术水平；

（3）具有分析问题和解决问题的基本能力及开拓创新的精神；

（4）具有良好的算机应用能力和英语读写能力，能够熟练地查阅文献、资料和科技情报。

3. 素质结构

（1）品格素质：具有较高的政治素质、思想素质与道德素质。

（2）文化素质：具有基本的历史、哲学、文学、艺术等知识和修养。

（3）身心素质：具有健康的体魄和心理。

（4）工程素质：掌握扎实的工程理论知识，具有较好的团队合作精神。

四、主干学科：机械工程、电子工程

五、核心课程

毛泽东思想和中国特色社会主义理论体系概论、英语、高等数学、电路原理基础、理论力学、机械原理、机电控制工程、机电传动与控制、单片微机原理及应用、机电系统设计

六、特色课程

研究型课程：机电系统实践与实验

双语教学课程：科学与工程计算语言、三维数字化建模、可编程序控制器技术

七、学习年限：3-6年　　**最低毕业学分：**173.5　　**授予学位：**工学学士

课内总学时：2325　　独立实践教学：34周+96学时

八、培养方案的学分分配比例

类 别	必修学分	选修学分	合计	比例
通 识 课 程	59＋5	14	78	45.0%
学科基础课程	42.5＋13	6	61.5	35.4%
专 业 课 程	7+10	14	31	17.9%
第 二 课 堂	/	3	3	1.7%
合 计	136.5	37	173.5	100.0%
比 例	78.7%	21.3%	**实践教学**	57.1 学分
			比 例	32.9%

注：各课程类别中均包含实践教学。

九、专业特色

以培养能从事现代机电系统研发的复合型工程技术人才为目标，以纺织装备为行业背景，根据浙江省纺织装备对机电一体化人才的需求，在专业课程和实践课程设置中强调纺织装备和自动化装备中的机电集成技术的学习。通过综合类理论知识的学习，及大量课内外实践环节培养提高综合知识应用能力。

十、说明

1.按类培养招生说明

机械类包括机械设计制造及其自动化、机械电子工程、过程装备与控制工程、材料成型及控制工程和工业工程 5 个专业。上述 5 个专业第 1 至第 3 学期教学计划一致。学生从第三学期末开始分流，选择具体专业，从第 4 学期起，按各专业教学计划进行。

2. 方向模块选修

本专业分嵌入式技术和机器人技术两个方向培养，学生必须选修至少一个方向课程 6 个学分；专业选修课中其它 6 个学分也可从另一方向课中选择。

3．通识课程选修说明

1) 工程技术类：推荐选择工程设计导论。

2) 人文艺术类：可根据个人兴趣在“通识课程一览”中任选。

3) 经济管理类：可根据个人兴趣在“通识课程一览”中任选。

4) 计算机信息类：第二学期一般起点的学生必须修读“VB 程序设计”或“C 程序设计”，高起点的学生则可修读“算法设计与分析”和其它应用开发课程或综合应用课程，以确保计算机基础课程总学分不少于 7 学分。

