

通信工程专业培养方案

Undergraduate Program of Communication Engineering

I. 专业介绍 Introduction

通信工程专业起源于上个世纪五十年代创办的“无线电技术专业”，本专业具有现代通信技术与轨道/智能交通相结合的鲜明特色，有信息与通信工程一级学科博士授权点、博士后流动站作为支撑，是国家级一流专业建设点、国家级特色专业、四川省品牌专业，2010 起连续被中国科学评价研究中心评为 A+类专业。

The communication engineering major can be dated back to the radio technology major founded in 1950s. It is highlighted by the interdisciplinary characteristics of the modern communication technology and the railway/intelligent traffic & transportation. With the doctor authorization point of first level discipline of information and communication engineering and the postdoctoral research station, our major is a national first-class major construction point, a national featured specialty of China, a brand specialty of Sichuan province, ranking the Top A+ level in Chinese university specialty evaluation since 2010.

专业代码: 080703

Program Code: 080703

专业名称: 通信工程

Program Name: Communication Engineering

II. 培养目标 Objectives

我校通信工程专业立足于培养德智体美劳全面发展的社会主义建设者和接班人，培养的人才能够适应国民经济与科技发展需求，具备科学素养，职业道德和人文素养；具有强烈的社会责任感；具有应用通信领域理论基础和专业知识解决科学研究或工程技术相关问题的能力；具备在信息与通信相关领域跟踪、学习、应用新知识、新技术的能力；具有一定的国际视野和创新能力，能够成为在信息与通信工程领域从事技术研究、产品开发、技术管理、工程设计，运营维护、教学科研等工作的高级专业技术骨干或管理骨干。

The major of communication engineering in our university aims at cultivating socialist builders and successors with all-around development of moral, intellectual, physical, aesthetics and labor education. The graduates should be able to adapt to the needs of national economical and scientific and technological development; have good scientific literacy, good professional ethics and humanistic qualities; have a strong sense of social responsibility; have the ability to apply the theoretical basis and professional knowledge to solve related scientific research or engineering problems in the field of communications; have the ability to track, learn, apply new knowledge and new technologies in the field of information and communications; have a certain international vision and innovative ability, and be able to become senior professional technical backbones or

management backbones for technical investigation, product development, technical management, engineering design, operation & maintenance, teaching and research in the field of information and communication engineering.

毕业生经过 5 年实践锻炼, 能够达到以下目标:

After practicing, graduates can achieve the following four objectives:

(1) 熟悉通信职业相关的国家及行业法律法规, 具有社会伦理、环境、安全等社会意识和责任感, 遵守职业道德和规范, 适应团队工作环境。

(1) Familiar with national and industrial laws and regulations in the field of communications, with social ethics, environment, safety and other social awareness and sense of responsibility, comply with professional ethics and norms, and adapt to the team work environment.

(2) 针对实际需求, 能运用自然科学、工程基础和通信专业知识对通信领域复杂工程问题进行分析, 研究解决方案, 承担通信系统的设计、开发、应用与管理任务。

(2) According to practical needs, can apply natural science, engineering fundamentals and communication engineering expertise to analyze and investigate the solutions to complex engineering problems in the communication field, and undertake the tasks of design, development, application and management of communication systems.

(3) 有多学科背景下的组织协调能力, 能与业界同行、专业客户和公众进行有效沟通。

(3) Have the ability of organization and coordination in a multidisciplinary context, and be able to communicate effectively with industry peers, professional clients and the public.

(4) 具有终身学习能力, 能适应社会、科技和职业发展的需求。

(4) With lifelong learning ability, can adapt to the needs of social, technological and professional development.

III. 毕业要求 Graduation Requirements

通信工程专业实行弹性学制, 学制 4-6 年, 允许学生在取得规定的 160 学分后提前毕业, 也允许延长学习年限, 但一般不超过六年。

The major of communication engineering implements an flexible academic system with 4-6 years. Students are allowed to graduate in advance after obtaining the required 160 credits. It is also allowed to extend the length of study, but generally does not exceed six years.

