

2015 工业工程专业本科培养计划

Undergraduate Programs for the Major in Industrial Engineering (for Foreign Students)

一、业务培养目标

I Educational Objectives

工业工程专业培养具备现代工业工程和系统管理等方面的知识、素质和能力，能在企业从事生产、经营、服务等管理系统的规划、设计、评价和创新工作的高级专门人才。

The professional aim to foster senior specialized talents with the knowledge, quality, and capacity of modern industrial engineering and systems management, who are competent to engage in planning, design, evaluation and innovation work in production, operation, and service system of enterprise.

二、业务培养要求

II Educational Requirements

工业工程专业学生主要学习工业工程方面的基础理论和基本知识，受到应用工业工程的理论与方法分析和解决问题方面的基本训练，具有实际管理系统开发与设计的基本能力。

毕业生应获得以下几方面的知识和能力：

1. 掌握工业工程学科的基本理论、基本知识；
2. 掌握系统管理的分析方法和管技术；
3. 具有机械工程学科的基本技术和较强的计算机能力；
4. 熟悉经济建设和企业管的有关方法、规范和标准；
5. 了解现代工业工程的理论前沿，应用前景和发展动态；
6. 掌握文献检索、资料查询的基本方法，具有科学研究和实际工作的初步能力；
- 7 具有较强的分析和解决实际问题以及对生产系统规划、设计、评价、改善和创新的能力。

Students majoring in Industrial Engineering mainly study the basic theories and knowledge of industrial engineering, required to receive trainings of using the basic principle and method of industrial engineering, to analyze and solve problems, and having the basic abilities of practical management system development and design.

The graduates should obtain the following knowledge and abilities :

1. Mastering the basic theories and knowledge of industrial engineering discipline;
2. Mastering analytical methods and management techniques of system management;
3. Mastering the basic technique of mechanical engineering discipline and strong computer ability;
4. Being familiar with relevant methods, norms and standards of economic construction and enterprise management;
5. Understanding the theoretical frontiers, application prospects and development trends of modern industrial engineering;;
6. Mastering the basic methods of literature retrieval and information query, and having the preliminary scientific research and practical work ability;
7. With strong abilities of analyzing and solving practical problem, and competent to plan, design, evaluate, improve and innovate the production system.

三、主干学科

III Major Disciplines

主干学科：机械工程、工业工程、管理学

Major Disciplines: Mechanical Engineering, Industrial Engineering, Management Science

四、专业核心课程与专业特色课程

IV Core Courses and Characteristic Courses

专业核心课程：机械制造技术基础 A、机械设计基础、运筹学、生产计划与控制、统计质量控制、生产系统建模与仿真、物流工程学与设施规划、制造信息系统、人因工程

Core Courses: Fundamentals of Mechanical Manufacturing Technology A, Mechanical Designing, Operational Research, Operations Management, Statistical Quality Control, Production System Modeling and Simulation, Logistics Engineering & Facility Layout, Manufacturing Information System, Human Factors Engineering

专业特色课程：生产计划与控制、统计质量控制、生产系统建模与仿真、物流工程学与设施规划、制造信息系统、人因工程

Characteristic Courses: Operations Management, Statistical Quality Control, Production System Modeling and Simulation, Logistics Engineering & Facility Layout, Manufacturing Information System, Human Factors Engineering

五、计划学制与学位

V Length of School and Degree

修业年限：四年

授予学位：工学学士

Duration: 4 years

Degrees Conferred: Bachelor of Engineering Science

六、最低毕业学分规定

VI Graduation Credit Criteria

Course Classification Course Nature	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	集中性实践 Practice Courses	总学分 Total Credits
必修课 Required Courses	17	38	36	34.5	137
选修课 Elective Courses	0	2	9.5	0	

