武汉理工大学交通学院

School of Transportation of
Wuhan University of Technology

本科专业培养方案

Undergraduate Program

（Grade 2013）

武汉理工大学教务处

Academic Affairs Office of Wuhan University of Technology

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道路桥梁与渡河工程专业本科培养方案
Undergraduate Program for Specialty in road, bridge and river-crossing engineering

一、业务培养目标

Ⅰ Educational Objectives

培养具备工程力学、道路工程、桥梁工程及渡河工程等方面的基本理论和专业知识，具备从事路桥与渡河工程项目规划、设计、研究开发及管理的能力，能在道路桥梁及渡河工程等的设计、研究、施工、教育、投资、开发部门从事技术或管理工作的高级工程技术人才。

This program is designed to train advanced engineers with a sound background of basic theories and professional knowledge in engineering mechanics, road, bridge and river-crossing engineering, who will become professionals and managers in various kinds of road, bridge and river-crossing engineering related departments engaging in management and technique works in designing, R&D, construction, training and investment.

二、业务培养要求

Ⅱ Educational Requirement

主要学习力学、道路工程、桥梁工程及渡河工程等方面的基本理论和基本知识，接受课程设计、试验仪器操作和现场实习等方面的基本训练，获得工程规划与选型、工程材料、结构分析和设计等方面的基本技术，具备进行道路桥梁与渡河工程设计、试验、施工、管理和研究的初步能力。

Students majoring in road, bridge and river-crossing engineering mainly study basic theories and knowledge of mechanics as well as road, bridge and river-crossing engineering. They will be trained on course design, experimental equipment operation and field study. The students have to master basic ability of project planning, engineering material, and structural analysis and design, and the preliminary ability of project designing, testing, construction, management and research.

毕业生应获得以下几方面的知识和能力：

1．具有较扎实的自然科学基础，较好的人文、艺术和社会科学基础及正确运用本国语言、文字的表达能力；

2．较系统地掌握本专业领域宽广的技术理论基础知识，掌握计算机在工程设计中应用的基本技术；

3．具有较强的解决与道路桥梁与渡河工程有关的工程技术问题的理论分析能力与实验技术；

4．具有较强的计算机和外语应用能力；

5．具有较强的自学能力、创新意识和较高的综合素质。

1. To possess solid foundation of natural science, humanity, art and social science, as well as the expression ability by native language and words.

2. To systematically master extensive basic knowledge of technology and theory, and master the basic technology of computer applications in engineering design.

3. To possess advanced experimental technology and theoretical analysis ability for solve engineering technique problems related to road, bridge and river-crossing engineering.

4. To possess advanced ability to apply computer technique and foreign languages.

5. To possess advanced self-study ability, innovative consciousness and comprehensive qualities.

三、主干学科

Ⅲ Major Disciplines

主干学科：交通运输工程、土木工程

Major Disciplines: Transportation and Civil Engineering

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：工程地质、结构力学、土力学、基础工程、道路建筑材料、测量学、混凝土结构、钢结构、道路勘测设计、路基路面工程、桥梁工程

Core Courses: Engineering Geology, Structure Mechanics, Soil Mechanics, Foundation Engineering, Road Construction Materials, Concrete Structures Theory, Steel Structures, Highway Survey and Design, Subgrade and Pavement Engineering, Bridge Engineering.

专业特色课程：涉外工程、轨道工程、浮桥工程

Characteristic Courses: Overseas civil engineering, Rail Engineering, pontoon engineering

五、计划学制与学位

Ⅴ Length of School and Degree

修业年限：四年

Duration： Four Years

授予学位：工学学士

Degree Granted: Bachelor of Engineer

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39	43	\	26	\	190
选修课 Elective Courses	9	6	12	10	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	大学英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	大学英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	大学英语 A3	
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		程序设计语言课程组(三选一，3 学分)										
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design(C)	3	48		12			2		
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design(FORTRAN)	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design(VB)	3	48		12			2		
		小　计 Subtotal		35	736		24	64	64			
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses	全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.									
		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										

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extracur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		艺术体育类 Art and Physical Education Courses										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140248111	专业导论 Introduction to the Program	1	16					1		
		4180017111	工程图学 B Engineering Graphics B	4	64		4			1		
		4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2	高等数学 A 上	
		4140126111	理论力学 B Theoretical Mechanics B	3	48					2	高等数学 A 上	
		4050024111	大学物理 C Physics C	4.5	72					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				2	大学物理 C	
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4050254111	运筹学 Operational Research	3	48					3	线性代数	
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3		
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering & Electric Technology C	4	64	10				3		
		4140356131	测量学 Measurement Theory	3	48	6				3		
		小 计 Subtotal		39	640	48	4					
	选修课 Elective Courses	4140115111	交通运输工程经济 Engineering Economics of Transportation	2	32					3		
		4140113111	交通运输工程概论 A An Introduction to Transportation Engineering A	2	32					3		
		4140124111	可持续发展的交通运输 Sustainable Transportation	2	32					3		
		4140406131	虚拟运输企业商务管理 Virtual transport enterprise business management	2	32					3		
		4140107111	交通信息与数据库技术 Traffic Information and Database Technique	2	32					3		
		4140136111	商务函电 Business Letters and	2	32					5		
		4140143111	土木工程施工 B Construction of Civil Engineering B	2	32					3		
		4140052111	道桥景观设计 Landscape Design for Highway and Bridge	2	32					3		
		4140083111	轨道工程 Rail Engineering	2	32					6		
		小 计 Subtotal		18	288							

课程类别 Course Classifi-cation	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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term		
		修读说明：要求至少选修 6 学分。 NOTE：Minimum subtotal credits:6										
专业课程 Specialized Courses	必修课 Required Courses	4140004111	材料力学 C Materials Mechanics C	4	64	4				4	高等数学 A 下	
		4140065111	工程地质 A Engineering Geology A	2.5	40	4				4	测量学	
		4140043111	道路建筑材料 A Road Construction Materials A	3	48					4	材料力学 C	
		4140049111	道路勘测设计 A Highway Survey and Design A	4	64					4	测量学	
		4140120111	结构力学 B Structure Mechanics B	5	80					5	材料力学 C	
		4140090111	混凝土结构 Concrete Structures Theory Structural	4	64					5	道路建筑材料 A	
		4140141111	土力学 A Soil Mechanics A	3.5	56	6				5	材料力学 C	
		4140131111	桥涵水文 A Hydrology of Bridge and Culvert A	2	32					5	概率论与数理统计 B	
		4140055111	钢结构 Steel Structures	2	32					6	结构力学 B	
		4140092111	基础工程 A Infrastructure Engineering A	2.5	40					6	结构力学 B	
		4140415131	路基路面工程 A Subgrade and Pavement Engineering A	4	64	6				6	道路建筑材料 A	
		4140132111	桥梁工程 A Bridge Engineering A	4.5	72					6	结构力学 B /混凝土结构	
		4140137111	施工组织与概预算 Construction Organizing and Budgeting	2	32					7	路基路面工程	
		小 计 Subtotal		43	688	20						
	选修课 Elective Courses	4140134111	桥梁结构电算 Structural analysis of Bridge	2.5	40		24			6	结构力学 B	
		4140272121	道路工程计算机辅助设计 Highway CAD	2.5	40		24			6	道路勘测设计 A	
		4140068111	工程监理概论 Introduction to Engineering Supervision	2	32					6		
		4140080111	公路小桥涵勘测设计 Survey and Design of Little Bridges and Culverts of Highway	2	32					7	桥涵水文 A	
		4140075111	工程抗震设计 Seismic Design for Engineering Structures	2	32					7	结构力学 B	
		4140135111	桥梁施工 Bridge Constructions	2.5	40			8		7	桥梁工程 A	
		4140164111	大跨度桥梁 Long-Span Bridges	2	32					7	桥梁工程 A	
		4140057111	钢桥 Steel Bridges	2	32					7	桥梁工程 A	
		4140050111	道路施工 Construction of Highway	2.5	40			8		7	路基路面工程	

课程类别 Course Classifi-cation	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 总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		4140339111	城市道路设计 Design of Urban Road	2	32					7	道路勘测设计 A	
		4140313121	涉外工程 Overseas civil engineering	2	32					7	施工组织与概预算	
		4140275121	浮桥工程 pontoon engineering	2	32					7	桥涵水文 A 桥梁工程 A	
		4140420131	隧道工程 B Tunnel Engineering B	2.5	40					7	工程地质 A /结构力学 B	
		小 计 Subtotal		28.5	456		48	16				
		修读说明：要求至少选修 12 学分 NOTE：Minimum subtotal credits:12										
个性课程 Personalized Course	选修课 Elective Courses	4140432131	道路工程前沿 Road engineering frontier	2	32			8		7		
		4140433131	桥梁工程前沿 Bridge engineering frontier	2	32			8		7		
		4140434131	科技创新实践活动方法及案例 Practice Method and Case of Science and Technology Innovation	2	32			8		3		
		小 计 Subtotal		6	69			24				
		修读说明：学生可跨专业自主选择修读全校其他专业的课程，建议修读以上课程。要求至少选修 10 学分。 NOTE：Students can choose any courses from the other specialties, and are especially suggested to choose the courses above. Minimum subtotal credits: 10.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

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	第二专业 Second Major
1060002111	军事训练 Military Training	3	1.5	1	
4140425131	认识实习 Practice of Recognition	0.5	0.5	4	
4140198111	地质实习 Geology Practice	0.5	0.5	4	
4140180111	测量实习 B Survey Practice B	2	2	4	
4140210111	建筑材料综合实验 Integrated Experiments of Construction	1	1	4(分散)	
4140373131	道路勘测设计课程设计 Course Design on Road Survey Design	1	1	5	
4140196111	道路勘测实习 Road Survey Practice	2.5	2.5	5	
4140410131	混凝土结构课程设计 Course Design on Concrete Structure	1	1	6	
4140419131	桥梁工程——桥梁方案课程设计 Course Design on Bridge Scheme of Bridge Engineering	1	1	6	

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	第二专业 Second Major
4140207111	基础工程课程设计 Course Design on Foundation Engineering	1	1	6	
4140199111	钢结构课程设计 Course Design on Steel Structure	1	1	7	
4140418131	桥梁工程——结构计算课程设计 Course Design on Bridge Structural Computation	1	1	7	
4140416131	路基路面工程课程设计 Course Design on Subgrade and Pavement Engineering	1	1	7	
4070175111	毕业设计（论文） Graduation Thesis	17	11	8	
小　　计　Subtotal		33.5	26		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school.

交通运输专业本科培养方案
Undergraduate Program for Specialty in Transportation

一、业务培养目标

Ⅰ Educational Objectives

培养具备交通运输组织与决策、现代港口与国际航运管理、交通运输规划及现代物流管理等理论基础和技能，创新能力强，适应经济社会发展需要，能在国家及各省、市交通运输管理部门、交通运输企事业单位从事交通运输组织、指挥、决策、交通运输企业生产与经营管理、物流管理及研究的高质量工程技术及管理人才。

This program is designed to educate advanced technical and managerial talents with basic knowledge and abilities in transportation organizing and decision-making, modern port and international shipping management, transportation planning and logistics management. On these bases, the talents are able to engage in organizing, commanding, decision-making, and operation management in state, provincial and municipal transportation departments and transport logistics enterprise and institutions.

二、业务培养要求

Ⅱ Educational Requirement

交通运输专业学生在完成专业导论、工程图学、工程力学、交通运输工程概论、交通运输地理与布局、交通运输工程经济和运筹学等大类学科基础课程的学习后，进入专业课程学习。具体培养要求为：

交通运输专业学生主要学习交通运输组织、现代港口与国际航运、交通运输规划、现代物流等方面的基本理论和基本知识，接受交通运输生产、经营、商务、信息等方面的知识和技能的专门训练，具有较强的运用专业知识解决实际问题的能力。

毕业生应获得以下几方面的知识和能力：

1. 具有较扎实的自然科学基础，了解当代科学技术的主要方向和应用前景；
2. 熟悉国家关于交通运输方面的方针、政策和法规，并了解现代交通运输的发展方向；
3. 掌握计算机在交通运输管理、交通规划和工程设计中应用的基本技术；
4. 具有交通运输组织指挥、交通运输企业生产与经营、交通运输规划、交通安全工程、交通工程项目管理的能力；
5. 掌握文献检索资料查询的基本方法，具有初步的科学研究和实际工作能力。

This is the general transportation program. After finishing basic courses of *Introduction to Specialty, Transportation Technical Economics, Introduction to Traffic and Transportation Engineering, Theoretical Mechanics, Survey Theory and Operational Research*, the students of the general transportation program will be divided into different majors in the fourth term through a two-way selection method. The detailed educational requirements are listed as follows:

Students majoring in transportation will mainly study basic theories and knowledge on optimization of transportation organizing and decision-making, modern port and international shipping management, as well as transportation planning and logistics management. They will acquire necessary training on management of transport operation, business, technology and information, and basic ability of adopting management and decision-making techniques to organize transport operation effectively for the purpose of optimum social and economic benefits.