5) 语言类、综合类：可根据个人兴趣在“通识课程一览”中加选其他课程。

浙江理工大学 2013 级机械电子工程专业教学计划表

课程类别	课程性质	课程归属大类	模块	课程代码	课程名称	学分	总学时	讲课学时	实验(践)学时	建议修读学期	建议周学时	考核方式	备注
通识教育	必修	计算机信息类		02524	计算机基础概论	1.0	16	16		1	2	▲	注 1
		经济管理类		53695	创业基础	2.0	32	16	16	3	2		
		人文艺术类		26433	名著选读	1.0	16	8	8	2	2		
		思想政治理论类		74509	思想道德修养与法律基础	3.0	48	32	16	1	3		
				74510	中国近现代史纲要	2.0	32	28	4	2	2		
				74514	毛泽东思想和中国特色社会主义理论体系概论 1	3.0	48	32	16	3	3		
				74516	马克思主义基本原理概论	3.0	48	42	6	2	3		
		体育与健康类		03502	体育 1	1.0	32	4	28	1	2		
				03503	体育 2	1.0	32	4	28	2	2		
				03504	体育 3	1.0	32	4	28	3	2		
				04507	大学生心理健康教育	2.0	32	16	16	1	2		
				08501	军事理论	1.0	36	21	15	3	3		注 2
		自然科学类		63522	高等数学 A1	5.0	80	80		1	5	▲	
				63523	高等数学 A2	5.0	80	80		2	5	▲	
				63565	线性代数 B	2.0	32	32		3	2	▲	
				69528	普通物理 B	4.0	64	64		2	4	▲	
		语言类		73508	英语 2	4.0	64	64		1	4	▲	注 3
				73510	英语 4	4.0	64	64		2	4	▲	
				73014	口语与写作	2.0	32	32		3	2	▲	
	选修	工程技术类		14513	工程化学 B	2.0	32	32		3	2		
				31405	现代汽车概论	2.0	32	32		3	2		
				35586	工程设计导论	2.0	32	20	12	3	2		
		计算机信息类		02530	C 程序设计	4.0	64	32	32	2	4	★	见前注 1
				02531	VB 程序设计	4.0	64	32	32	2	4	▲	
				02536	算法设计与分析	4.0	64	32	32	2	4	★	
		经济管理类		35587	生产管理学基础	2.0	32	32		3	2		
学科基础教育	必修			29516	工程材料与热处理	2.5	40	37	3	3	2.5		
				31560	理论力学	4.0	64	64		3	4	▲	
				31626	机械学科导论	1.0	16	16		1	2		
				31627	机械制图 1	3.0	48	48		1	3	▲	
				31628	机械制图 2	2.5	40	40		2	2.5	▲	
				36665	电路原理基础	2.5	40	32	8	3	2.5	▲	
通识教育	必修	思想政治理论类		07501	形势与政策	2.0	128						注 4
		综合类		04503	职业发展与就业指导	2.0	38						注 5
	选修	语言类			英语通识选修课	2.0	32	32		2-7	2		
通识教育	必修	思想政治理论类		74515	毛泽东思想和中国特色社会主义理论体系概论 2	3.0	48	32	16	4	3		
		体育与健康类		03505	体育 4	1.0	32	4	28	4	2		
		自然科学类		63518	概率论 B	2.0	32	32		4	2	▲	
		语言类			英语拓展课	2.0	32	32		4	2	▲	

浙江理工大学 2013 级机械电子工程专业教学计划表

课程类别	课程性质	课程归属大类	模块	课程代码	课程名称	学分	总学时	讲课学时	实验（践）学时	建议修读学期	建议周学时	考核方式	备注
通识教育	选修	工程技术类		35574	制造业信息化导论	2.0	32	32		4	2		
				31408	新能源与核能发电技术	2.0	32	32		4	2		
				34401	物联网技术概论	2.0	32	32		4	2		
				36404	实用科技文体写作	2.0	32	32		4	2		
		经济管理类		35522	项目管理	2.0	32	32		6	2		
学科基础教育	必修			31545	机械设计	3.0	48	48		5	3	▲	
				31596	机械原理	3.0	48	48		4	3	▲	
				31598	互换性与技术测量	2.0	32	18	14	5	2		
				31808	材料力学 1	3.0	48	42	6	4	3	▲	
				36601	机电控制工程	3.0	48	39	9	5	3	▲	
				36604	数字电子电路	3.0	48	40	8	5	6		
				36605	工程测试技术	3.0	48	40	8	6	3	▲	
				36607	单片微机原理及应用	3.0	48	36	12	5	3	▲	
				36671	模拟电子电路	4.0	64	56	8	4	4	▲	
	选修			31551	机械系统仿真技术	2.0	32	24	8	6	2		
				31654	机械制造基础	2.0	32	30	2	4	2		
				31666	三维数字化建模(双语)	2.0	32	32		5	2		
				31809	材料力学 2	2.0	32	30	2	5	2		
				36502	工程流体力学	2.0	32	30	2	5	2		
				36651	科学与工程计算语言(双语)	2.0	32	16	16	4	2		
专业教育	必修			36606	机电传动与控制	3.0	48	33	15	6	3		
				36610	机器人学导论	2.0	32	28	4	5	2		
				36672	机电系统设计	2.0	32	32		6	2		
	选修		嵌入式技术	34592	嵌入式系统设计	3.0	48	36	12	6	3		
				36673	嵌入式接口技术	3.0	48	24	24	7	3		
			机器人技术	36617	实用运动控制技术	2.0	32	24	8	7	2		
				36674	工业机器人	2.0	32	16	16	5	2		
				36675	机器人离线编程系统	2.0	32	16	16	6	2		
				31825	机械优化设计	2.0	32	20	12	6	2		
				31581	有限元技术	2.0	32	16	16	6	2		注 6
				36514	液压(气压)传动与控制	2.0	32	28	4	7	2		
				36656	可编程序控制器技术(双语)	2.0	32	24	8	5	2		
				31722	机床数控技术	2.0	32	24	8	6	2		
				36676	工程项目管理基础	1.0	16	16		6	2		
				36677	新能源技术	1.0	16	16		6	2		
				36608	现代纺织设备及自动化	2.0	32	32		7	4		

