

物流工程专业（卓越工程师班）2017-2020 版本本科培养方案

Undergraduate Education Plan for Specialty in Logistics Engineering (2017-2020)

专业名称	物流工程	主干学科	物流管理与工程
Major	Logistics Engineering	Major Disciplines	Logistics Management and Engineering
计划学制	四年	授予学位	工学学士
Duration	4 Years	Degree Granted	Bachelor of Engineering
所属大类	物流管理与工程类	大类培养年限	1年
Disciplinary	Logistics Management and Engineering	Duration	1 year

最低毕业学分规定 Graduation Credit Criteria

课程类别 Course Classification 课程性质 Course Nature	通识教育课程 Public Basic Courses	专业教育课程 Major Courses	个性课程 Personalized Course	集中性实践教学环节 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	29	68.5	\	34.5	\	170
选修课 Elective Courses	9	19	0	\	10	

一、培养目标与毕业要求

I Educational Objectives & Requirement

(一) 培养目标

(I) Educational Objectives

本专业培养具有扎实的自然科学和人文社会科学基础知识，具有良好的道德品质和社会责任感，具有卓越的国际视野，具备扎实的物流工程专业基础理论知识与应用能力，具有卓越的工程实践能力和现代工程工具使用能力，具有团队合作精神和领导潜质的工程技术人才。

本专业培养的学生毕业五年左右应达到以下目标：

- (1) 具有良好的道德修养，并有服务社会的意愿和能力；
- (2) 掌握物流工程项目策划、预测、设计和实施、物流装备设计与运用以及物流系统运作与管理等基础知识卓越技能；
- (3) 能在企业、科研院所及政府部门从事物流系统工程设计、决策、管理、运营；
- (4) 具备物流工程领域从事技术、管理等工作的卓越能力。
- (5) 具有卓越的国际视野和对外交流的能力。

This specialty aims at training engineering technical talents, those have solid natural science and social science knowledge, have admirable moral character and the social responsibility, have an excellent international view, have solid foundation of theoretical knowledge and the application ability in the field of Logistics Engineering, have outstanding ability of engineering practice and modern engineering tool using ability, and have the team cooperation spirit and the Leadership potential.

The graduates after 5 years should achieve the following objectives:

1. To have good moral cultivation, and the willingness and ability to serve the community;
2. To grasp the project planning, forecast, design and implementation in logistics engineering, and the design and application in logistics equipment, and have excellent knowledge and skills in logistics system operation and management.
3. To be engaged in design, decision making, management and operation for logistics system in enterprises, research institutes and government departments.
4. To have outstanding capability in technology and management etc. for logistics engineering.
5. To have an excellent international view, and could expand the knowledge and ability of themselves.

(二) 毕业要求

(II) Educational Requirement

本专业学生主要学习物流管理与工程类、管理科学与工程类等相关学科的基本原理和基本知识及物流工程专业知识，接受物流工程项目策划与设计、物流装备设计与运用等方面的基本训练，掌握物流工程项目设计、物流装备设计与运用、物流系统运作与管理等方面的应用能力。

毕业生能获得以下几方面的知识和能力：

- (1) **工程知识**：能够将数学、自然科学、工程基础和专业知用于解决机械领域的复杂工程问题。
- (2) **问题分析**：能够应用数学、自然科学和工程科学的基本原理，识别、表达、并通过文献研究分析机械设计制造及其自动化专业的工程问题，以获得有效结论。
- (3) **设计/开发解决方案**：能够设计针对港口机械、流体传动及控制、模具等专业方向复杂工程问题的解决方案，设计满足特定需求的系统、单元（部件）或工艺流程，并能够在设计环节中体现创新意识，考虑社会、健康、安全、法律、文化以及环境等因素。
- (4) **研究**：能够基于科学原理并采用科学方法对机械工程领域的复杂问题进行研究，包括设计实验、分析与解释数据、并通过信息综合得到合理有效的结论。
- (5) **使用现代工具**：能够开发、选择与使用恰当的技术、资源、现代工程工具和信息技术工具，对复杂机械工程问题进行预测与模拟，并能够理解其局限性。
- (6) **工程与社会**：能够基于工程相关背景知识进行合理分析，评价专业工程实践和复杂工程问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任。
- (7) **环境和可持续发展**：能够理解和评价针对复杂工程问题的工程实践对环境、社会可持续发展的影响。
- (8) **职业规范**：具有人文社会科学素养、社会责任感，能够在工程实践中理解并遵守工程职业道德和规范，履行责任。
- (9) **个人和团队**：能够在多学科背景下的团队中承担个体、团队成员以及负责人的角色。
- (10) **沟通**：能够就复杂工程问题与业界同行及社会公众进行有效沟通和交流，包括撰写报告和设计文稿、陈述发言、清晰表达或回应指令。并具备一定的国际视野，能够在跨文化背景下进行沟通和交流。
- (11) **项目管理**：理解并掌握工程管理原理与经济决策方法，并能在多学科环境中应用。
- (12) **终身学习**：具有自主学习和终身学习的意识，有不断学习和适应发展的能力。