学生修完本专业培养计划规定的课程及教学实践环节, 取得规定的学分, 德、智、体考核合格, 总学分不少于 160 学分, 满足以下毕业要求, 按照《中华人民共和国学位条例》规定的条件授予工学学士学位。

In accordance with the "Degree Regulations of People's Republic of China", students will be awarded to a bachelor's degree in engineering after achieving the following goals: completing the courses and practice parts specified in the professional talent cultivation program, obtaining not less than the required 160 credits, passing the moral, intellectual and physical examinations, and meeting the following graduation requirements.

对于本专业的学生, 毕业要求包括如下 12 项基本要求:

For students in this major, the graduation requirements include the following 12 items:

1. 工程知识: 掌握从事信息与通信领域工作所需要的数学、自然科学、工程基础知识, 具有信号与信息处理、电磁场与电磁波、信息与通信系统等专业知识, 并能够运用这些知识

解决信息与通信领域复杂工程问题。

1.Engineering Knowledge: Master the knowledge of mathematics, natural science, and engineering fundamentals required for work in the area of information and communications, with expertise in signal and information processing, electromagnetic fields and waves, information and communication systems, etc., and be able to apply these knowledge to solve complex engineering problems in the area of information and communications.

2.问题分析：能够应用数学、自然科学和工程科学的基本原理，通过文献检索与资料查询获取相关信息，识别、表达与分析信息通信领域复杂工程问题，获得有效结论。

2.Problem Analysis: Ability to apply the first principles of mathematics, natural sciences, and engineering sciences to identify, formulate, and analyze complex engineering problems in the area of information and communications; and to reach substantiated conclusions through literature research.

3.设计/开发解决方案：能够设计针对信息与通信领域复杂工程问题的解决方案，开发满足特定需求的通信系统、软硬件模块，在设计环节体现创新意识，考虑社会、健康、安全、法律、文化以及环境等因素的影响。

3.Design/development of solutions: Ability to design solutions for complex communication engineering problems, and to develop communication systems, or hardware and software modules that meet specified needs with sense of innovation and with appropriate considerations for society, health, safety, law, culture, environment, etc.

4.研究：具有基于科学原理并采用科学方法对信息与通信系统中复杂工程问题进行研究的能力，包括设计与实施实验、分析与解释数据、并通过信息综合得到合理有效结论的能力。

4.Investigation: Ability to conduct investigations of complex problems in information and communication systems based on scientific principles and methods including design and implement of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

5.使用现代工具：能够选择与使用恰当的技术、资源、开发环境或开发相关工具，对信息与通信领域复杂工程问题进行模拟和预测，并能够分析和理解其局限性。

5.Modern Tool Usage: Ability to select and use appropriate technologies, resources, development environments or to develop related tools to simulate and predict complex engineering problems in the information and communications area with an understanding of the limitations.

6.工程与社会：能够基于信息与通信工程相关背景知识，合理分析和评价通信工程实践和复杂工程问题解决方案对社会、健康、安全、法律以及文化的影响，理解因实施解决方案可能产生的后果及应承担的责任。

6.The Engineer and Society: Ability to apply reasoning informed by information and communication engineering contextual knowledge to assess societal, health, safety, legal and cultural issues and the possible consequent responsibilities relevant to communication engineering practice and solutions to complex engineering problems.

7.环境和可持续发展：了解信息与通信产业有关环境保护和可持续发展等方面的方针、政策和法律、法规，在信息通信领域复杂工程问题解决方案的设计、实现过程及系统运行中，理解和评价其对环境、社会可持续发展的影响。

7. Environment and Sustainability: Understand the guidelines, policies, laws and regulations on environmental protection and sustainable development in the information and communication

industry, and understand and evaluate the sustainability and impact of the design, implementation process and system operation of complex information and communication engineering problem solutions in societal and environmental contexts.