1. 考核方式栏“▲”为集中笔试，“★”为集中机试。

2. 备注栏说明

注 1：通识教育（计算机信息类）课程实行分级教学，具体安排如下：

课程 层次	第一学期		第二学期
	必修		选修
一般层次	计算机基础概论（02524）	计算机应用技能 A（02510）	C 程序设计（02530）或 VB 程序设计（02531）
高层次	计算机基础概论（02524）	算法基础与应用（02525）	算法设计与分析（02536）

第二学期学生除修读表中所列课程外，有余力者还可修读其他应用开发课程和综合应用课程，具体课程详见“计算机基础课程开设一览表”。

注 2：“军事理论”课除 21 学时外还有 15 学时安排在军训期间进行。

注 3：高考英语成绩居我校入学英语成绩排名前 30%的新生，入学后可参加学校统一组织的英语水平测试，笔试及口试均达到优秀的学生，可免修“英语 2”和“英语 4”。

注 4：“形势与政策”课每学期 16 学时，每学期考核一次，该课程总成绩为各学年考核平均成绩。

注 5：“职业发展与就业指导”分散在第 1、4、5（6）、7 学期，分别为 12、4、16 和 6 学时。

注 6：本专业分嵌入式技术和机器人技术两个方向培养，学生必须选修至少一个方向课程 6 个学分；专业选修课中其它 6 个学分也可从另一方向课中选择。

浙江理工大学 2013 级机械电子工程专业
选修课最低修读学分一览表

课程类别	课程归属大类	最低修读学分	是否指定教学计划表内课程选修	备注
通识教育	自然科学类			
	工程技术类	2	否	
	人文艺术类	2	否	
	经济管理类	4	否	
	计算机信息类	4	否	
	语言类			
	综合类	2	否	
	体育与健康类			
	思想政治理论类			
学科基础教育		6	是	
专业教育		14	是	模块 6 学分

浙江理工大学 2013 级机械电子工程专业独立实践教学计划表

课程类别	课程性质	课程归属大类	模块	课程代码	课程名称	学分	总学时	讲课学时	实验(践)学时	建议修读学期	建议周学时	考核方式	备注
通识教育	必修	计算机信息类		02510	计算机应用技能 A	2.0	32		32	1	2		见前注 1
				02525	算法基础与应用	2.0	32		32	1	2		
		体育与健康类		03501	军训	1.0	2W			1	2W		
		自然科学类		69533	普通物理实验 B	1.0	32		32	2	2		
学科基础教育	必修			31633	金工实习	4.0	4W			2	4W		
				31728	机械认知实习	1.0	1W			3	1W		
				31822	制图测绘	1.0	1W			2	1W		
通识教育	必修			04501	社会实践	1.0	2W		2W	4	2W		
学科基础教育	必修			31669	机械基础实验 1	0.5	16		16	4	2		
				31670	机械基础实验 2	0.5	16		16	5	2		
				31817	机械设计课程设计 A	2.0	2W		2W	5	2W		
				31819	机械原理课程设计	2.0	2W		2W	4	2W		
				36661	单片机系统设计及应用实验	2.0	2W		2W	6	2W		
专业教育	必修			36678	毕业设计(论文)	8.0	16W		16W	8	16W		
				36802	机电系统实践与实验	2.0	2W		2W	6	2W		