Through the study of the basic theory and methods of mechanics, automation and control technology, and the basic training of modern mechanical engineers, the undergraduates should have the theoretical knowledge and application ability in the three professional directions of Port Machinery, Fluid Power Transmission and Control, and Mold.

The graduates will achieve the following knowledge and abilities:

1. **Engineering knowledge**: The ability to apply mathematics, natural science, engineering fundamentals,

- and special knowledge to solve complex engineering problems in the field of machinery.
2. **Problem Analysis:** The ability to use the basic principles of mathematics, natural science and engineering science to identify, express, and analyze complex engineering problems of Mechanical Design, manufacturing and Automation from the work of literature research to acquire effective conclusions.
 3. **Design/development solutions:** The ability to determine design solutions to complex engineering problems in the professional directions of Port Machinery, Fluid Power Transmission and Control, and Mold, design systems, units (components) or processes which meet specific needs, and embody innovation in design, social, health, safety, Legal, cultural and environmental factors.
 4. **Research:** The ability to conduct research based on scientific principles and scientific methods to solve complex problems in mechanical engineering field, including the design of experiments, analysis and interpretation of data, and the work from information synthesis to reasonable and effective conclusions.
 5. **Use modern tools:** The ability to develop, select and use appropriate technologies, resources, modern engineering tools and information technology tools for complex mechanical engineering problems, including predictions and simulations of complex engineering problems, and to understand their limitations.
 6. **Engineering and Society:** The ability to analyze the impact of professional engineering practices and complex engineering solutions on social, health, safety, legal and cultural issues, and to understand the responsibilities that should be undertaken, based on the contextual knowledge of the project.
 7. **Environment and sustainable development:** The ability to understand and evaluate the impact of engineering practices on complex engineering issues on environmental and social sustainability.
 8. **Professional specifications:** Qualifications of the humanities and social sciences, social responsibility, understanding and adhering to engineering ethics and norms, fulfill their responsibilities in engineering practices.
 9. **Individuals and Teams:** The ability to assume the roles of individuals, team members and principals in a multidisciplinary team.
 10. **Communications:** The ability to communicate effectively with industry peers and the public on complex engineering issues, including writing reports and design presentations, presenting statements, articulating or responding to directives, obtaining a certain international perspective, capable of communication and exchange in cross-cultural context.
 11. **Project Management:** The ability to understand and master engineering management principles and economic decision-making methods in a multidisciplinary environment.
 12. **Lifelong learning:** The ability to maintain sustainable self-development with the sense of self-learning, lifelong learning and continuous learning.

附：培养目标实现矩阵

培养目标	目标 1	目标 2	目标 3	目标 4	目标 5
毕业要求					
毕业要求 1		√		√	
毕业要求 2		√		√	
毕业要求 3		√		√	
毕业要求 4		√		√	

培养目标	目标 1	目标 2	目标 3	目标 4	目标 5
毕业要求 5		√		√	
毕业要求 6	√		√		
毕业要求 7	√		√		
毕业要求 8	√				
毕业要求 9			√		
毕业要求 10			√		√
毕业要求 11		√	√		
毕业要求 12				√	√

二、专业核心课程与专业特色课程

II Core Courses and Characteristic Courses

(一) 专业核心课程:

(I) Core Courses:

现代物流学、运筹学、物流系统工程、供应链管理、物流设施规划与设计物流、自动化系统设计与应用、物流信息系统。

Modern Logistics, Operation Research, Logistic System Engineering, Supply Chain Management, Logistic Equipment Planning and Design, Design and Application of Logistic Automation System, Logistics Information System.