8.职业规范: 具有人文社会科学素养、社会责任感, 具备健康的身体和良好的心理素质, 能够在信息与通信工程实践中理解并遵守工程职业道德和规范, 具备正确履行自己责任的能力。

8.Ethics: With humanities and social science literacy, social responsibility, healthy body and good psychological quality, be able to understand and commit to engineering professional ethics and norms in information and communication engineering practice, and have the ability to properly fulfill their responsibilities.

9.个人和团队: 具有一定的组织管理能力、团队合作能力, 能够在多学科背景下的团队中承担个体、团队成员以及负责人的角色。

9.Individual and Team work: Have certain organizational and management ability, and team cooperation ability, function effectively in teamwork as an individual, and as a member or leader of teams in multi-disciplinary settings.

10.沟通: 能够就信息通信工程领域复杂工程问题与业界同行及社会公众进行有效沟通和交流, 包括撰写报告和设计文稿、陈述发言、清晰表达或回应指令。熟练掌握一门外语, 并具备一定的国际视野, 能够在跨文化背景下进行沟通和交流。

10.Communication: Communicate effectively on complex engineering activities in the area of information and communications with the engineering community and with society at large, such as being able to write reports and design documentations, make effective presentations, and give and receive clear instructions. Proficiency in a foreign language and a certain international perspective, be able to communicate and exchange in a cross-cultural context.

11.项目管理: 理解并掌握工程管理原理与经济决策方法, 理解工程活动中涉及的重要经济与管理因素, 具有在 multidisciplinary 环境中应用的能力。

11.Project Management and Finance: Demonstrate knowledge and understanding of engineering management principles and economic decision-making, understand the important economic and management factors involved in engineering activities, and apply these to manage projects in multidisciplinary environments.

12.终身学习: 具有自主学习和终身学习的意识, 能够追踪信息与通信领域发展动态, 有不断学习和适应发展的能力。

12.Lifelong learning: Recognize the need for, and have the ability to engage in independent and life-long learning, being able to track the development of information and communication fields, and being able to continuously learn and adapt to development.

上述 12 条毕业要求, 支撑着专业培养目标的各个部分, 其支撑关系矩阵如下表所示:

The above 12 graduation requirements support the various parts of the professional training objectives. The supporting relationship matrix is shown in the following table:

毕业要求对培养目标的支撑关系

The Support Relationship of Graduation Requirements for Cultivation Objectives

毕业要求 Graduation Requirements	培养目标 Training Objectives			
	目标 1 Objective 1	目标 2 Objective 2	目标 3 Objective 3	目标 4 Objective 4
毕业要求 1: 工程知识 Graduation Requirements 1: Engineering Knowledge		√		√
毕业要求 2: 问题分析 Graduation Requirements 2: Problem Analysis		√		
毕业要求 3: 设计/开发解决方案 Graduation Requirements 3: Design/development of solutions		√		
毕业要求 4: 研究 Graduation Requirements 4: Investigation		√		√
毕业要求 5: 使用现代工具 Graduation Requirements 5: Modern Tool Usage		√		√
毕业要求 6: 工程与社会 Graduation Requirements 6: The Engineer and Society	√			
毕业要求 7: 环境和可持续发展 Graduation Requirements 7: Environment and Sustainability	√			
毕业要求 8: 职业规范 Graduation Requirements 8: Ethics	√			
毕业要求 9: 个人和团队 Graduation Requirements 9: Individual and Team work	√		√	
毕业要求 10: 沟通 Graduation Requirements 10: Communication	√		√	
毕业要求 11: 项目管理 Graduation Requirements 11: Project Management and Finance		√	√	
毕业要求 12: 终身学习 Graduation Requirements 12: Lifelong learning				√

IV.学制与学位 Duration and Degree

学制: 4 年

Duration: four years

学位: 工学学士

Degree: Bachelor of Engineering

V.主干学科与主干课程 Main Subject and Main Course

主干学科: 信息与通信工程

Main Subject: Information and Communication Engineering

主干课程: 高等数学, 概率论与数理统计, 大学物理, 电路分析, 高级语言程序设计, 数字逻辑与计算机组成原理, 信号与系统, 现代通信原理, 信息论与编码, 数字信号处理, 电磁场与电磁波, 移动通信, 光纤通信, 无线通信安全技术