浙江理工大学 2013 级机械电子工程专业
独立实践教学选修课最低修读学分一览表

课程类别	课程归属大类	最低修读学分	是否指定教学计划表内课程选修	备注
通识教育				
学科基础教育				
专业教育				
第二课堂教育		3		

注：“第二课堂教育”学生可通过参与科研项目，参加各类学科竞赛或科技文化艺术活动，发表学术论文或文学作品、设计作品，获得发明专利，参加课外自主实验、社会调查、社团活动，获得国家颁布的各类资格证书等多种途径获得第二课堂学分。

Zhejiang Sci-Tech University

2013 Program Outline of Mechatronic Engineering

Ⅰ Name of Major: Mechatronic Engineering

Code for Major：080204

Ⅱ Objectives

The curriculum is designed to educate students in mechanical engineering and electronic engineering theory and practice. Graduates with mechatronics knowledge and skill can innovatively engage in work of integrated system design, system maintenance, and production management and so on in the field of mechatronics engineering.

Ⅲ Basic Requirements on Knowledge and Abilities

Graduates are expected to have the following knowledge and abilities：

1. knowledge

(1) Solid foundation in natural sciences，humanities & arts, and English language；

(2) Solid foundation in strong core of engineering science courses common to all engineering curricula, especially the skills in Mechanical Drawing, Mechanics, Principles of Machinery, Electronic Circuits and Mechatronics Control Engineering;

(3) Skills of integrated mechatronics system Design, with the knowledge of mechatronic control engineering, mechanics system design, robot technology and embedded system. Understanding of Mechatronics development and trend;

2. Abilities

(1) Apply mechatronics engineering knowledge and skills to design and develop the mechatronics system;

(2) Be engaged in and continue to engage in lifelong self-directed learning to maintain and enhance their professional skills;

(3) Have problem analyzing and solving ability, and innovative thinking;

(4) Have skill of computer application and ability of English language for reading and writing;

(5) Be able to access and review literature and technological information.

3. Qualities

(1) Moral quality: high caliber of political, spiritual and moral quality;

(2) Cultural qualities: fundamental knowledge in history, philosophy, literature and art

(3) Physical and mental health: good physical and mental health

(4) Professional quality: Solid foundation of engineering theoretical knowledge, perform professionally in both individual and multi-disciplinary team-based project environment;

Ⅳ Main Subjects: Mechanical Engineering, Electronics Engineering

Ⅴ Core Courses

Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics, English, Advanced Mathematics, Electric Circuit, Computer Programming, Theoretical Mechanics, Theory of Machines and Mechanisms, Mechanical Design, Mechatronic Control Engineering, Principles and Applications of Micro-controller, Mechatronics System Design.

ⅥSpecial Courses

Research courses: Mechatronics System Design

Bilingual courses: Principles of Machinery, Science & Engineering Computing Language, 3D Digital Modeling

Ⅶ Length of Courses: 3-6 years **Degree Awarded:** Bachelor of Engineering

Minimum Credits Required for Graduation: 173.5

In-Class Hours: 2325 **Separate Practice Teaching:** 456

ⅧProportion of Course Credits

Course Classification	Compulsory Credits	Optional Credits	Total Credits	Percentage
General Courses	59＋5	14	78	45.0%
Basic Discipline-related Courses	42.5＋13	6	61.5	35.4%
Major-related Courses	7+10	14	31	17.9%
Extracurricular Activities	/	3	3	1.7%
Total Credits	136.5	37	173.5	100.0%
Percentage	78.7%	21.3%	Practice Teaching	56.6Credits
			Percentage	32.9%

Ⅸ Characteristics of the Major

The program aims to produce high-end practical integrated technical talents, which features backgrounds of textile machinery. According the requirement of the regional development of textile machinery, the program emphasizes on mechatronics technology application on the textile industry. Students are expected to make progress for engineering problem solving abilities through large quantities of practices both inside and outside the class.

Ⅹ Notes

1. Category-based training and student recruitment

Mechanical category includes mechanical design manufacture and automation, mechatronic

engineering, process equipment & control engineering, material forming & control engineering and industrial engineering. The above 5 majors share the same teaching plan for the first three semesters. At the end of the third semester, students choose specific majors and then follow the teaching plan of chosen majors from the beginning of the 4th semester.