Graduates are required to obtain the following knowledge and abilities:

1. Having a relatively solid foundation of natural science, and understanding the main direction and application prospect of contemporary science and technology;
2. Getting familiar with the guidelines, policies and regulations about traffic and transportation, and

understanding the development direction of modern traffic and transportation;

3. Mastering the basic skills of computer application knowledge in traffic and transportation management, traffic planning and engineering design;

4. Being equipped with the traffic and transportation organization and direction ability, traffic and transportation enterprise production and operation ability, transportation planning ability, traffic and transportation safety engineering ability, and traffic engineering project management ability;

5. Matering the basic literature retrieval and material inquiry methods, and having preliminary scientific research and actual work ability.

三、主干学科

Ⅲ Major Disciplines

本交通运输大类主干学科为：交通运输工程

Major Disciplines: transportation, system engineering

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：港口装卸工艺、交通运输经济分析、现代物流学、交通运输规划概论、船舶货运技术、港口企业管理学、船舶营运组织、国际集装箱多式联运、国际航运业务与水运商务、公路运输组织学、交通运输安全工程

Core Courses: Port Handling Techniques、Analysis on Transport Economics、 Modern Logistics 、Introduction to Transportation Planning、Ship Stowage Techniques、Port Enterprise Management、Shipping Operation and Organization、Multimodal Transport、Shipping Business、Road Transport organization、Traffic and Transportation Safety

专业特色课程：港口装卸工艺，船舶营运组织，港口企业管理学，国际航运业务与水运商务，交通运输经济分析，现代物流学

Characteristic Courses: Port Handling Techniques、Shipping Operation and Organization、Port Enterprise Management、Shipping Business、Analysis on Transport Economics、The Modern Logistics.

五、计划学制与学位

Ⅴ Length of School and Degree

修业年限：四年

Duration: 4 years

授予学位：工学学士

Degrees Conferred: Bachelor of Engineer

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39	37	\	29	\	190
选修课 Elective Courses	9	6	15	10	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	大学英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	大学英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	大学英语 A3	
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		程序设计语言课程组(三选一，3 学分) Courses of Computer Program Design (select one out of three, Credits: 3)										
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design(FORTRAN)	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design(VB)	3	48		12			2		
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design(C)	3	48		12			2		
		小　计 Subtotal		35	736		24	64	64			
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses		全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.								
		人文社科类 Arts and Social Science Courses										
		经济管理类 Economy and Management Courses										

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		科学技术类 Science and Technology Courses										
		艺术体育类 Art and Physical Education Courses										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140248111	专业导论 Introduction to the Program	1	16					1		
		4180017111	工程图学 B Engineering Graphics B	4	64		4			1		
		4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2	高等数学 A 上	
		4140126111	理论力学 B Theoretical Mechanics B	3	48					2	大学物理 C	
		4050024111	大学物理 C Physics C	4.5	72					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				2	大学物理 C	
		4050229111	线性代数 Linear Algebra	2.5	40					2	高等数学 A 上	
		4050254111	运筹学 Operational Research	3	48					3		
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3	高等数学 A 上	
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering & Electric Technology C	4	64	10				3	大学物理 C	
		4140006111	测量学 Measurement Theory	3	48	6				3	工程图学 B	
		小 计 Subtotal		39	664	48	4					
	选修课 Elective Courses	4140115111	交通运输工程经济 Engineering Economics of Transportation	2	32					3		
		4140113111	交通运输工程概论 A An Introduction to Transportation Engineering A	2	32					3		
		4140124111	可持续发展的交通运输 Sustainable Transportation	2	32					3		
		4140405131	虚拟运输企业商务管理 Virtual transport enterprise business management	2	32					3		
		4140107111	交通信息与数据库技术 Traffic Information and Database Technique	2	32					3		
		4140136111	商务函电 Business Correspondence	2	32					5		
		4140143111	土木工程施工 B Construction of Civil Engineering B	2	32					3		
		4140052111	道桥景观设计 Landscape Design for Highway and Bridge	2	32					3		
		4140083111	轨道工程 Rail Engineering	2	32					6		

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		小 计 Subtotal		18	288							
		修读说明：要求至少选修 6 学分。 NOTE：Minimum subtotal credits: 6.										
专业课程 Specialized Courses	必修课 Required Courses	4140298121	交通管理信息系统 Management Information System for Transportation	3	48		16			4		
		4140110111	交通运输地理与布局 Transport Geography and Layout	2.5	40					4		
		4140411131	船舶货运技术 Ship Stowage Techniques	2	32					4		
		4140086111	国际航运业务与水运商务 International Shipping and Waterborne Business	3	48					5		
		4140424131	公路运输组织学 Road Transport Organization	2	32					5		
		4140421131	现代物流学 Modern Logistics	2.5	40		8			5		
		4140421131	港口与航道工程学 Harbor and Waterway Engineering	2	32					5		
		4140278121	港口装卸工艺 Port Handling Techniques	3	48					5		
		4140412131	交通运输经济分析 Analysis on Transport Economics	2.5	40					5		
		4140058111	港口经济学 Port Economics	2.5	40					6		
		4140059111	港口企业管理学 Port Enterprise Management	3	48					6		
		4140419131	船舶营运组织 Shipping Management	2.5	40					6		
		4140282121	国际航运经济与市场学 International Shipping Economics	2.5	40					6		
		4140209131	交通运输法规 Transport Laws and Regulations	2	32					6		
		4140116111	交通运输规划概论 Introduction to Transportation Planning	2	32					6		
		小 计 Subtotal		37	592		24					
	选修课 Elective Courses	4140033111	船舶原理 C ShipTheory C	2	32					4		
		4140117111	交通运输设备概论 Introduction to Transportation Equipment	2	32					4		
		4140105111	交通投融资管理 Transport Investment and Financing	2	32					5		
		4140138111	水运管理技术 Techniques of Waterborne Management	2	32					5		
		4140407131	运输管理学 Transportation Management	2.5	40					5		
		4170065111	会计学 B Accounting B	2	32					5		
		4140155111	运输市场营销学 Transport Marketing	2	32					6		

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	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur			
		4140296121	交通港站与枢纽设计 Traffic Hub and Terminal Design	3	48			16		6		
		4140257111	交通运输安全工程 Traffic and Transportation Safety	2	32					6		
		4170014111	财务管理 B Financial Management B	2	32					7		
		4140146111	物流运营管理 Logistics Operation Management	2	32					7		
		4140144111	外贸口岸管理 Port Administration for Foreign Trade	2	32					7		
		4140108111	交通行政管理 Transport Administration	2	32					7		
		4140384131	国际集装箱运输与多式联运 International Container Multimodal Transport	2	32					7		
		4140152111	运输代理理论与实务 Theory and Practices of Transport Agency	2	32					7		
		4140098111	交通工程项目概预算 Budgeting of Traffic Engineering Project	2	32					7		
		4140161111	仓储与配送实务 Warehousing and Distribution Practices	2	32					7		
		4140054111	第三方物流管理理论与实务 Theory and Practices of Third Party Logistics Management	2	32					7		
		4140145111	物流系统规划与设计概论 Logistics System Planning and Designing	2	32					7		
		4140082111	供应链基础 Fundamentals of Supply Chain Management	2	32					7		
		小 计 Subtotal		41.5	664			16				
		修读说明：要求至少选修 15 学分。 NOTE：Minimum subtotal credits: 15.										
个性课程 Personalized Course	选修课 Elective Courses	修读说明：学生可跨专业自主选择修读全校其他专业的课程程。要求至少选修 10 学分。 NOTE：Students can choose any courses from the other specialties. Minimum subtotal credits: 10.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

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	第二专业 Second Major
1060002111	军事训练 Military Training	3	1.5	1	
4140208111	基础强化训练 Foundation Strengthening Training	1	1	4(暑期)	
4140181111	船舶货运技术课程设计 Course Design on Ship Storage Techniques	1.5	1.5	4	

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	第二专业 Second Major
4140203111	管理信息系统课程设计 Course Design on Information Management System	1.5	1.5	4	
4140226111	认识实习 Practice of Understanding	1	1	5	
4140381131	港口装卸工艺课程设计 Course Design on Port Handling Techniques	1.5	1.5	5	
4140369131	船型技术经济论证课程设计 Course Design on Ship Formulation	1.5	1.5	6	
4140221111	能力拓展训练 Ability Development Training	1	1	6（暑假）	
4140329121	交通调查实训 Practice of Traffic Investigation	1.5	1.5	7	
4140426131	生产实习 Practice of Production	2	2	7	
4140209111	集装箱港口生产组织模拟仿真实验 Simulation Experiment on Container Port Operation	1	1	7	
4140315121	水路运输管理模拟综合实验 Integrated Simulation Experiment on Water Transport Management	1	1	7	
4140383131	公路运输管理模拟综合实验 Integrated Simulation Experiment on road Transport Management	1	1	7	
4140242111	物流管理模拟综合实验 Integrated Simulation Experiment of Logistics Management	1	1	7	
4140330121	毕业论文 Graduation Thesis	17	11	8	
小　　计　Subtotal		36.5	29		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school.

交通工程专业本科培养方案
Undergraduate Program for Traffic Engineering

一、业务培养目标

Ⅰ Educational Objectives

本专业培养具备交通运输系统分析与规划、交通设计、交通工程设施设计、施工与管理、交通系统管理与控制和交通安全等方面的专业知识及能力，能够从事本领域规划、设计、施工、管理与运营的高级工程技术及管理的复合型人才。

This program is designed to train inter-disciplinary talent with both advanced engineering technicians and management with basic knowledge in traffic engineering, transportation system planning, traffic designing, traffic engineering facilities designing, road constructing and management, traffic management and control and traffic safety. Graduate can engage in planning, designing, constructing, managing and operating in field of traffic engineering.

二、业务培养要求

Ⅱ Educational Requirements

交通工程专业主要学习交通工程学的基本理论与基本知识，接收到交通系统规划、设计、施工及运营管理等方面的基本训练，具备以上基本能力。

毕业生应获得以下几方面的知识和能力：

1、掌握交通系统问题的分析方法，掌握交通工程学、交通系统分析、交通规划、交通管理与控制、道路交通安全工程的基本理论和基本知识；

2、掌握道路交通及其设施的规划、设计、施工与维护管理的基本理论与方法；

3、具有运用交通工程学基础知识和交通规划、交通工程设计、交通控制系统、道路勘测设计和道路设施设计、施工与维护管理等技术，能够解决道路交通系统出现的各类问题的基本能力；

4、熟悉国家关于交通规划、建设及运营管理的方针、政策和法规，熟悉相应的标准规范；

5、了解国内外交通工程领域的发展动态；

6、具有一定的科学研究和实际工作能力，并具有一定的独立和团队思维能力。

Students will mainly study basic theories and knowledge of traffic engineering, and be trained in aspect of traffic system planning, designing, constructing and operating and gain basic abilities of them.

The graduate should gain following knowledge and basic abilities:

1. Master methods of traffic system problem analysis. Master basic theory and knowledge of traffic engineering, traffic system analysis, traffic planning, traffic management and control, road traffic safety engineering.

2. Master basic theory and methods of traffic and traffic facilities' planning, design, construction, management and maintain.

3. Can using theory and technique of traffic engineering, traffic planning, traffic engineering design, traffic control system, Highway Survey and Design, road facilities design, road construction and maintaining management. Have basic ability to solve different problem in road traffic system.

4. Be familiar with national policy, rule and regulation about traffic planning, construction and operating management. Be familiar with relevant standard specifications.

5. Understand development in field of traffic engineering in domestic and oversea.

6. Have a certain ability of scientific research and practical working. Have a certain ability of individual and group thinking.