七、理论教学进程表

VII Theory Course Schedule

课程类别 Course Classification	课程性质 Course Nature	课程编号 Course Number	课程名称 Course Title	学分 Crs	学时分配 Including					建议修读学期 Suggested Term	先修课程 Prerequisite Course
					总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur		
通 识 课 程 Public Basic Courses	必修 Required Courses	4120017110	大学计算机基础 Foundation of Computer	2	32		12			1	
		4120025110	计算机程序设计基础 (C 语言) Fundamentals of Computer Program Design(C Language)	3	48		12			2	
			初级汉语会话 Basic Chinese Conversation	6	96					1	
			科技汉语会话 Scientific Chinese Conversation	3	48					2	
			中国概况 Introduction to China	3	48					3	
				小 计 Subtotal		17	272		24		
学 科 大 类 课 程 Basic Disciplinary Courses	必修 Required Courses	4080120110	专业导论 Introduction of Specialty	1	16					1	
		4080034110	工程材料与金属工艺学 Engineering Material & Metal	3	48	4				1	
		4080039110	工程图学 A1 Engineering Graphics A I	3.5	56					1	
		4080040110	工程图学 A2 Engineering Graphics A II	2.5	40					2 (后办学期)	
			高等数学 B1 Advanced Mathematics B I	5	80					1	
			高等数学 B2 Advanced Mathematics B II	5	80					2	
		4050229110	线性代数 Linear Algebra	2.5	40					3	
		4050058110	概率论与数理统计 B Probability and Mathematics Statistic B	3	48					3	
		4050021110	大学物理 A1 Physics A I	3.5	56					2	
		4050022110	大学物理 A2 Physics A II	3.5	56					3	
		4050222110	物理实验 A1 Physics Lab. A I	1	28	28				3	
		4050223110	物理实验 A2 Physics Lab. A II	1	28	28				4	
		4100009110	电工与电子技术基础 A1 Fundamentals of Electrical Engineering & Electric Technology A1	3.5	56	10				3	
				小 计 Subtotal		38	632	70			

课程类别 Course Classification	课程性质 Course Nature	课程编号 Course Number	课程名称 Course Title	学分 Crs	学时分配 Including					建议修读学期 Suggested Term	先修课程 Prerequisite Course
					总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur		
选修课 Elective Courses		4080070110	基础工业工程 Fundamental Industrial Engineering	2	32	8				2	
			小 计 Subtotal		2	32	8				
			修读说明：要求至少选修 2 学分。 NOTE: Minimum subtotal credit:2.								
专业必修课 Required Courses Specialized Courses		4050071110	工程力学 A Engineering Mechanics A	4	64	4				4	
		4080061110	机械设计基础 Mechanical Designing	3	48	6				4	
		4050254110	运筹学 Operational Research	2.5	40					4	
		4080064110	机械制造技术基础 A Fundamentals of Mechanical Manufacturing Technology A	3	48	6				5	
			机械工程 CAD/CAM Mechanical Engineering CAD/CAM	2	32					6(后半学期)	
		4080119110	制造信息系统 Manufacturing Information Systems	2.5	40					5	
		4080096110	生产计划与控制 A Operations Management A	3.5	56	3				5	
		4080036110	工程经济分析 A Engineering Economical Analysis A	3	48		6			5	
		4080094110	人因工程 Human Factor Engineering	3	48	6				6	
		4080095110	物流工程学与设施规划 Logistics Engineering & Facility Layout	3	48					6	
		4080097110	生产系统建模与仿真 Production System Modeling and	3.5	56		8			6	
		4080099110	统计质量控制 Statistical Quality Control	3	48		4			6	
			小 计 Subtotal		36	576	25	18			
		4080109110	先进制造技术 Advanced Manufacturing Technology	3	48					5	
		4080038110	工程数据库系统 Engineering Database System	2	32		8			5	
		4170043110	供应链管理 A Supply Chain Management A	2.5	40					6	
		4080046110	工业工程项目管理 Industrial Engineering Project Management	2	32					7	
		小 计 Subtotal		9.5	152		8				
		修读说明：要求至少选修 9.5 学分 NOTE: Minimum subtotal credits:9.5									

八、集中性实践教学进程表

VIII Practice Training Table

课程编号 Course Number	实践环节名称 Practice Courses Name	周数 Weeks	学分 Crs	建议修读学期 Suggested Term
4080150110	机械制造工程实训 B Machinery Manufacturing Engineering Practice B	4	4	3
4080157110	企业认识实习 Enterprise Practice	1.5	1.5	4
4080146110	机械设计基础课程设计 Course Practice of Machinery Design	2	2	4
4080158110	生产计划与控制课程设计 Course Practice of Production Plan and Control	2	2	5
4080162110	生产实习 Production Practice	3	3	6
4080165110	生产系统建模与仿真课程设计 Course Practice of Production System Modeling and Simulation	2	2	6
4080170110	制造信息系统课程设计 Course Practice of Manufacturing Information Systems	2	2	5
4080140110	工业工程综合课程设计 Synthesis Course Design of Industrial Engineering	3	3	7
4080135110	毕业设计 Graduation Design	15	15	8
小 计 Subtotal		34.5	34.5	