2. Optional courses of the specialized module

The Program provides two specialisms after common foundation courses are accomplished: Embedded System Technology and Robot Technology. Students should select at least one module in Specialized Courses. Students can obtain another 6 credits of optional courses from another specialism.

3. Optional courses of general studies

1) Engineering and Technologies module：Introduction to Engineering Design is recommended.

2) Humanities and Arts module：Free choice from “General education course list”.

3) Economics and Management module：Free choice from “General education course list”. “Production management basics” and “project management” are recommended.

4) In Term 2, basic-level students are required to take “VB Program Design” or “C Program Design”, Advanced-level students can take “Algorithm Design And Analysis” and other Application Development courses or Comprehensive Application courses, to ensure that they can obtain no less than 7 credits of basic computing courses. See the table of ZSTU Basic Computing Courses for more information.

5) Languages and Comprehensive module：Free choice from “General education course list”.

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Zhejiang Sci-Tech University

Course Classification	C/O	Course Category	Course Module	Course Code	Course Title	Credits	Total Hours	Lecture Hours	Practice Hours	Terms	Weekly Hours	Evaluation Mode	Note
General Education	C	Computer Sciences		02524	Introduction to Computer Basics	1.0	16	16		1	2	▲	N1
		Economics and Management		53695	Foundation of Entrepreneur	2.0	32	16	16	3	2		
		Humanities and Arts		26433	Introduction to Classical Literary Works	1.0	16	8	8	2	2		
		Ideology and Politics		74509	Ideological and Ethical Cultivation and Foundations of Law	3.0	48	32	16	1	3		
				74510	The Outline of Modern Chinese History	2.0	32	28	4	2	2		
				74514	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics 1	3.0	48	32	16	3	3		
				74516	Introduction to the Basic Principles of Marxism	3.0	48	42	6	2	3		
		Physical and Healthy		03502	Physical Education 1	1.0	32	4	28	1	2		
				03503	Physical Education 2	1.0	32	4	28	2	2		
				03504	Physical Education 3	1.0	32	4	28	3	2		
				04507	Students' Mental Health Education	2.0	32	16	16	1	2		
				08501	Military Theory	1.0	36	21	15	3	3		N2
		Sciences		63522	Advanced Mathematics A1	5.0	80	80		1	5	▲	
				63523	Advanced Mathematics A2	5.0	80	80		2	5	▲	
				63565	Linear Algebra B	2.0	32	32		3	2	▲	
				69528	General Physics B	4.0	64	64		2	4	▲	
		Languages		73508	College English 2	4.0	64	64		1	4	▲	N3
				73510	College English 4	4.0	64	64		2	4	▲	
				73014	English Speaking and Writing	2.0	32	32		3	2	▲	
	O	Engineering		14513	Engineering Chemistry B	2.0	32	32		3	2		
				31405	Introduction to Modern Automotives	2.0	32	32		3	2		
				35586	Introduction to Engineering Design	2.0	32	20	12	3	2		
		Computer Sciences		02530	C Programming	4.0	64	32	32	2	4	★	Check N1 for detail
				02531	Visual Basic Programming	4.0	64	32	32	2	4	▲	
				02536	Algorithm Design and Analysis	4.0	64	32	32	2	4	★	
		Economics and Management		35587	Fundamentals of Production Management	2.0	32	32		3	2		