三、主干学科

Ⅲ Major Disciplines

交通运输工程、交通工程、土木工程、系统工程

Transportation Engineering, Traffic Engineering, Civil Engineering, System Engineering

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：交通系统分析、交通规划、交通管理与控制、交通设计、道路交通安全工程、交通调查与分析、城市规划原理、道路勘测设计、材料力学、结构力学。

Core Courses：Traffic System Analysis, Traffic Planning, Traffic Management and Control, Traffic Design, Road Traffic Safety Engineering, Traffic Investigation and Analysis, Highway Survey and Design, Materials Mechanics, Structure Mechanics

专业特色课程：城市客运交通、城市轨道交通规划与管理、交通工程案例讲解、智能交通系统

Characteristic Courses: Urban Passenger Transportation, Planning and Management for Urban Rail, Traffic Engineering Case Study, Intelligent Transportation System

五、学制与学位

Ⅴ Length of School and Degree

修业年限：四年

Duration: Four Years

授予学位：工学学士

Degree Granted: Bachelor of Engineering

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39	36.5	\	28.5	\	190
选修课 Elective Courses	9	6	16	10	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		1		
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	大学英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	大学英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	大学英语 A3	
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		程序设计语言课程组(三选一，3 学分)										
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design(C)	3	48		12			2		
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design(FORTRAN)	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design(VB)	3	48		12			2		
		小　计 Subtotal		35	736		24	64	64			
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses	全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.									
		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										

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extracur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		艺术体育类 Art and Physical Education Courses										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140248111	专业导论 Introduction to the Program	1	16					1		
		4180017111	工程图学 B Engineering Graphics B	4	64		4			1		
		4050229111	线性代数 Linear Algebra	2.5	40					1		
		4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2	高等数学 A 上	
		4140126111	理论力学 B Theoretical Mechanics B	3	48					2		
		4050024111	大学物理 C Physics C	4.5	72					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				2	大学物理 C	
		4050254111	运筹学 Operational Research	3	48					3		
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3	高等数学 A 下	
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering & Electric Technology C	4	64	10				3	高等数学 A 下	
		4140006111	测量学 Measurement Theory	3	48	6				3	高等数学 A 下	
		小 计 Subtotal		39	640	48	4					
	选修课 Elective Courses	4140115111	交通运输工程经济 Engineering Economics of Transportation	2	32					3		
		4140113111	交通运输工程概论 A An Introduction to Transportation Engineering A	2	32					3		
		4140124111	可持续发展的交通运输 Sustainable Transportation	2	32					3		
		4140405131	虚拟运输企业商务管理 Virtual transport enterprise business	2	32					3		
		4140107111	交通信息与数据库技术 Traffic Information and Database Technique	2	32					3		
		4140136111	商务函电 Business Letters and Lecommunications	2	32					5		
		4140143111	土木工程施工 B Construction of Civil Engineering B	2	32					3		
		4140052111	道桥景观设计 Landscape Design for Highway and Bridge	2	32					3		
		4140083111	轨道工程 Rail Engineering	2	32					6		
		小 计 Subtotal		18	288							
		修读说明：要求至少选修 6 学分。 NOTE：Minimum subtotal credits: 6.										

课程类别 Course Classifi-cation	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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term		
专业课程 Specialized Courses	必修课 Required Courses	4140043111	道路建筑材料 A Road Construction Materials A	3	48					4	测量学	
		4140099111	交通工程学 Traffic Engineering	2	32					4	测量学	
		4140005111	材料力学 Materials Mechanics	3	48					4	结构力学 D	
		4140121111	结构力学 D Structure Mechanics D	3	48					4	测量学	
		4140008111	城市规划原理 Urban Planning Theory	2	32					5	交通工程学	
		4140372131	道路勘测设计 Highway Survey and Design	3	48					5	交通工程学	
		4140096111	交通调查与分析 Traffic Investigation and Analysis	2	32					5	交通工程学	
		4140106111	交通系统分析 Traffic System Analysis	3	48					5	交通工程学	
		4140102111	交通规划 Traffic Planning	3	48					6	交通系统分析	
		4140101111	交通管理与控制 Traffic Management and Control	3	48					6	交通系统分析	
		4140045111	道路交通安全工程 Road Traffic Safety Engineering	2.5	40					6	交通系统分析	
		4140363131	城市轨道交通规划与管理 Planning and Management for Urban Rail Transportation	2	32					6	交通系统分析	
		4140413131	交通设计 Traffic Design	2	32					7	交通规划	
		4140310121	路基路面工程 Road Subgrade and Pavement Engineering	2	32					7	交通规划	
		4140297121	交通工程案例讲解 Traffic Engineering Case Study	1	16					7	交通规划	
		小 计 Subtotal		36.5	584							
	选修课 Elective Courses	4140066111	工程地质 B Engineering Geology B	2	32					5	道路建筑材料 A	
		4140142111	土力学 C Soil Mechanic C	2	32					5	道路建筑材料 A	
		4140009111	混凝土结构 Concrete Structure	4	64					5	材料力学	
		4140403131	现代道路交通物流学 Modern Road Logistics	2	32					6	交通调查与分析	
		4140103111	交通离散模拟系统 Transpiration Discrete Modeling	2	32	16				6	交通调查与分析	
		4140068111	工程监理概论 An Introduction to Project Supervision	2	32					6	材料力学	
		4140047111	道路交通环境工程 Traffic Environment Engineering	2	32					6	交通系统分析	
		4140309121	立体交叉规划与设计 Interchange Planning and Design	2	32					6	交通调查与分析	

课程类别 Course Classifi-cation	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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term		
		4140159111	智能交通系统 Intelligent Transportation System	2	32					6	交通调查与分析	
		4140051111	道路施工组织与工程概预算 Road Construction Organizing and Budgeting	2	32					7	交通规划	
		4140062111	高速公路管理学 Freeway Management Theory	2	32					7	交通规划	
		4140095111	交通场站设计 Transportation station Design	2	32					7	交通规划	
		4140046111	道路交通附属设施设计 Road Traffic Facility Design	2	32					7	交通规划	
		4140010111	城市客运交通 Urban Passenger Transportation	2	32					7	交通规划	
		小 计 Subtotal		30	480	16						
		修读说明：要求至少选修 16 学分。 NOTE：Minimum subtotal credits: 16.										
个性课程 Personalized Course	选修课 Elective Courses	4140435131	交通工程学研究前沿与创新案例 Traffic Engineering Research Frontier and Innovation Case	2	32			8	8	4		
		4140476131	交通工程学研究批判性思维与方法论实践	2	32					7		
		小 计 Subtotal		4	64			8	8			
		修读说明：学生可跨专业自主选择修读全校其他专业的课程，建议修读以上课程。要求至少选修 10 学分。 NOTE：Students can choose any courses from the other specialties, and are especially suggested to choose the courses above. Minimum subtotal credits: 10.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

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	第二专业 Second Major
1060002111	军事训练 Military Training	3	1.5	1	
4140229111	认识实习 Practice of Recognition	1	1	4	

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	第二专业 Second Major
4140180111	测量实习 B Survey PracticeB	2	2	4	
4140217111	交通流参数观测综合实验 Integrated Experiments of Traffic Flow Parameters	1.5	1.5	5	
4140374131	道路勘测与设计实验 Course Design on Road Survey	2	2	5	
4140392131	交通规划综合实验 Integrated Experiments of Design on Traffic	1.5	1.5	6	
4140371131	道路工程 CAD 实验 Experiments of Road Engineering CAD	1	1	6	
4140427131	道路交通安全实验与分析 Road Traffic Safety Experiments and Analysis	1.5	1.5	6	
4140215111	交通控制实验与设计 Experiment and Design of Traffic Control	1.5	1.5	7	
4140389131	交通系统仿真综合实验 Integrated Simulation of Traffic Control System	1.5	1.5	7	
4140414131	交通设计课程实验与设计 Experiments and Design on Traffic Design	1.5	1.5	7	
4140428131	毕业实习 Graduation Practice	2	2	8	
4140423131	毕业设计（论文） Graduation Thesis	15	10	8	
小　　计　Subtotal		35	28.5		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school.

港口航道与海岸工程专业本科培养方案
Undergraduate Program for Specialty in Port & Waterway and Coastal Engineering

一、业务培养目标

Ⅰ Educational Objectives

本专业培养掌握港口工程、航道工程、海岸工程方面的基本理论和基本知识，具备工程规划、设计、施工和管理等方面的知识和技能，能在港口、近海工程、交通、水利、土木工程等领域从事研究、规划、设计、施工和管理等工作的高级工程技术人才。

This major aims at training advanced specialist with foundational knowledge and solid basis in the field of port & Waterway and Coastal engineering, the students have abilities for planning, design, construction and management of engineering. Thus the students can enter the field such as coastal engineering, modern port, transportation, water conservancy and civil engineering etc.

二、业务培养要求

Ⅱ Educational Requirement

本专业学生主要学习港口工程、航道工程和海岸工程建设所必需的基本理论和基本知识，接受必要的工程设计方法、施工管理方法和科学研究方法的基本训练，掌握较好的科学素养，获得工程制图、工程测量、科学运算、实验和测试、工程设计和书写报告等方面的基本训练，具备运用所学到的专业知识分析解决实际问题、科学研究、组织管理的基本能力。

毕业生应获得以下几方面的知识能力：

1. 具备科学、技术、职业以及社会经济方面的丰富知识，掌握港口航道及海岸工程学科的基本理论和基本知识，包括人文社会科学知识、自然科学知识、工具性知识、专业知识及社会发展和相关领域科学知识；

2. 拥有科学研究、技术开发、技术应用或管理、合作交流等基本技能，基本掌握港口航道及海岸工程专业（包括水利工程、海洋工程及技术专业）的勘测与设计方法、施工与管理技能以及科学研究的分析方法；

3．了解国家对本行业以及相关行业的生产、设计、研发、环境保护和可持续发展等方面的方针、政策和法规，具有开拓创新和产品开发、设计的能力以及工程项目集成的基本能力，并具有较强的解决有关港航工程技术问题的理论分析能力与实验技术；

4．具有一定的国际视野和跨文化环境下的交流、合作与竞争的基本能力；

5．具有信息获取、知识更新和持续学习的能力；

6．具有较强的社会责任感和工程职业道德，具有良好的心理素质和身体素质；

7．具有应对危机与突发事件的基本能力和一定的组织领导能力。

For this specialty, students mainly study basic theories and knowledge of port，waterway and offshore engineering, accept necessary training of engineering technique, and master the basic ability to solve engineering problems related to mechanics by applying computer and modern experimental measures.

The detailed educational requirement are listed as follows：

1.To possess solid foundation of natural science, humanity, art and social science, as well as the expression ability by native language and words.

2.To systematically master extensive basic knowledge of technology and theory, mainly including engineering mechanics, structure mechanics，hydraulics, analysis and modeling of hydraulic structure and so on.

3.To possess advanced experimental technology and theoretical analysis ability for solve engineering technique problems related to port and waterway engineering.

4.To possess advanced ability to apply computer technique and foreign languages.

5.To possess advanced self-study ability, innovative consciousness and comprehensive qualities.

6.To possess a strong sense of social responsibility and engineering ethics, with the good psychological and physical quality

7.To possess a basic capability of deal with crisis and emergencies and organizational leadership.