(二) 专业特色课程:

(II) Characteristic Courses

物联网技术、物流仓储与配送技术、港口平面布局及装卸工艺、起重运输机械、设备综合管理, 自动识别技术、机器人技术、交通运输工程概论、智能交通系统、物流决策基础、。

Technology of Internet of Things, Technology of Logistic Warehouse Storage and Distribution, Port Layout Planning and Handling Techniques Technology, Crane Machinery, Comprehensive Management of Facilities, Automatic Identification Technology, Robot Technology, Introduction to Transportation Engineering, Intelligent transportation system, Fundamentals of Logistics Decision Making.

附：毕业要求实现矩阵:

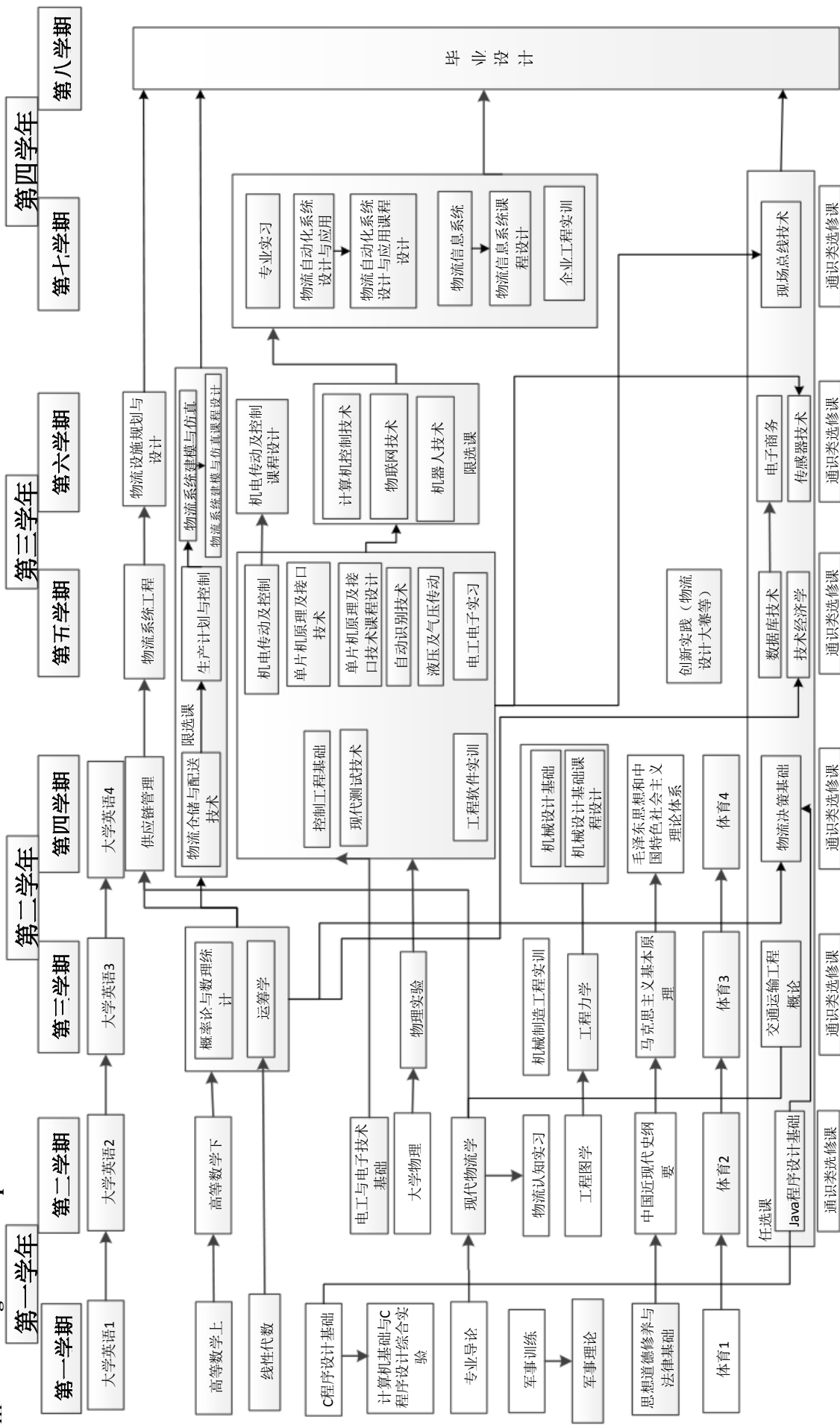
专业 核心 课程	专业 特色 课程	课程名称	物流工程专业（卓越工程师班）毕业要求												
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
		思想道德修养与法律基础						√	√	√					
		中国近现代史纲要						√		√					
		毛泽东思想和中国特色社会主义理论体系概论							√	√					
		马克思主义基本原理						√	√	√					
		军事理论							√		√				
		体育								√	√				
		大学英语										√			