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Course Classification	C/O	Course Category	Course Module	Course Code	Course Title	Credits	Total Hours	Lecture Hours	Practice Hours	Terms	Weekly Hours	Evaluation Mode	Note
Basic Discipline-related Courses	C			29516	Engineering Materials and Heat Treatment	2.5	40	37	3	3	2.5		
				31560	Theoretical Mechanics	4.0	64	64		3	4	▲	
				31626	Introduction to Mechanics Discipline	1.0	16	16		1	2		
				31627	Mechanical Drawing 1	3.0	48	48		1	3	▲	
				31628	Mechanical Drawing 2	2.5	40	40		2	2.5	▲	
				36665	Fundamentals of Electric Circuit Principles	2.5	40	32	8	3	2.5	▲	
General Education	C	Ideology and Politics		07501	Current Issues and Policies	2.0	128						N4
		Comprehensive		04503	Career Development and Employment Guidance	2.0	38						N5
	O	Languages			Optional Course of General English	2.0	32	32		2-7	2		
General Education	C	Ideology and Politics		74515	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics 2	3.0	48	32	16	4	3		
		Physical and Healthy		03505	Physical Education 4	1.0	32	4	28	4	2		
		Sciences		63518	Probability Theory B	2.0	32	32		4	2	▲	
		Languages			College English for Advanced Learners	2.0	32	32		4	2	▲	
	O	Engineering		35574	Introduction to Informationization of Manufacturing Industry	2.0	32	32		4	2		
				31408	New Energy and Nuclear Power Generation Technology	2.0	32	32		4	2		
				34401	Introduction to Internet of Things Technologies	2.0	32	32		4	2		
				36404	Practical Science Writing	2.0	32	32		4	2		
		Economics and Management		35522	Project Management	2.0	32	32		6	2		
Basic Discipline-related Courses	C			31545	Machine Design	3.0	48	48		5	3	▲	
				31596	Principles of Machinery	3.0	48	48		4	3	▲	
				31598	Interchangeability and Technology Measurement	2.0	32	18	14	5	2		
				31808	Material Mechanics 1	3.0	48	42	6	4	3	▲	
				36601	Mechatronic Control Engineering	3.0	48	39	9	5	3	▲	
				36604	Digital Electronic Circuits	3.0	48	40	8	5	6		
				36605	Engineering Testing Technology	3.0	48	40	8	6	3	▲	

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Course Classification	C/O	Course Category	Course Module	Course Code	Course Title	Credits	Total Hours	Lecture Hours	Practice Hours	Terms	Weekly Hours	Evaluation Mode	Note
Basic Discipline-related Courses	C			36607	Single-Chip-Microcomputer Principles and Applications	3.0	48	36	12	5	3	▲	
				36671	Analog Electronic Circuits	4.0	64	56	8	4	4	▲	
	O			31551	Mechanical System Simulation Technology	2.0	32	24	8	6	2		
				31654	Basic Course for Mechanical Manufacturing	2.0	32	30	2	4	2		
				31666	3D Digital Modeling (Bilingual)	2.0	32	32		5	2		
				31809	Material Mechanics 2	2.0	32	30	2	5	2		
				36502	Engineering Fluid Mechanics	2.0	32	30	2	5	2		
				36651	Science & Engineering Computing Language (Bilingual)	2.0	32	16	16	4	2		
Major-related Courses	C			36606	Mechatronical Transmission and Control	3.0	48	33	15	6	3		
				36610	Introduction to Robotics	2.0	32	28	4	5	2		
				36672	Mechatronic System Design	2.0	32	32		6	2		
	O		EST	34592	Embedded System Design	3.0	48	36	12	6	3		N6
				36673	Interface Technology of Embedded System	3.0	48	24	24	7	3		
			RT	36617	Applied Motion Control Technologies	2.0	32	24	8	7	2		
				36674	Industry Robots	2.0	32	16	16	5	2		
				36675	Offline Programming System of Robots	2.0	32	16	16	6	2		
				31581	Finite Element Technology	2.0	32	16	16	6	2		
				31722	Technology of Numerical Control for Machine Tools	2.0	32	24	8	6	2		
				31825	Mechanical Optimization Design	2.0	32	20	12	6	2		
				36514	Hydraulic and Pneumatic Power Transmission and Control	2.0	32	28	4	7	2		

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Course Classification	C/O	Course Category	Course Module	Course Code	Course Title	Credits	Total Hours	Lecture Hours	Practice Hours	Terms	Weekly Hours	Evaluation Mode	Note
Major-related Courses	O			36656	Technology of Programmable Logic Device (Bilingual)	2.0	32	24	8	5	2		N6
				36676	The Base of Engineering Project Management	1.0	16	16		6	2		
				36677	New Energy Source Technology	1.0	16	16		6	2		
				36608	Modern Textile Equipments and Automation	2.0	32	32		7	4		

EST: Embedded System Technology ***RT: Robots Technology***

1. In evaluation mode column, "▲"means a collectively written examination is required, "★" means a collectively computer examination is required.
2. Remarks for Note Column

N1: Computer sciences courses for general studies will be taught in a level-based manner, the arrangement is as follows

Course / Level	1st Semester		2nd Semester
	Compulsory		Optional
Basic Level	Introduction to Computer Basics (02524)	Computer Skills Training A (02510)	Visual Basic Programming (02531) Or C Programming（02530）
Higher Level	Introduction to Computer Basics (02524)	Fundamentals of Algorithmics and Application (02525)	Algorithm Design and Analysis (02536)

In the 2nd semester, those students who have more capacities can select other application development courses and comprehensive application courses from the course list for computer basic courses except for the listed courses in this table.