三、主干学科

Ⅲ Major Disciplines

主干学科：水利工程，海洋工程，土木工程

Major Disciplines: Water Conservancy Engineering, Offshore Engineering, Civil Engineering

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：理论力学、材料力学、工程结构力学、水力学、土力学与基础工程、工程地质、测量学、工程材料、工程水文学、河流与海岸动力学、混凝土结构设计原理、港口海岸水工建筑物、航道整治、水运工程施工、港口规划与布置

Core Courses: Theoretical Mechanics, Material Mechanics, Structure Mechanics, Hydraulics，Soil Mechanics，Measurement Theory，Engineering material，Engineering Hydrology，River and Coastal Hydrodynamics，Design Principle of Concrete Structure，Harbor & Coastal Engineering Hydraulic Structure，Waterway Regulation，Construction of Navigation Engineering，Port Planning and Layout

专业特色课程：水工结构建模与分析、水工钢结构设计原理与设计、水工建筑物检测与健康诊断、结构动力学、弹性力学与有限元基础、结构实验技术、桥梁工程

Characteristic Courses: Analysis and Modeling of Hydraulic Structure，Principle and Design of Hydraulic Steel Structures，Construction Detection Technique of Hydraulic Structure，Structural Dynamics，Theory of Elasticity & Finite Element method ，Structural Experiment Technology，Bridge Engineering，Foundation Engineering，

五、学制与学位

Ⅴ Length of School and Degree

修业年限：四年

Duration: 4 years

授予学位：工学学士

Degrees Conferred: Bachelor of Engineer

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	40.5	51	\	20.5	\	190
选修课 Elective Courses	9	\	14	10	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

八、理论教学建议进程表

Ⅷ 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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term		
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060001111	军事理论 Military Theory	1	32			16		2-4		
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	英语 A3	
		程序设计语言课程组(三选一，3 学分) Course Group of Computer Program Design(One in Three, 3 Credits)										
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design	3	48		12			2		
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design	3	48		12			2		
		小 计 Subtotal		35	736		24	64	64			

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses		全校学生要求至少取得 9 学分，建议每个类别中分别至少选修一门课程。All students are required to obtain at least 9 credits, and suggested to select at least one course in five categories respectively.								
		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										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140160111	专业导论 Introduction to the Program	1	16					1		*
		4180017111	工程图学 B Engineering Graphics B	4	64		4			1		*
		4050063111	高等数学 A1 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A2 Advanced Mathematics A2	5	80					2		
		4140125111	理论力学 A Theoretical Mechanics A	4.5	72					2		*
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4050024111	大学物理 B Physics B	5.5	88					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				3		
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3		
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering &	4	64	10				3		
		4140002111	材料力学 A Materials Mechanics A	5	80	8				3		
		小 计 Subtotal		40.5	664	50						
专业课程 Specialized Courses	必修课 Required Courses	4140423131	工程材料 Engineering Material	2	32	8				4		
		4140006111	测量学 Measurement Theory	3	48					4		
		4140399131	水力学 Hydraulics	4	64	8				4		
		4140065111	工程地质 A Engineering Geology A	2.5	40	4				4		
		4140074111	工程结构力学 Structural Mechanics	4	64					4		
		4140377131	港口工艺学 Port Techniques	2	32					5		
		4140379131	港口海岸水工建筑物 Harbor & Coastal Engineering Hydraulic Structure	2	32					5		

课程类别 Course Classifi-cation	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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term		
		4140382131	工程水文学 Engineering Hydrology	2	32					5		
		4140385131	河流与海岸动力学 River and Coastal Hydrodynamics	2	32					5		
		4140141111	土力学与基础工程 Soil Mechanics and Foundation Engineering	4	64	6				5		
		4140396131	水工钢结构原理与设计 Principle and Design of Hydraulic	3	48					5		
		4140397131	水工建筑物检测与健康诊断 Detection Technique of Hydraulic Structures	3	48	16				6		
		4140398131	水工结构建模与分析 Analysis and Modeling of Hydraulic Structures	2.5	40		16			6		
		4140395131	航道整治与渠化工程 Waterway Regulation & Canalization Engineering	2	32					6		
		4140091111	混凝土结构设计原理 A Design Principle of Concrete Structure A	4	64	6				6		
		4140401131	水运工程施工 Construction of Navigation Engineering	3	48					7		
		4140378131	港口规划与布置 Port Planning and Layout	2	32					7		
		4140380131	港口航道工程专业英语 Professional English of Harbor & Waterway Engineering	2	32					7		
		4140357131	水运工程经济与管理 Engineering economic and management	2	32					4		
		小 计 Subtotal		51	816	48	16					
	选修课 Elective Courses	4140068111	工程监理概论 Instruction to engineering supervision	2	32					5		
		4140118111	结构动力学 Structural Dynamics	3	48					5		
		4140394131	近海与海洋工程 Offshore and ocean Engineering	2	32					6		
		4140370131	弹性力学与有限元 Theory of Elasticity & Finite Element	3	48					5		
		4140429131	地基处理技术 Improvement Method of Foundation	2	32					6		
		4140430131	港口物流管理 Port Logistics Management	2	32					7		
		4140391131	河口与海岸演变 Estuarine and Coastal Evolution	1	16					6		
		4140133111	桥梁工程 C Bridge Engineering	4	64					7		
		4140400131	水运工程概预算 Construction Organizing and Budgeting	2	32					7		
		4140123111	结构稳定性分析 Structural Stability Analysis	2	32					6		
		4140139111	隧道工程 A Tunnel Engineering A	3	48					6		

课程类别 Course Classifi-cation	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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term		
		4140072111	工程结构抗震设计 Seismic Design of Engineering Structure	2	32					7		
		4140122111	结构实验技术 Structural Experiment Technology	2	32	8				7		
		小 计 Subtotal		30	480	8						
		修读说明：要求至少选修 14 学分。 NOTE：Minimum subtotal credits: 14.										
个性课程 Personalized Course	选修课 Elective Courses	修读说明：学生可跨专业自主选择修读全校其他专业的课程。要求至少选修 10 学分。 NOTE：Students can choose any courses from the other specialties. Minimum subtotal credits: 10.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

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	第二专业 Second Major
1060002110	军事训练 Military Training	3	1.5	1	
4100069110	电工电子实习 B Practice of Electrical Engineering & Electronics B	1	1	4	
4140180111	测量实习 B Engineering Survey Practice	2	2	4	
4140231111	认识实习 Practice of Understanding	1	1	5	
4140206111	混凝土结构设计原理课程设计 Course Design on Concrete Structure	1	1	6	
4140425131	专业实习 Practice of Specialty	1	1	6	
4140376131	港航工程综合实验 Experiment of Harbor & Waterway Engineering	2	2	7	
4140424131	毕业论文 Graduation Thesis	17	11	8	
小 计 Subtotal		28	20.5		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school.

船舶与海洋工程专业本科培养方案
Undergraduate Program for Specialty in Ship and Ocean Engineering

一、培养目标

Ⅰ Educational Objectives

以船舶与海洋工程领域技术发展和社会需求为导向，培养具有较扎实的数学、力学和船舶与海洋工程专业基础知识，了解本学科发展动态，具有解决船舶与海洋工程设计与建造技术实际问题的较强能力，具有创新求实精神、团队精神，具有国际视野和跨文化的交流、竞争与合作能力，德才兼备的专业技术人才。

The educational objectives are oriented with technology and social demands in the field of ship and ocean engineering, training students to be professional and technical persons with both ability and political integrity, who master solid basic knowledge of mathematics, mechanics and ship and ocean engineering, understand frontier developments , have strong ability to solve practical problems in design and manufacturing, have realistic and innovative spirit, team-work spirit, and sound professional ethics, have international perspectives and master the ability of cross-culture communication and cooperation.

二、毕业要求

Ⅱ Graduation Requirement

本专业毕业生应获得以下几方面的知识和能力：

1．具有人文社会科学素养、社会责任感和工程职业道德；

2．具有船舶与海洋工程专业相关数学、自然科学以及经济和管理知识；

3．具有本专业领域所必需的船舶性能、结构、设计、制造方面的专业知识和技能，了解本学科前沿及发展趋势；

4．掌握科技论文写作、文献检索、资料查询的基本方法；

5．具有自主学习能力、创新意识、实践能力和团队合作精神；

6．了解与本专业相关的职业和行业的方针、政策和法律、法规；

7．具有国际视野和跨文化的交流能力。

Knowledge and abilities that the graduates should obtain:

1. Scientific literacy of social science, social responsibility and professional ethics;

2.Mathematics, natural science, knowledge of economics and management that related to ship and ocean engineering;

3. Knowledge and skills on ship hydrodynamic performance, ship design, ship structure and ship manufacturing, frontier technology and development tendency of this discipline;

4. Basic methods of writing scientific papers, literature search and material inquiry;

5. Self-learning ability, sense of innovation, practical ability and team-work spirit;

6. Understanding of related vacations, policies, laws and rules of this discipline;

7. International perspective and cross-culture communication ability.

三、主干学科

Ⅲ Major Disciplines

船舶与海洋工程

Ship and Ocean Engineering

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：船体构造与制图、船舶静力学、船舶阻力、船舶推进、船舶运动学、船舶结构力学、船体强度与结构设计、船舶设计原理、船舶建造工艺学。

Core Courses:Ship Structure and Graphing, Ship Statics, Ship Resistance, Ship Propulsion, Ship Kinematics, ship structural mechanics, Ship Intensity and Structure Design, Principles of Ship Design, Shipbuilding technology.

专业特色课程：现代造船技术、船舶工程经济学、人机工程与船舶美学、海洋平台设计原理、海洋平台建造技术、救助与打捞。

Characteristic Courses:Modern Ship Manufacturing Mode, Ship Engineering Economics, Ergonomic principles and Ship Aesthetics, Ocean Platform Design Principle, Ocean Platform Building Technology, Rescue and Salvage Technology.

五、计划学制与学位

Ⅴ **Length of School and Degree**

修业年限：四年

Duration： Four Years

授予学位：工学学士

Degree Granted: Bachelor of Engineering

六、最低毕业学分规定

Ⅵ **Graduation Credit Criteria**

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39.5	52.5	\	21.5	\	190
选修课 Elective Courses	9	\	12.5	10	\	10	

七、课程修读指导建议

Ⅶ **Recommendations on Course Studies**

专业选修课至少修满 12.5 学分；修读第二专业必须修完本培养计划中打“*”号课程（44 学分）和毕业设计（10 学分）。

At least 12.5 credits are required when taking major courses. Students in other majors who take this program as their second majors must finish all those courses with the mark “*”(44 credits) together with the graduation thesis (10 credits).

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		2-4		
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	英语 A3	
		程序设计语言课程组(三选一，3 学分) Courses of Computer Program Design (select one out of three, Credits: 3)										
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design(C)	3	48		12			2		
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design(FORTRAN)	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design(VB)	3	48		12			2		
		小 计 Subtotal		35	736		24	64	64			
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses		全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.								
		人文社科类 Arts and Social Science Courses										
		经济管理类 Economy and Management Courses										

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		科学技术类 Science and Technology Courses										
		艺术体育类 Art and Physical Education Courses										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140160111	专业导论 Introduction to the Program	1	16					1		*
		4180017111	工程图学 B Engineering Graphics B	4	64		4			1		*
		4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2		
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4050463131	大学物理 B Physics B	5.5	88					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				3		
		4140125111	理论力学 A Theoretical Mechanics A	4.5	72					2		*
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3		
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering & Electric Technology C	4	64	10				3		
		材料力学课程组(至少取得 4 学分) Course Group of Materials Mechanics(At least 4 credits are Required)										
		4140004111	材料力学 C Materials Mechanics C	4	64	4				3		*
		4140002111	材料力学 A Materials Mechanics A	5	80	8				3		
		小 计 Subtotal		39.5	648	46	4					13.5
专业课程 Specialized Courses	必修课 Required Courses	4050053111	复变函数与积分变换 C Complex Function & Integral Transformation C	2	32					3		
		4180031111	机械设计基础 Fundamentals of Mechanical Design	3.5	56	6				3		
		4140013111	船体构造与制图 Ship Structure and Graphing	4	64					3		*
		4140436131	船舶流体力学 Ship Fluid Mechanics	4	64	6				4		
		4140017111	船舶结构力学 A Ship Structural Mechanics A	4	64					4		
		4140437131	船舶静力学 Ship Statics	3.5	56			16		4		*
		4140268121	船舶与海洋工程水动力学 Hydrodynamics of Ocean Engineering	3.5	56					5		
		4140288121	海洋结构物动力学 Offshore Structure Dynamics	2	32					5		
		4140037111	船舶阻力 Ship Resistance	2.5	40					5		*