专业 核心 课程	专业 特色 课程	课程名称	物流工程专业（卓越工程师班）毕业要求												
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
		C 程序设计基础	√				√								
		计算机基础与 C 程序设计综合实验	√				√								
		Java 程序设计基础									√				
		心理健康教育									√				
		专业导论											√		
		工程图学						√							
		高等数学									√				
		大学物理	√	√											
√		现代物流学	√	√											
		线性代数	√	√											
		概率论与数理统计	√	√			√								
		物理实验	√	√		√		√							
		电工与电子技术基础	√			√									
√		运筹学	√	√		√		√							
√		物流系统工程	√			√									
√		供应链管理	√	√											
		经济法	√	√		√									
	√	交通运输工程概论	√			√									
		财务管理	√			√	√								
	√	物流决策基础	√				√								
		生产计划与控制	√		√				√						√
		工程力学	√	√	√										
	√	控制工程基础	√	√		√	√								
		机械设计基础	√	√		√		√							
	√	液压及气压传动	√	√								√			√
√		单片机原理及接口技术			√			√			√				√

专业 核心 课程	专业 特色 课程	课程名称	物流工程专业（卓越工程师班）毕业要求												
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
		现代测试技术	√			√		√							
	√	物流仓储与配送技术	√			√		√	√					√	√
√		机电传动及控制	√	√	√				√						√
√		物流设施规划与设计	√		√										√
		物流系统建模与仿真	√		√				√						√
√		物流自动化系统设计与应用	√	√	√							√			√
√		物流信息系统	√		√				√						√
	√	物联网技术	√		√	√									√
	√	自动识别技术	√			√	√								√
		计算机控制技术	√	√		√									√
		数据库技术				√	√							√	√
		传感器原理及应用	√			√	√							√	
	√	机器人技术	√			√	√								
		电子商务	√		√				√						√
		连续运输机	√		√										√
		TCP/IP 和网络软件编程	√				√	√							√
		技术经济学	√				√								√
	√	设备综合管理			√	√	√								√
		集装箱装卸机械	√				√								√
	√	智能交通系统	√		√				√						√
		现场总线技术	√			√									√
		机械振动	√	√	√										√
		机械 CAD	√	√	√	√									√
		军事训练								√	√				√
		认识实习						√	√	√					√
		机械制造工程实训			√							√			√

专业 核心 课程	专业 特色 课程	课程名称	物流工程专业（卓越工程师班）毕业要求											
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		机械设计基础课程设计			√						√		√	√
		工程软件训练			√						√			√
		电工电子实习			√									√
		单片机原理及接口技术课程设计		√	√						√			√
		机电传动及控制课程设计		√	√									√
		物流系统建模与仿真课程设计		√	√									√
		物流信息系统课程设计		√	√									√
		物流自动化系统设计与应用课程设计		√	√									√
		创新实践	√	√	√	√	√	√	√	√	√	√	√	√
		专业实习						√	√	√				√
		毕业设计（论文）	√	√	√	√	√	√	√	√	√	√	√	√
		形势与政策								√				
		心理健康教育								√				