N2: Apart from 21 periods in class, 15 periods of Military Theory will be given during military training.

N3: Those whose English scores in college entrance examination rank top 30% among all freshmen of our university are qualified for English level test organized by the university; those who score A grade in both written and oral tests can be exempted from College English 2 and College English 4.

N4. The course "Current Issues and Policies" will be lectured for 16 periods and evaluated once each semester, the score of this course will be the average of scores obtained in all academic years.

N5. 38 periods of Career Development and Employment Guidance are allocated in terms 1, 4, 5 and 7, with 12, 4, 16 and 6 periods in each term respectively.

N6: The Program provides two specialisms after common foundation courses are accomplished: Embedded System Technology and Robot Technology. Students should select at least one module in Specialized Courses. Students can obtain another 6 credits of optional course from another specialism.

C=Compulsory, O=Optional

The List for Required Minimum Credit of Optional Courses
2013 Mechatronic Engineering Zhejiang Sci-Tech University

Course Classification	Course Category	Required Minimum Credits	Whether Only Those Courses Listed in Teaching Schedule Can Be Selected	Note
General Education	Sciences			
	Engineering	2	N	
	Humanities and Arts	2	N	
	Economics and Management	4	N	
	Computer Sciences	4	N	
	Languages			
	Comprehensive	2	N	
	Physical and Healthy			
	Ideology and Politics			
Basic Discipline-related Courses		6	Y	
Major-related Courses		12	Y	Module 6 Credits

2013 Schedule of Separate Practical Teaching of Mechatronic Engineering Zhejiang Sci-Tech University

Course Classification	C/O	Course Category	Course Module	Course Code	Course Title	Credits	Total Hours	Lecture Hours	Practice Hours	Terms	Weekly Hours	Evaluation Mode	Note
General Education	C	Computer Sciences		02510	Computer Skills Training A	2.0	32		32	1	2		Check N1 for detail
				02525	Fundamentals of Algorithmics and Application	2.0	32		32	1	2		
		Physical and Healthy		03501	Military Training	1.0	2W			1	2W		
		Sciences		69533	Experiments on General Physics B	1.0	32		32	2	2		
Basic Discipline-related Courses	C			31633	Metal Working Practice	4.0	4W			2	4W		
				31728	Cognitive Practice for Machinery	1.0	1W			3	1W		
				31822	Mechanical Surveying and Mapping	1.0	1W			2	1W		
General Education	C			04501	Social Practice	1.0	2W			4	2W		
Basic Discipline-related Courses	C			31669	Experiments on Basic Machinery 1	0.5	16		16	4	2		
				31670	Experiments on Basic Machinery 2	0.5	16		16	5	2		
				31817	Curriculum Design for Mechanical Design A	2.0	2W			5	2W		
				31819	Curriculum Design for Mechinery Principles	2.0	2W			4	2W		
				36661	Single-Chip-Microcomputer System Design and Experiments	2.0	2W			6	2W		
Major-related Courses	C			36678	Graduation Design (Thesis)	8.0	16W			8	16W		
				36802	Practice and Experiments of Mechatronic System	2.0	2W			6	2W		

The List for Required Minimum Credit of Separate Practical Teaching 2013 Mechatronic Engineering Zhejiang Sci-Tech University

Course Classification	Course Category	Required Minimum Credits	Whether Only Those Courses Listed in Teaching Schedule Can Be Selected	Note
General Education				
Basic Discipline-related Courses				
Major-related Courses				
Extracurricular Activities		3		

Note : Students can obtain certain extracurricular credits through a variety of approaches such as participating in research programs, academic competitions, science and cultural arts activities, publishing papers, literary works or design works, obtaining patents, participating in independent experiments, social surveys, club activities, obtaining national certificates of various types, etc.