课程类别 Course Classifi-cation	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 总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		4140266121	船舶推进 Ship Propulsion	4	64			16		5		*
		4030062111	科技英语写作 Scientific Documents Writing in English	1	16					5		
		4140035111	船舶运动学 Ship Maneuverability and Seakeeping	3	48					6		*
		4140438131	船体强度与结构设计 Ship Intensity and Structure Design	4.5	72	4		16		6		*
		4150014111	船舶动力装置 Ship Power Equipment	2	32					6		
		4140439131	船舶建造工艺学 Ship Building Technology	4.5	72	4		16		6		*
		4140440131	船舶设计原理 Principles of Ship Design	4.5	72			16		7		*
		小 计 Subtotal		52.5	840	20		80				30.5
	选修课 Elective Courses	船舶工程方向										
		4140441131	人机工程与船舶美学 Ship Aesthetics	2	32					5		
		4140011111	船舶材料与焊接 Ship Materials and Welding	2	32					5		
		4140442131	船舶工程经济学 Ship Engineering Economics	2	32					5		
		4140365131	船舶贸易与经营 Ship Trade and Business	2	32					5		
		4140422131	有限元软件应用 FEA Software Application	2	32					5		
		4140367131	船舶特种推进 Unconventional Marine Propulsion	2	32					6		
		4140063111	高性能船水动力性能优化设计 Hydrodynamic Optimal Design of High Performance Ship	2	32					6		
		4140022111	船舶设备与系统 Ship Equipment and Systems	2	32					6		
		4100005111	船舶电气 Ship Electrical Equipment	2	32					6		
		4140408131	造船机械设备与自动化 Shipbuilding Equipment and Automation	2	32	2				6		
		4140026111	船舶性能试验技术 Experimental Technology of Ship Performance	2	32					6		
		4140151111	运输船舶设计概论 Introduction to Transport Ship Design	2	32					7		
		4140156111	造船测量技术 Shipbuilding Measurement Technology	2	32	2				7		
		4140093111	计算机辅助设计制造 Computer Aided Ship Design	3	48					7		
		4140036111	船舶振动学 Ship Vibrations	2	32					7		
		4140148111	现代造船技术 Modern Ship Manufacturing Technology	2	32					7		

课程类别 Course Classifi-cation	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	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur			
		4140029111	船舶与海洋工程学科前沿 Frontier of Ship and Ocean Engineering	1	16					7		
		4140443131	Matlab 应用 MATLAB Application	2	32					7		
		4140444131	CFD 软件应用 CFD Software Application	2	32					7		
		小 计 Subtotal		38	608	4						
		修读说明：要求至少选修 12.5 学分。 NOTE：Minimum subtotal credits: 12.5.										
		海洋工程方向										
		4140446131	海洋工程项目管理 Ocean Engineering Project Management	2	32					5		
		4140447131	海洋环境载荷 Ocean Environment Loads	2	32					5		
		4140287121	海洋工程结构振动测试技术 Testing Technology of Structural Vibration	2	32					5		
		4140422131	有限元软件应用 FEA Software Application	2	32					5		
		4140450131	水声技术 Underwater Acoustic Technology	2	32					6		模块一：救助打捞
		4140451131	救助打捞 Rescue and Salvage Technology	2	32					7		
		4140088111	海洋平台建造工艺 Construction Technique of Ocean Platform	2	32					6		模块二：海工装备
		4140089111	海洋平台设计原理 Ocean Platform Design	2	32					7		
		4140453131	海工特种装备 Special Equipment of Ocean Engineering	2	32					6		模块三：建养
		4140452131	跨海工程建养技术 Construction Technology of Cross-ocean Projects	2	32					7		
		4140448131	控制系统与电气设备 Control System and Electrical Equipment	2	32					6		
		4140449131	锚泊系统与动力定位 Mooring System and Dynamic Positioning	2	32					6		
		4140445131	海洋再生能源 Ocean Renewable Energy	2	32					6		
		4140029111	船舶与海洋工程学科前沿 Frontier of Ship and Ocean Engineering	1	16					7		
		4140443131	Matlab 应用 MATLAB Application	2	32					7		
		4140444131	CFD 软件应用 CFD Software Application	2	32					7		
		4140454131	计算机辅助设计制造 Computer Aided Ship Design	3	48					7		
		小 计 Subtotal		34	544							

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		修读说明：要求至少选修 12.5 学分。建议海洋工程方向按照模块选修一组。 NOTE：Minimum subtotal credits: 12.5. Only one group is required among three modules for students of ocean engineering.										
个性课程 Personalized Course	选修课 Elective Courses	4140455131	船海结构安全与规范概论 Introduction of Safety and Standardization of Ship and Ocean Structure	2	32					6		
		小 计 Subtotal										
		修读说明：学生可跨专业自主选择修读全校其他专业的课程，建议修读以上课程。要求至少选修 10 学分。 NOTE：Students can choose any courses from the other specialties, and are especially suggested to choose the courses above. Minimum subtotal credits: 10.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

课程编号 Course Number	实践环节名称 Practice Courses Name	周数 Weeks	学分 Credits	建议修读学期 Suggested Term	第二专业 Second major
1060002111	军事训练 Military Training	3	1.5	1	
4140225111	认识实习 Practice of Understanding	1	1	3	
4100069111	电工电子实习 B Practice of Electrical Engineering & Electronics B	1	1	4	
4180114111	机械制造工程实训 C Practice of Mechanical Manufacturing Engineering C	2	2	4	
4140170111	CAD/CAM 应用 CAD/CAM Application	2	2	7(分散)	
4140238111	生产实习（含虚拟实习） Practice of Production	3	3	7	
4140335121	毕业设计 Graduation Design	17	11	8	*
小 计 Subtotal		28	21.5		10

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。通识教育选修课中要求选修《中国造船史》。

The course of *Situation & Policy*, 16 hours per term with 2 credits, is taught according to specific topics and tested at the end of the 7th term. The course will be arranged by the University's Student Development Instruction Center. The courses of science and technology culture in the category of cultural quality education courses actually include the course of *China's Shipbuilding History*.

船舶与海洋工程专业（卓越工程师班）本科培养方案
Undergraduate Program for Specialty in Ship and Ocean Engineering (Excellent Engineer Class)

一、培养目标

Ⅰ Educational Objectives

以船舶与海洋工程领域技术发展和社会需求为导向，培养具有较扎实的数学、力学和船舶与海洋工程专业基础知识，了解本学科发展动态，具有解决船舶与海洋工程设计与建造技术实际问题的较强能力，具有创新求实精神、团队精神，具有国际视野和跨文化的交流、竞争与合作能力，船舶与海洋工程领域德才兼备的应用型卓越工程师。

The educational objectives are oriented with technology and social demands in the field of ship and ocean engineering, training students to be application-oriented excellent engineers with both ability and political integrity, who master solid basic knowledge of mathematics, mechanics and ship and ocean engineering, understand frontier developments , have strong ability to solve practical problems in design and manufacturing, have realistic and innovative spirit, team-work spirit, and sound professional ethics, have international perspectives and master the ability of cross-culture communication and cooperation.

二、毕业要求

Ⅱ Graduation Requirement

毕业生应获得以下几方面的知识和能力:

1. 具有人文社会科学素养、社会责任感和工程职业道德；
2. 具有船舶与海洋工程专业相关数学、自然科学以及经济和管理知识；
3. 掌握船舶与海洋工程原理、设计制造的理论和方法，具有系统的工程实践学习经历，具备设计和实施工程实验的能力，设计过程中能够考虑经济、环境、法律、安全、健康、伦理等制约因素；
4. 了解本专业的前沿发展现状和趋势，掌握基本的创新方法，具有创新意识；
5. 掌握文献检索、资料查询及运用现代信息技术获取相关信息的基本方法；
6. 了解与本专业相关的职业和行业的方针、政策和法律、法规；
7. 对终身学习有正确的认识，具有不断学习和适应发展的能力；
8. 具有一定的组织管理能力、表达能力和人际交往能力以及在团队中发挥作用的能力，具有国际视野和跨文化的交流、竞争与合作能力。

Knowledge and abilities that the graduates should obtain:

1. Scientific literacy of social science, social responsibility and professional ethics;
2. Mathematics, natural science and knowledge of economics and management that related to naval architects;
3. Knowledge and skills about ship hydrodynamic performance, ship design, ship structure and ship manufacturing, education of systematic engineering practice; sense of consideration of economics, environment, law, safety, healthy, morality in the process of design;
4. Frontier technology and development tendency of this discipline; innovative sense and basic method about innovation;
5. Basic methods of writing scientific papers, literature search and material inquiry;
6. Understanding of related vacations, policies, laws and rules of this discipline;
7. Correct understanding of life-long learning, ability of continuous learning and ability of adaption of the development;
8. Ability of organizing and management, ability of expression, interpersonal skills and ability of

team-work, international perspective and cross-culture communication ability.

三、主干学科

Ⅲ Major Disciplines

主干学科：船舶与海洋工程

Major Disciplines: Ship and Ocean Engineering

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：船体构造与制图、船舶静力学、船舶阻力、船舶推进、船舶运动学、船舶结构力学、船体强度与结构设计、船舶设计原理、船舶建造工艺学。

Core Courses:Ship Structure and Graphing, Ship Statics, Ship Resistance, Ship Propulsion, Ship Kinematics, ship structural mechanics, Ship Intensity and Structure Design, Principles of Ship Design, Shipbuilding technology.

专业特色课程：现代造船技术、船舶工程经济学、人机工程与船舶美学、海洋平台设计原理、海洋平台建造技术。

Characteristic Courses:Modern Ship Manufacturing Mode, Ship Engineering Economics, Ergonomic principles and Ship Aesthetics, Ocean Platform Design Principle, Ocean Platform Building Technology.

五、计划学制与学位

Ⅴ Length of School and Degree

修业年限：四年

Duration: Four Years

授予学位：工学学士

Degree Granted: Bachelor of Engineering

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39.5	50	\	33.5	\	190
选修课 Elective Courses	9	\	13	\	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

学科大类选修课至少修满 2 学分；专业选修课至少修满 13 学分。

At least 2 credits are required when taking electives of basic disciplinary courses. At least 13 credits are required when taking major courses.

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		2-4		
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	英语 A3	
		程序设计语言课程组(三选一，3 学分) Courses of Computer Program Design (select one out of three, Credits: 3)										
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design(C)	3	48		12			2		
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design(FORTRAN)	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design(VB)	3	48		12			2		
		小 计 Subtotal		35	736		24	64	64			
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses		全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.								
		人文社科类 Arts and Social Science Courses										
		经济管理类 Economy and Management Courses										

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		科学技术类 Science and Technology Courses										
		艺术体育类 Art and Physical Education Courses										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140160111	专业导论 Introduction to the Program	1	16					1		
		4180017111	工程图学 B Engineering Graphics C	4	64		4			1		
		4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2		
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4050463131	大学物理 B Physics B	5.5	88					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				3		
		4140125111	理论力学 A Theoretical Mechanics A	4.5	72					2		
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3		
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering & Electric Technology C	4	64	10				3		
		材料力学课程组(至少取得 4 学分) Course Group of Materials Mechanics(At least 4 credits are Required)										
		4140004111	材料力学 C Materials Mechanics C	4	64	4				3		
		4140002111	材料力学 A Materials Mechanics A	5	80	8				3		
		小 计 Subtotal		39.5	648	46	4					
专业课程 Specialized Courses	必修课 Required Courses	4050053111	复变函数与积分变换 C Complex Function & Integral Transformation C	2	32					3		
		4180031111	机械设计基础 Fundamentals of Mechanical Design	3.5	56	6				3		
		4140013111	船体构造与制图 Ship Structure and Graphing	4	64					3		
		4140436131	船舶流体力学 Ship Fluid Mechanics	4	64	6				4		
		4140018111	船舶结构力学 B Ship Structural Mechanics B	3.5	56					4		
		4140437131	船舶静力学 Ship Statics	3.5	56			16		4		
		4140268121	船舶与海洋工程水动力学 Hydrodynamics of Ocean Engineering B	3.5	56					5		
		4140288121	海洋结构物动力学 Offshore Structure Dynamics	2	32					5		
		4140037111	船舶阻力 Ship Resistance	2.5	40					5		