三、课程教学进程图 III Teaching Process Map



四、 理论教学建议进程表

IV Theory Course Schedule

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 Ope- ratio	实践 Prac- tice	课外 Extra- cur		
(一) 通识必修课程 General Education Required Courses									
4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1	
4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					2	
4220003111	毛泽东思想和中国特色社会主义理论体系概论 Introduction to Mao Zedong Thought and Socialism with Chinese Characteristics	4	96			32		3	
4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		4	
1060003131	军事理论 Military Theory	1	32				16	1	
4210001171	体育 1 Physical Education I	1	26					1	
4210002171	体育 2 Physical Education II	1	34					2	
4210003171	体育 3 Physical Education III	1	34					3	
4210004171	体育 4 Physical Education IV	1	34					4	
4030002181	大学英语 1 College English I	3	60				12	1	
4030003181	大学英语 2 College English II	2	44				12	2	大学英语 1
4030004181	大学英语 3 College English III	2	44				12	3	大学英语 2
4030004181	大学英语 4 College English IV	2	44				12	4	大学英语 3
4120335171	C 程序设计基础 C Language Programming	2	32					1	
4120336171	计算机基础与 C 程序设计综合实验 Foundations of Computer and C Language Programming Experiments	1	32	32				1	
小 计 Subtotal		29	640	32	0	48	64		

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 Ope- ratio	实践 Prac- tice	课外 Extra- cur		
(二) 通识选修课程 General Education Elective Courses									
创新创业类 Innovation and Entrepreneurship Courses	要求至少取得 9 个学分, 且必须选修艺术体育类课程中的艺术类相关课程并取得至少 2 个学分, 在创新创业类课程中至少选修一门课程, 在人文社科类或经济管理类课程中至少选修一门。 Students are required to obtain at least 9 credits, which must contain art courses of 2 credits from the category of Art and Physical Education Courses, at least one course from the category of Innovation and Entrepreneurship Courses, and at least one course from the category of Arts and Social Science Courses or the category of Economy and Management Courses.								
人文社科类 Arts and Social Science Courses									
经济管理类 Economy and Management Courses									
科学技术类 Science and Technology Courses									
艺术体育类 Art and Physical Education Courses									
(三) 专业教育必修课程 Basic Disciplinary Required Courses									
4180142131	专业导论 Introduction of Specialty	1	16					1	
4050229111	线性代数 Linear Algebra	2.5	40					1	
4050063111	高等数学 A 上 Advanced Mathematics I	5	80					1	
4050064111	高等数学 A 下 Advanced Mathematics II	5	80					2	高等数学上
4180269171	工程图学 B Engineering Graphics	3.5	72				16	2	
4050463131	大学物理 B Physics	5	80					2	
4180316111	现代物流学 C Modern Logistics	2	32					2	
4050058111	概率论与数理统计 B Probability and Mathematical Statistics	3	48					3	高等数学下
4050224111	物理实验 B Physics Lab.	1	32	32				3	大学物理
4100011111	电工与电子技术基础 B Fundamentals of Electrical Engineering & Electric Technology	5.5	88	20				3	
4180140111	运筹学 A Operational Research	3	48					3	线性代数 概率论与数理统计
4140076111	工程力学 A Mechanics of Engineering	4	64	4				3	
4180145121	供应链管理 B Supply Chain Management	3	48					4	现代物流学

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 Ope- ratio	实践 Prac- tice	课外 Extra- cur		
4180302171	控制工程基础 A Fundamentals of Engineering Control	2	32	4				4	
4180031111	机械设计基础 Fundamentals of Mechanical Design	3.5	56	6				4	
4180305171	现代测试技术 B Modern Testing Technology	2	32	4				4	
4180068111	物流系统工程 B Logistic System Engineering	2	32					5	概 率 论 与 数 理 统 计
4180303171	液压及气压传动 D Hydraulic and Pneumatic Transmission	2	32	4				5	
4180304171	单片机原理及接口技术 E Principles and Interfaces of Single Chip Microcomputer	2.5	40	6				5	
4180092111	自动识别技术 B Automatic Identification Technology	2	32	4				5	
4180025111	机电传动及控制 B Mechanical and Electronic Transmission and Control	2.5	40	4				5	
4180207131	物流设施规划与设计 B Logistic Equipment Planning and Design	2	32					6	物 流 系 统 工 程
4180076111	物流自动化系统设计与应用 B Design and Application of Logistic Automation System	2.5	40					7	
4180249151	物流信息系统 Logistic Information System	2	32	4				7	
小 计 Subtotal		68.5	1128	88	0	0	16		
(四) 专业教育选修课程 Specialized Elective Courses									
限选课程									
4180306171	物流仓储与配送技术 B Technology of Logistic Warehouse Storage and Distribution	2	32	4				4	
4180307171	生产计划与控制 B Production Planning and Control	2	32	4				5	
4180308171	计算机控制技术 D Computer Control Technology	2	32	4				6	
4120410171	物联网技术 C Technology of Internet of Things	2	32	4				6	
4180070111	物流系统建模与仿真 B Modeling and Simulation of Logistic System	2	32					6	物 流 系 统 工 程