课程类别 Course Classifi-cation	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 总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		4140266121	船舶推进 Ship Propulsion	4	64			16		5		
		4030062111	科技英语写作 Scientific Documents Writing in English	1	16					5		
		4140035111	船舶运动学 Ship Maneuverability and Seakeeping	3	48					6		
		4140270121	船体强度与结构设计 Ship Intensity and Structure Design	4.5	72			16		6 (企业)		
		4150014111	船舶动力装置 Ship Power Equipment	2	32					6		
		4140016111	船舶建造工艺学 B Ship Building Technology	3.5	56	4				6 (企业)		
		4140024111	船舶设计原理 B Principles of Ship Design B	3.5	56					7 (企业)		
		小 计 Subtotal		48	768	16		48				
	选修课 Elective Courses	4140441131	人机工程与船舶美学 Ship Aesthetics	2	32					5		
		4140011111	船舶材料与焊接 Ship Materials and Welding	2	32					5		
		4140442131	船舶工程经济学 Ship Engineering Economics	2	32					5		
		4140365131	船舶贸易与经营 Ship Trade and Business	2	32					5		
		4140422131	有限元软件应用 FEA Software Application	2	32					5		
		4140367131	船舶特种推进 Unconventional Marine Propulsion	2	32					6		
		4140063111	高性能船水动力性能优化设计 Hydrodynamic Optimal Design of High	2	32					6		
		4140022111	船舶设备与系统 Ship Equipment and Systems	2	32					6		
		4100005111	船舶电气 Ship Electrical Equipment	2	32					6		
		4140408131	造船机械设备与自动化 Shipbuilding Equipment and Automation	2	32	2				6		
		4140026111	船舶性能试验技术 Experimental Technology of Ship Performance	2	32					6		
		4140151111	运输船舶设计概论 Introduction to Transport Ship Design	2	32					7		
		4140156111	造船测量技术 Shipbuilding Measurement Technology	2	32	2				7		
		4140093111	计算机辅助设计制造 Computer Aided Ship Design	3	48					7		
		4140036111	船舶振动学 Ship Vibrations	2	32					7		
		4140148111	现代造船技术 Modern Ship Manufacturing Technology	2	32					7		
		4140029111	船舶与海洋工程学科前沿 Frontier of Ship and Ocean Engineering	1	16					7		

课程类别 Course Classifi-cation	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	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur			
		4140443131	Matlab 应用 MATLAB Application	2	32					7		
		4140444131	CFD 软件应用 CFD Software Application	2	32					7		
		4140456131	船舶三维数字化设计制造 Manufacturing of Ship 3D Digital Design	3	48					7		
		小 计 Subtotal		41	656	4						
		修读说明：要求至少选修 13 学分。 NOTE：Minimum subtotal credits: 13.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

课程编号 Course Number	实践环节名称 Practice Courses Name	周数 Weeks	学分 Credits	建议修读学期 Suggested Term	第二专业 Second Major
1060002111	军事训练 Military Training	3	1.5	1	
4140233111	认知实验 Experiment on Recognition	1	1	3	
4140340121	认识实习 Practice of Understanding	2	2	3（企业）	
4100069111	电工电子实习 B Practice of Electrical Engineering & Electronics B	1	1	4	
4180114111	机械制造工程实训 C Practice of Mechanical Manufacturing Engineering C	2	2	4	
4140190111	船舶性能实验(静力学，阻力） Experiment on Ship Performance (1)	1	1	5（分散）	
4140189111	船舶性能实验(推进、操纵、耐波) Experiment on Ship Performance(2)	1	1	6（分散）	
4140457131	船舶结构综合性实验 Comprehensive Experiments of Ship Structure	1	1	6（分散）	
4140458131	船舶设计制造集成系统实训 Application of CIMS for ship	4	4	7	
4140459131	船舶与海洋工程计算软件综合实训 Comprehensive Training on Ship and Ocean Engineering Calculation Software	4	4	7（分散）	
4140238111	生产实习 Practice of Production	3	3	7（企业）	
4140324121	毕业实习 Graduation Practice	2	2	8（企业）	
4140335121	毕业设计 Graduation Design	15	10	8（企业）	
小 计 Subtotal		40	33.5		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。通识教育选修课中要求选修《中国造船史》。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school. The courses of science and technology culture in the category of cultural quality education courses actually include the course of *China's Shipbuilding History*.

船舶与海洋工程专业（学硕连读班）本科培养方案
Undergraduate Program for Specialty in Ship and Ocean Engineering (Bachelor + Master Class)

一、培养目标

Ⅰ Educational Objectives

以船舶与海洋工程领域技术发展和社会需求为导向，培养具有较扎实数学、力学和船舶与海洋工程专业基础知识，了解本学科发展动态，具有解决船舶与海洋工程设计与建造技术实际问题的较强能力，具备从事本学科领域科学研究的基础与初步经验，具有创新求实精神、团队精神，具有国际视野和跨文化的交流、竞争与合作能力，德才兼备的高级技术人才。

Our educational objectives are oriented with technology and social demands in the field of ship and ocean engineering, training students to be advanced technology talented persons with both ability and political integrity, who master solid basic knowledge of mathematics, mechanics and ship and ocean engineering, understand frontier developments , have strong ability to solve practical problems in design and manufacturing, have basic knowledge and preliminary experiences for working on ship and ocean engineering, have realistic and innovative spirit, team-work spirit, and sound professional ethics, have international perspectives and master the ability of cross-culture communication and cooperation.

二、毕业要求

Ⅱ Graduation Requirement

毕业生应获得以下几方面的知识和能力:

1. 具有人文社会科学素养、社会责任感和工程职业道德；
2. 具有扎实的船舶与海洋工程专业相关数学、力学、自然科学基础；
3. 掌握船舶与海洋工程原理、设计制造的理论和方法，具有从事科学研究的初步能力；
4. 了解本专业的前沿发展现状和趋势，掌握基本的创新方法，具有创新意识；
5. 掌握文献检索、资料查询及运用现代信息技术获取相关信息的基本方法；
6. 了解与本专业相关的职业和行业的方针、政策和法律、法规；
7. 对终身学习有正确的认识，具有不断学习和适应发展的能力；
8. 具有一定的组织管理能力、表达能力和人际交往能力以及在团队中发挥作用的能力，具有国际视野和跨文化的交流、竞争与合作能力。

Knowledge and abilities that the graduates should obtain:

1. Scientific literacy of social science, social responsibility and professional ethics;
2. Mathematics, natural science and knowledge of economics and management that related to naval architects;
3. Knowledge and skills about ship hydrodynamic performance, ship design, ship structure and ship manufacturing, preliminary scientific research ability;
4. Frontier technology and development tendency of this discipline; innovative sense and basic method about innovation;
5. Basic methods of writing scientific papers, literature search and material inquiry;
6. Understanding of related vacations, policies, laws and rules of this discipline;
7. Correct understanding of life-long learning, ability of continuous learning and ability of adaption of the development;
8. Ability of organizing and management, ability of expression, interpersonal skills and ability of team-work, international perspective, cross-culture communication ability, competition ability and cooperation ability.

三、主干学科

Ⅲ Major Disciplines

船舶与海洋工程

Ship and Ocean Engineering

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：

Core Courses:

船体构造与制图、船舶静力学、船舶阻力、船舶推进、船舶运动学、船舶结构力学、船体强度与结构设计、船舶设计原理、船舶建造工艺学。

Ship Structure and Graphing, Ship Statics, Ship Resistance, Ship Propulsion, Ship Kinematics, ship structural mechanics, Ship Intensity and Structure Design, Principles of Ship Design, Shipbuilding technology.

专业特色课程：

Characteristic Courses:

现代造船技术、船舶工程经济学、人机工程与船舶美学、海洋平台设计原理、海洋平台建造技术。

Modern Ship Manufacturing Mode, Ship Engineering Economics, Ergonomic principles and Ship Aesthetics, Ocean Platform Design Principle, Ocean Platform Building Technology.

五、计划学制与学位

Ⅴ Length of School and Degree

修业年限：六年（特殊情况可延长至 8 年）

Duration: six Years（eight Years in exceptional case）

授予学位：完成本科阶段规定的学分授予工学学士学位；

完成硕士阶段规定的学分并通过硕士论文答辩授予工学硕士学位。

Degree Granted: Students will receive Bachelor of Engineering after getting requested credits.

Students will receive Master of Engineering after getting requested credits and finishing academic dissertation and oral defense.

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39.5	54.5	\	28.5	\	190
选修课 Elective Courses	9	\	13.5	\	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

学科大类选修课至少修满 2 学分；专业选修课至少修满 13.5 学分。

At least 2 credits are required when taking electives of basic disciplinary courses. At least 13.5 credits are required when taking major courses.

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		2-4		
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	英语 A3	
		程序设计语言课程组(三选一，3 学分) Courses of Computer Program Design (select one out of three, Credits: 3)										
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design(C)	3	48		12			2		
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design(FORTRAN)	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design(VB)	3	48		12			2		
		小 计 Subtotal		35	736		24	64	64			

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses		全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.								
		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										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140160111	专业导论 Introduction to the Program	1	16					1		
		4180017111	工程图学 B Engineering Graphics B	4	64		8			1		
		4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2		
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4050463131	大学物理 B Physics B	5.5	88					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				3		
		4140125111	理论力学 A Theoretical Mechanics A	4.5	72					2		
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3		
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering & Electric Technology C	4	64	10				3		
		材料力学课程组(至少取得 4 学分) Course Group of Materials Mechanics(At least 4 credits are Required)										
		4140004111	材料力学 C Materials Mechanics C	4	64	4				3		
		4140002111	材料力学 A Materials Mechanics A	5	80	8				3		
		小 计 Subtotal		39.5	648	46	4					
专业课程 Specialized Courses	必修课 Required Courses	4050053111	复变函数与积分变换 C Complex Function & Integral Transformation C	2	32					3		
		4180031111	机械设计基础 Fundamentals of Mechanical Design	3.5	56	6				3		
		4140013111	船体构造与制图 Ship Structure and Graphing	4	64					3		
		4140436131	船舶流体力学 Ship Fluid Mechanics	4	64	6				4		
		4140017111	船舶结构力学 A Ship Structural Mechanics A	4	64					4		
		4140264121	船舶静力学 Ship Statics	4	64	2		16		4		

课程类别 Course Classifi-cation	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	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur			
		4140268121	船舶与海洋工程水动力学 Hydrodynamics of Ocean Engineering	3.5	56					5		
		4030062111	科技英语写作 Scientific Documents Writing in English	1	16					5		
		4140288121	海洋结构物动力学 Offshore Structure Dynamics	2	32					5		
		4140037111	船舶阻力 Ship Resistance	2.5	40	4				5		
		4140266121	船舶推进 Ship Propulsion	4	64	4		16		5		
		4140035111	船舶运动学 Ship Maneuverability and Seakeeping	3	48	4				6		
		4140323121	船体强度与结构设计 Ship Intensity and Structure Design	5	80	8		16		6		
		4150014111	船舶动力装置 Ship Power Equipment	2	32					6		
		4140439131	船舶建造工艺学 Ship Building Technology	4.5	72	4		16		6		
		4140440131	船舶设计原理 Principles of Ship Design	4.5	72			16		7		
		4140168111	现代船舶设计制造前沿技术 Frontier of technology of modern ship design	1	16					7		
		小 计 Subtotal		54.5	840	38		80				
	选修课 Elective Courses	4140441131	人机工程与船舶美学 Ship Aesthetics	2	32					5		
		4140011111	船舶材料与焊接 Ship Materials and Welding	2	32					5		
		4140442131	船舶工程经济学（双语） Ship Engineering Economics	2	32					5		
		4140365131	船舶贸易与经营 Ship Trade and Business	2	32					5		
		4140422131	有限元软件应用 FEA Software Application	2	32					5		
		4140367131	船舶特种推进 Unconventional Marine Propulsion	2	32					6		
		4140063111	高性能船水动力性能优化设计 Hydrodynamic Optimal Design of High	2	32					6		
		4140022111	船舶设备与系统 Ship Equipment and Systems	2	32					6		
		4100005111	船舶电气 Ship Electrical Equipment	2	32					6		
		4140408131	造船机械设备与自动化 Shipbuilding Equipment and Automation	2	32	2				6		
		4140026111	船舶性能试验技术 Experimental Technology of Ship Performance	2	32					6		
		4140151111	运输船舶设计概论 Introduction to Transport Ship Design	2	32					7		
		4140156111	造船测量技术 Shipbuilding Measurement Technology	2	32	2				7		

课程类别 Course Classifi-cation	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 总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		4140093111	计算机辅助设计制造 Computer Aided Ship Design	3	48					7		
		4140036111	船舶振动学 Ship Vibrations	2	32					7		
		4140148111	现代造船技术 Modern Ship Manufacturing Technology	2	32					7		
		4140029111	船舶与海洋工程学科前沿 Frontier of Ship and Ocean Engineering	1	16					7		
		4140362131	Matlab 在船舶与海洋工程中的应用 MATLAB Application	2	32					7		
		4140361131	CFD 在船舶与海洋工程中的应用 CFD Software Application	2	32					7		
		小 计 Subtotal		38	608	4						
		修读说明：要求至少选修 13.5 学分。 NOTE：Minimum subtotal credits: 13.5.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

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	第二专业 Second Major
1060002111	军事训练 Military Training	3	1.5	1	
4140234111	认知实验 Experiment on Recognition	1	1	2	
4140225111	认识实习 Practice of Understanding	1	1	3	
4100069111	电工电子实习 B Practice of Electrical Engineering & Electronics B	1	1	4	
4180114111	机械制造工程实训 C Practice of Mechanical Manufacturing Engineering C	2	2	4	
4140460131	船舶与海洋工程计算软件综合实训 Comprehensive Training on Ship and Ocean Engineering Calculation Software	8	8	7（分散）	
4140238111	生产实习 Practice of Production	3	3	7	
4140335121	毕业设计 Graduation Design	17	11	8	
小 计 Subtotal		35	28.5		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。通识教育选修课中要求选修《中国造船史》。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school. The courses of science and technology culture in the category of cultural quality education courses actually include the course of *China's Shipbuilding History*.

交通运输专业（卓越工程师班）本科培养方案
Undergraduate Program for Specialty in Transportation (Excellent Engineer Class)

一、业务培养目标

Ⅰ Educational Objectives

培养具备交通运输组织与决策、现代港口与国际航运管理、交通运输规划及现代物流管理等理论基础和技能，创新能力强，适应经济社会发展需要，能在国家及各省、市交通运输管理部门、交通运输企事业单位从事交通运输组织、指挥、决策、交通运输企业生产与经营管理、物流管理及研究的高质量工程技术及管理人才。

This program is designed to train advanced technical and managerial talents with basic knowledge and abilities in transportation organizing and decision-making, modern port and international shipping management, transportation planning and logistics management. On these grounds, the talents are able to engage in organizing, commanding, decision-making, and operation management in state, provincial and municipal transportation departments and transport logistics enterprise and institutions.

二、业务培养要求

Ⅱ Educational Requirements

学生主要学习交通运输组织、现代港口与国际航运、交通运输规划、现代物流等方面的基本理论和基本知识，接受交通运输生产、经营、商务、信息等方面的知识和技能的专门训练，具有较强的运用专业知识解决实际问题的能力。

毕业生应获得以下几方面的知识和能力：

1. 具有较扎实的自然科学基础，了解当代科学技术的主要方向和应用前景；
2. 熟悉国家关于交通运输方面的方针、政策和法规，并了解现代交通运输的发展方向；
3. 掌握计算机在交通运输管理、交通规划和工程设计中应用的基本技术；
4. 具有交通运输组织指挥、交通运输企业生产与经营、交通运输规划、交通安全工程、交通工程项目管理的能力；
5. 掌握文献检索资料查询的基本方法，具有初步的科学研究和实际工作能力。

Students majoring in transportation will mainly study basic theories and knowledge on optimization of transportation organizing and decision-making, modern port and international shipping management, transportation planning and logistics management. They will acquire necessary training on management of transport operation, business, technology and information, and basic ability of adopting management and decision-making techniques to organize transport operation effectively for the purpose of optimum social and economic benefits.

Graduates are required to obtain the following knowledge and abilities:

1. Have built a relatively solid foundation of natural science, understood the main direction and application prospect of contemporary science and technology;

2. Have got familiar with the guidelines, policies and regulations about traffic and transportation, and understood the development direction of modern traffic and transportation;

3. Have mastered the basic skills of computer application knowledge in traffic and transportation management, traffic planning and engineering design;

4. Have being equipped with the traffic and transportation organization and direction ability, traffic and transportation enterprise production and operation ability; transportation planning ability, traffic and transportation safety engineering ability, traffic engineering project management ability;

5. Have mastered the basic literature retrieval and material inquiry methods, have preliminary scientific research and actual work ability.

三、主干学科

Ⅲ Major Disciplines

主干学科：交通运输工程

Major Disciplines: Transportation Engineering

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：港口装卸工艺、交通运输经济分析、现代物流组织与技术、交通运输规划概论、船舶货运技术、港口企业运作管理、船舶营运组织、国际集装箱多式联运、国际航运业务与水运商务、公路运输组织学、交通运输安全工程

Core Courses: Port Handling Techniques、Analysis on Transport Economics、Logistic Organization and Technology、Introduction to Transportation Planning、Ship Stowage Techniques、Port Operational Management、Shipping Operation and Organization、Multimodal Transport、Shipping Business、Road Transport organization、Traffic and Transportation Safety

专业特色课程：港口装卸工艺，船舶营运组织，港口企业运作管理，国际航运业务与水运商务，交通运输经济分析，物流运营与技术

Characteristic Courses: Port Handling Techniques、Shipping Operation and Organization、Port Operational Management、Shipping Business、Analysis on Transport Economics、Logistics Operation and Technology.

五、计划学制与学位

Ⅴ Length of School and Degree

修业年限：四年

Duration： Four Years

授予学位：工学学士

Degree Granted: Bachelor of Engineering

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39	36.5	\	39.5	\	190
s 选修课 Elective Courses	9	6	15	\	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		2-4		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	大学英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	大学英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	大学英语 A3	
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design (C Language)	3	48		12			2		
		小　计 Subtotal		35	736		24	64				
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses		全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.								
		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										

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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4140248111	专业导论 Introduction to the Program	1	16					1		
		4180017111	工程图学 B Engineering Graphics B	4	64		4			1		
		4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2	高等数学 A 上	
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4140126111	理论力学 B Theoretical Mechanics B	3	48					2		
		4050024111	大学物理 C Physics C	4.5	72					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				2	大学物理 C	
		4050254111	运筹学 Operational Research	3	48					3		
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3	48					3		
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering &	4	64	10				3		
		4140006111	测量学 Measurement Theory	3	48	6				3		
		小 计 Subtotal		39	640	48	4					
	选修课 Elective Courses	4140115111	交通运输工程经济 Engineering Economics of Transportation	2	32					3		
		4140113111	交通运输工程概论 A An Introduction to Transportation Engineering A	2	32					3		
		4140124111	可持续发展的交通运输 Sustainable Transportation	2	32					3		
		4140405131	虚拟运输企业商务管理 Virtual transport enterprise business management	2	32					3		
		4140107111	交通信息与数据库技术 Traffic Information and Database Technique	2	32					3		
		4140136111	商务函电 Business Correspondence	2	32					5		
		4140143111	土木工程施工 B Construction of Civil Engineering B	2	32					3		
		4140052111	道桥景观设计 Landscape Design for Highway and Bridge	2	32					3		
		4140083111	轨道工程 Rail Engineering	2	32					6		
		小 计 Subtotal		18	288							
		修读说明：要求至少选修 6 学分。 NOTE：Minimum subtotal credits: 6.										

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	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur			
专业课程 Specialized Courses	必修课 Required Courses	4140417131	交通运输设备概论 Introduction to Transportation Equipment	1.5	24					4		
		4140411131	船舶货运技术 Ship Stowage Techniques	2	32					4		
		4140387131	交通管理信息系统 Management Information System for Transportation	2.5	40					4		
		4140390131	交通运输地理与布局 Transport Geography and Layout	2	32					4		
		4140421131	港口与航道工程学 Harbor and Waterway Engineering	2	32					5		
		4140086111	国际航运业务与水运商务 Shipping Business	3	48					5		
		4140404131	现代物流组织与技术 Logistic Organization and Technology	2	32					5		
		4140424131	公路运输组织学 Road Transport organization	2	32					5		
		4140461131	交通运输规划概论 Introduction to Transportation Planning	1.5	24					5		
		4140283121	国际航运与港口经济技术分析 Economic and Technological Analysis for	3.5	56					6		
		4140462131	交通运输经济分析 Analysis on Transport Economics	2	32					6		
		4140463131	物流系统规划与设计 Logistics System Planning and Design	1.5	24					6		
		4140464131	运输代理理论与实务 Theory and Practice of Freight Forwarding	1.5	24					6		
		4140465131	港口装卸工艺 Port Handling Techniques	2.5	40					5		
		4140466131	港口企业运作管理 Port Operational Management	2.5	40					6		
		4140467131	船舶营运组织 Shipping Operation and Organization	2.5	40					6		
		4140209131	交通运输法规 Transport Laws and Regulations	2	32					6		
		小　计　Subtotal		36.5	584							
	选修课 Elective Courses	4140033111	船舶原理 C ShipTheory C	2	32					4		
		4140105111	交通投融资管理 Transport Investment and Financing	2	32					5		
		4140407131	运输管理学 Transportation Management	3	48					5		
		4140138111	水运管理技术 Techniques of Waterborne Management	2	32					5		
		4140384131	国际集装箱运输与多式联运 Multimodal Transport	2	32					5		
		4140296121	交通港站与枢纽设计 Traffic Hub and Terminal design	3	48			16		6		
		4140306121	交通运输仿真技术 Simulation Techniques of Transportation	3	48		16			6		

课程类别 Course Classifi-cation	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	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur			
		4170065111	会计学 B Accounting B	2	32					6		
		4170014111	财务管理 B Financial Management B	2	32					6		
		4140098111	交通工程项目概预算 Budgeting of Traffic Engineering Project	2	32					6		
		4140257111	交通运输安全工程 Traffic and Transportation Safety	2	32					6		
		4140421131	现代物流学 Modern Logistics	2.5	40		8			5		
		4140161111	仓储与配送实务 Warehousing and Distribution Practices	2	32					6		
		4140452121	供应链管理技术 Supply Chain Management Techniques	2	32					6		
		小 计 Subtotal		31.5	504		24	16				
		修读说明：要求至少选修 15 学分。 NOTE：Minimum subtotal credits: 15.										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

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	第二专业 Second Major
1060002111	军事训练 Military Training	3	1.5	1	
4140208111	基础强化训练 Foundation Strengthening Training	1	1	4(暑期)	
4140226111	认识实习 Practice of Understanding	1	1	5	
4140181111	船舶货运技术课程设计 Course Design on Ship Storage Techniques	1.5	1.5	4	
4140203111	管理信息系统课程设计 Course Design on Information Management	1.5	1.5	4	
4140381131	港口装卸工艺课程设计 Course Design on Port Handling Techniques	1.5	1.5	5	
4140369131	船型技术经济论证课程设计 Course Design on Ship Formulation	1.5	1.5	6	
4140329121	交通调查实训 Practice of Traffic Investigation	1.5	1.5	7	
4140221111	能力拓展训练 Ability Development Training	1	1	6（暑假）	
4140426131	生产实习 Practice of Production	2	2	7	
4140355111	集装箱港口生产组织模拟仿真实验 Simulation Experiment on Container Port Operation	1.5	1.5	7	

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	第二专业 Second Major
4140315121	水路运输管理模拟综合实验 Integrated Simulation Experiment on Water Transport Management	1	1	7	
4140383131	公路运输管理模拟综合实验 Integrated Simulation Experiment on Road Transport Management	1	1	7	
4140242111	物流管理模拟综合实验 Integrated Simulation Experiment of Logistics Management	1	1	7	
4140327121	岗位实习 Internship	10	10	7（企业）	
4140330121	毕业论文 Graduation Thesis	17	11	8	
小　　计　Subtotal		47	39.5		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school.

道路桥梁与渡河工程专业（卓越工程师班）本科培养方案
Undergraduate Program for Specialty in Road, Bridge and River-crossing Engineering (Excellent Engineer Class)

一、业务培养目标

Ⅰ Educational Objectives

以道路桥梁与渡河工程领域技术发展和社会需求为导向，以培养德才兼备、适应能力强、实干精神强、创新意识强的人才为宗旨，贯彻“能力培养，特色鲜明”的指导思想，立足我校交通运输工程的特色优势，整合优质资源，加强行业合作，构建创新型工程人才培养的新模式，实现从知识传授向创新能力、实践能力、管理能力培养的转变，培养适应我国社会经济发展需要、掌握现代道路桥梁工程规划、设计、施工及管理知识和技能的道桥工程领域应用型卓越工程师。

Our educational objectives are oriented with technology and social demands in the field of road and bridge Engineering; taking talents training with both ability and political integrity, strong adaptation, solid work spirit, sense of innovation as purposes; implementing the thought of “ability training, bright characteristic”; taking characteristic advantages of our major; integrating the high quality resources; Strengthening the cooperation with other institutions; establishing the new pattern of innovative education; realizing the transformation from knowledge imparting to abilities training with innovation, practice and management; cultivating application-oriented distinguished engineers who can meet the need of the present social and economic development, master the skills of modern design and construction technology in the field of road and bridge Engineering.