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 Ope- ratio	实践 Prac- tice	课外 Extra- cur		
4180234131	机器人技术 A Robot Technology	2	32	2				6	
任选课程									
4120337171	Java 程序设计基础 Fundamentals of Computer Program Design(Java)	2	32					2	
4180040111	交通运输工程概论 A Introduction to Transportation Engineering	2	32					3	
4180310171	物流决策基础 C Fundamentals of Logistics Decision Making	1.5	24		4			4	现代物流学
4120075111	数据库技术 Technique of Database	2	32		12			5	
4180311171	技术经济学 D Technological Economics	1.5	24					5	
4180313171	电子商务 E Electronic Commerce	1.5	24		4			6	
4180312171	传感器原理及应用 D Sensors Principle and Application	2	32	4				6	
4180314171	现场总线技术 C Fieldbus Technology	1.5	24	4				7	
小 计 Subtotal		26	416	26	20	0	0		
修读说明：要求至少选修 19 学分（包括限选课程 12 学分）。 NOTE: Minimum subtotal credits:19.									

五、集中性实践教学环节

V Practice Schedule

课程编号 Course Number	实践环节名称 Practice Courses Name	学分 Crs	周数 Weeks	建议修读学期 Suggested Term
1060002111	军事训练 Military Training	1.5	3	1
4180121111	物流认知实习 Professional Cognitive Practice	1	1	2（企业）
4180114111	机械制造工程实训 C Practice of Mechanical Manufacturing Engineering	2	2	4
4180109111	机械设计基础课程设计 Course Design on Fundamentals of Mechanical Design	2	2	4
4180106111	工程软件训练 Engineering Software Training	1	1	4（暑期）
4100068111	电工电子实习 A Practice of Electrical Engineering & Electronics	2	2	5

课程编号 Course Number	实践环节名称 Practice Courses Name	学分 CrS	周数 Weeks	建议修读学期 Suggested Term
4180317171	单片机原理及接口技术课程设计 B Course Design on Principles and Interfaces of Single Chip Microcomputer	1.5	1.5	5
4180318171	物流工程创新实践 Innovation practice of Logistics Engineering	1	1	6(分散)
4180319171	机电传动及控制课程设计 B Course Design on Mechanical and Electronic Transmission and Control	1.5	1.5	6
4180253171	物流系统建模与仿真课程设计 A Design Practice of Machinery Designing Technology	1.5	1.5	6
4180250151	物流信息系统课程设计 Course Design on Logistics Information System	1	1	7
4180251171	物流自动化系统设计与应用课程设计 B Course Design on Design and Application of Logistics Automation System	1	1	7
4180115111	企业工程实训 Enterprise engineering practice	6	6	7(企业)
4180219131	专业实习 Professional Practice	3	3	7(企业)
4180252171	毕业设计(论文) Graduation Design(Thesis)	8.5	17	8(企业)
小 计 Subtotal		34.5	44.5	

六、其它要求

VI Recommendations on Course Studies

- 1、《形势与政策》和《心理健康教育》课程为课外必修课程，分别计 2 个和 1 个课外学分。
- 2、学生选修的通识选修课程和从学校发布的个性课程目录中选修的个性课程，要求与本专业培养方案内设置的课程内容不重复。

1.Situation & Policy (2 credits) and Mental Health Education (1 credit) are the required extracurricular courses.

2.The selected General Education Elective Courses and Personalized Elective Courses from the courses program by university must be different from the major undergraduate education plan in content.

学院教学责任人：刘志平
专业培养方案责任人：于 蒙