二、业务培养要求

Ⅱ Educational Requirement

主要学习力学、道路工程、桥梁工程及渡河工程等方面的基本理论和基本知识，接受课程设计、试验仪器操作和现场实习等方面的基本训练，获得工程规划、结构设计与施工等方面的基本技术，具备进行道路桥梁与渡河工程设计、试验、施工、管理和研究的卓越能力。

Students majoring in road, bridge and river-crossing engineering mainly study basic theories and knowledge of mechanics as well as road, bridge and river-crossing engineering. They will be trained on course design, experimental equipment operation and field study. The students have to master basic ability of project planning, engineering material, and structural analysis and design, and the preliminary ability of project designing, testing, construction, management and research.

毕业生应获得以下几方面的知识和能力：

1．具有较扎实的自然科学基础，较好的人文、艺术和社会科学基础及正确运用本国语言、文字的表达能力；

2．较系统地掌握本专业领域宽广的技术理论基础知识，掌握计算机在工程设计中应用的基本技术；

3．具有较强的解决与道路桥梁与渡河工程有关的工程技术问题的理论分析能力与实验技术；

4．具有较强的计算机和外语应用能力；

5．具有较强的自学能力、创新意识和较高的综合素质。

1. To possess solid foundation of natural science, humanity, art and social science, as well as the expression ability by native language and words.

2. To systematically master extensive basic knowledge of technology and theory, and master the basic technology of computer applications in engineering design.

3. To possess advanced experimental technology and theoretical analysis ability for solve engineering technique problems related to road, bridge and river-crossing engineering.

4. To possess advanced ability to apply computer technique and foreign languages.
5. To possess advanced self-study ability, innovative consciousness and comprehensive qualities.

三、主干学科

Ⅲ Major Disciplines

主干学科：交通运输工程、土木工程

Major Disciplines: Transportation and Civil Engineering

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：工程地质、结构力学、土力学、基础工程、道路建筑材料、测量学、混凝土结构、钢结构、道路勘测设计、路基路面工程、桥梁工程

Core Courses: Engineering Geology, Structure Mechanics, Soil Mechanics, Foundation Engineering, Road Construction Materials, Concrete Structures Theory, Steel Structures, Highway Survey and Design, Subgrade and Pavement Engineering, Bridge Engineering.

专业特色课程：涉外工程、轨道工程、浮桥工程

Characteristic Courses: Overseas civil engineering, Rail Engineering, pontoon engineering

五、计划学制与学位

Ⅴ Length of School and Degree

修业年限：四年

Duration： Four Years

授予学位：工学学士

Degree Granted: Bachelor of Engineer

六、最低毕业学分规定

Ⅵ Graduation Credit Criteria

课程类别 / 课程性质	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	个性课程 Personalized Course	集中性实践 Practice Courses	课外学分 Study Credit after Class	总学分 Total Credits
必修课 Required Courses	35	39	43	\	33	\	190
选修课 Elective Courses	9	6	15	\	\	10	

七、课程修读指导建议

Ⅶ Recommendations on Course Studies

八、理论教学建议进程表

Ⅷ 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 总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
通识课程 Public Basic Courses	必修课 Required Courses	4220001111	思想道德修养与法律基础 Morals, Ethics and Fundamentals of Law	3	48			8		1-6		
		4220002111	中国近现代史纲要 Outline of Contemporary and Modern Chinese History	2	32					1-6		
		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		1-6		
		4220005111	马克思主义基本原理 Marxism Philosophy	3	48			8		1-6		
		1060003131	军事理论 Military Theory	1	32			16		1		
		4210001111	体育 1 Physical Education Ⅰ	1	32					1		
		4210002111	体育 2 Physical Education Ⅱ	1	32					2	体育 1	
		4210003111	体育 3 Physical Education Ⅲ	1	32					3	体育 2	
		4210004111	体育 4 Physical Education Ⅳ	1	32					4	体育 3	
		1050001131	心理健康教育 Mental Health Education	1	16					1		
		4030002111	大学英语 A1 College English A 1	3	64				16	1		
		4030003111	大学英语 A2 College English A Ⅱ	3	64				16	2	大学英语 A1	
		4030004111	大学英语 A3 College English A Ⅲ	3	64				16	3	大学英语 A2	
		4030005111	大学英语 A4 College English A Ⅳ	3	64				16	4	大学英语 A3	
		4120017111	大学计算机基础 Foundation of Computer	2	32		12			1		
		程序设计语言课程组(三选一，3 学分)										
		4120023111	计算机程序设计基础(C 语言) Fundamentals of Computer Program Design(C)	3	48		12			2		
		4120024111	计算机程序设计基础(FORTRAN 语言) Fundamentals of Computer Program Design(FORTRAN)	3	48		12			2		
		4120025111	计算机程序设计基础(VB 语言) Fundamentals of Computer Program Design(VB)	3	48		12			2		
		小　计 Subtotal		35	736		24	64	64			
	选修课 Elective Courses	创新创业类 Innovation and Entrepreneurship Courses		全校学生要求至少取得 9 学分，建议在每个类别中分别至少选修一门课程。 All students are required to obtain at least nine credits, and suggested to select at least one course in five categories respectively.								
		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										

课程类别 Course Classifi-cation	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 总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term	先修课程 Prerequisite Course	第二专业 Second Major
		艺术体育类 Art and Physical Education Courses										
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4050063111	高等数学 A 上 Advanced Mathematics A1	5	80					1		
		4050064111	高等数学 A 下 Advanced Mathematics A2	5	80					2	高等数学 A 上	
		4050024111	大学物理 C Physics C	4.5	72					2		
		4180017111	工程图学 B Engineering Graphics B	4.0	64		4			1		
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4050254111	运筹学 Operational Research	3	48					3	线性代数	
		4050224111	物理实验 B Physics Lab. B	1.0	32	32				2	大学物理 C	
		4050058111	概率论与数理统计 B Probability and Mathematical Statistics B	3.0	48					3		
		4140126111	理论力学 B Theoretical Mechanics B	3	48					2	高等数学 A 上	
		4100012111	电工与电子技术基础 C Fundamentals of Electrical Engineering &	4.0	64	10				3		
		4140006111	测量学 Measurement Theory	3.0	48	6				3		
		4140248111	专业导论 Introduction to the Program	1.0	16					1		
		小 计 Subtotal		39	640	48	4					
	选修课 Elective Courses	4140115111	交通运输工程经济 Engineering Economics of Transportation	2	32					3		
		4140113111	交通运输工程概论 A An Introduction to Transportation Engineering A	2	32					3		
		4140124111	可持续发展的交通运输 Sustainable Transportation	2	32					3		
		4180215131	虚拟运输企业商务管理 Virtual Transport Enterprise Business Management	2	32					3		
		4140107111	交通信息与数据库技术 Traffic Information and Database Technique	2	32					3		
		4140136111	商务函电 Business Correspondence	2	32					3		
		4140143111	土木工程施工 B Construction of Civil Engineering B	2	32					3		
		4140052111	道桥景观设计 Landscape Design for Highway and Bridge	2	32					3		
		4140083111	轨道工程 Rail Engineering	2	32					3		
		小 计 Subtotal		18	288	6						
		修读说明：要求至少选修 6 学分。 NOTE：Minimum subtotal credits:6										

课程类别 Course Classifi-cation	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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term		
专业课程 Specialized Courses	必修课 Required Courses	4140004111	材料力学 C Materials Mechanics C	4	64	4				4	高等数学 A 下	
		4140065111	工程地质 A Engineering Geology A	2.5	40	4				4	测量学	
		4140043111	道路建筑材料 A Road Construction Materials A	3	48					4	材料力学 C	
		4140049111	道路勘测设计 A Highway Survey and Design A	4	64					4	测量学	
		4140120111	结构力学 B Structure Mechanics B	5	80					5	材料力学 C	
		4140090111	混凝土结构 Concrete Structures Theory Structural	4	64					5	道路建筑材料 A	
		4140141111	土力学 A Soil Mechanics A	3.5	56	6				5	材料力学 C	
		4140131111	桥涵水文 A Hydrology of Bridge and Culvert A	2	32					5	概率论与数理统计 B	
		4140055111	钢结构 Steel Structures	2	32					6	结构力学 B	
		4140092111	基础工程 A Infrastructure Engineering A	2.5	40					6	结构力学 B	
		4140415131	路基路面工程 A Subgrade and Pavement Engineering A	4	64	6				6	道路建筑材料 A	
		4140132111	桥梁工程 A Bridge Engineering A	4.5	72					6	结构力学 B /混凝土结构	
		4140137111	公路工程施工组织设计与概预算 Construction Organizing and Budgeting	2	32					7 (企业)	路基路面工程	
		小 计 Subtotal		43	688	20						
	选修课 Elective Courses	4140134111	桥梁结构电算 Structural analysis of Bridge	2.5	40		24			6	结构力学 B	
		4140042111	道路工程计算机辅助设计 Highway CAD	2.5	40		24			6	道路勘测设计 A	
		4140068111	公路工程监理 Engineering Supervision	2	32					6		
		4140057111	钢桥 Steel Bridges	2	32					7	桥梁工程 A	
		4140164111	大跨度桥梁 Long-Span Bridges design and construction	2	32					7	桥梁工程 A	
		4140275121	浮桥工程 pontoon engineering	2	32					7	桥涵水文 A 桥梁工程 A	
		4140135111	桥梁施工技术 Bridge Constructions	2.5	40					7 (企业)	桥梁工程 A	
		4140050111	道路施工技术 Construction of Highway	2.5	40					7 (企业)	路基路面工程 A	
		4140313121	涉外工程 Overseas civil engineering	2	32					7 (企业)	公路工程施工组织设计与概预算	
		4140140111	地下工程及施工控制技术 Underground Engineering and Construction	2.5	40					7 (企业)	工程地质 A/结构力学 B	
		小 计 Subtotal		22.5	360	0	32	0	0			

课程类别 Course Classifi-cation	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						先修课程 Prerequisite Course	第二专业 Second Major
					总学时 Tot hrs.	实验 Exp.	上机 Ope-ration	实践 Prac-tice	课外 Extra-cur	建议修读学期 Suggested Term		
		修读说明：要求至少选修 15 学分 NOTE：Minimum subtotal credits:15										

九、集中性实践教学环节建议进程表

Ⅸ Practice Schedule

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	第二专业 Second Major
1060002111	军事训练 Military Training	3	1.5	1	
4140425131	认识实习 Practice of Recognition	0.5	0.5	4(企业)	
4140198111	地质实习 Geology Practice	1	1	4(企业)	
4140180111	测量实习 B Survey Practice B	2	2	4(企业)	
4140210111	建筑材料综合实验 Integrated Experiments of Construction Materials	1	1	4(分散)	
4140373131	道路勘测设计课程设计 Course Design on Road Survey Design	1	1	5	
4140196111	道路勘测实习 Road Survey Practice	3	3	5(企业)	
4140410131	混凝土结构课程设计 Course Design on Concrete Structure	1	1	5	
4140419131	桥梁工程——桥梁方案课程设计 Course Design on Bridge Scheme of Bridge	1	1	6	
4140207111	基础工程课程设计 Course Design on Foundation Engineering	1	1	6	
4140418131	桥梁工程——结构计算课程设计 Course Design on Bridge Structural Computation	1	1	7	
4140199111	钢结构课程设计 Course Design on Steel Structure	1	1	7	
4140416131	路基路面工程课程设计 Course Design on Subgrade and Pavement Engineering	1	1	7	
4140431131	岗位实习 Internship	6	6	7(企业)	
4070175111	毕业设计（论文） Graduation Thesis	17	11	8(企业)	
小　　计　Subtotal		40.5	33		

十、其它要求

Ⅹ Other Demands

《形势与政策》课程，平均每学期 16 学时，一般按专题进行，在第七学期末考核，计 2 个课外学分，具体由学校学生发展指导中心负责组织落实。

Situation & Policy, a 16 hours/term with 2 credits course, is taught according to topics and tested at the end of the 7th term . The course will be arranged by the University Students' Affairs' Department in each school.