Main Course: Advanced Mathematics, Probability and Mathematical Statistics, College Physics, Circuit Analysis, Advanced Programming Language, Digital Logic and Computer Composition Principle, Signals and Systems, Modern Communications Principle, Information and Coding Theory, Digital Signal Processing, Electromagnetic Fields and Wave, Mobile Communications, Optical Fiber Communications, Wireless Communication Security Technology

VI. 毕业学分基本要求 Basic Requirements of Credits for Graduation

课程体系 Curriculum System		学分要求 Credits Requirements						
		必修 Compulsory		限修 Distributional Electives		选修 Free Electives		小计
		理论 Theory	实践 Practice	理论 Theory	实践 Practice	理论 Theory	实践 Practice	Subtotal
公共基础课程 Public Basic Courses	思想政治类 Ideological Politics Courses	14	2					16
	军事类 Military Courses	2	2					4
	外语类 Foreign Language Courses	6		2				8
	体育类 Physical Education Courses		4					4
通识教育课程 General Education Courses	核心通识课 Core General Education Courses			4				4
	新生研讨课 Freshman Seminar			2				2
学科与专业基础课程 Discipline and Specialty Foundational Courses	数学与自然科学基础课 Foundational Courses on Mathematics and Natural Science	27	2					29
	专业基础课 Professional Foundational Courses	23.5	4.5					28
专业课程 Specialized Courses	专业核心课程 Specialized Core Course	24.5	5.5					30
	专业限修课程 Specialized Restricted Courses			9				9
实习实践教学 Practice Courses	基本技能训练、实习实训、综合课程设计、社会与文化素质实践、毕业实习与毕业设计 Basic Skills Training, Practical Training, Integrated Curriculum Design, Social and Cultural Quality Practice, Graduation Internship and Graduation Design		18					18
多元化课程 Diversified Courses	跨学科课程、美育专业类课程、学科竞赛类课程、其它个性化选修课程等 Interdisciplinary Courses, Aesthetic Education Courses, Subject Competition Courses, other Personalized Elective Courses, etc	2	1	3				6

创新创业实践 Innovation and Entrepreneurship Practice	创新创业训练计划项目、个性化实验、学科竞赛、创新讲座等 Innovation and Entrepreneurship Training Program, Personalized Experiments, Subject Competition, Innovation Lectures, etc		2					2
必修环节 A Compulsory Part	大学生综合素质提升、学生体质达标测评 Comprehensive Quality Improvement Courses for College Students, Assessment of Students' Physical Fitness	0						0
总 计 Total								160

VII.课程设置细化表 Course Programs Table

公共基础课程 Public Basic Courses								
共 32 学分，其中必修 30 学分，限修 2 学分，选修 0 学分 A total credits of 32, including 30 for compulsory courses, 2 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实践学分 In-class Practice Credits	开课学期 Semester	开课学院 School	支撑毕业要求指标点 Indicators which Support Graduation Requirements	备注 Notes
思想政治类 Ideological Politics Courses	思想道德与法治 Ideological and Moral Education and the Rule of Law	必修 Compulsory	3	0.4	第 1 学期 1Th Semester	马克思主义学院 School of Marxism	6, 7, 8	
	中国近现代史纲要 Conspectus of Chinese Modern History	必修 Compulsory	3	0.4	第 2 学期 2 Th Semester	马克思主义学院 School of Marxism	7, 8	
	马克思主义基本原理 The Basic Principles of Marxism	必修 Compulsory	3	0.4	第 3 学期 3 Th Semester	马克思主义学院 School of Marxism	8	
	毛泽东思想和中国特色社会主义理论体系概论 I Introduction to Mao Zedong Thought and Theoretical System of Socialism with Chinese Characteristics I	必修 Compulsory	3	0.4	第 5 学期 5Th Semester	马克思主义学院 School of Marxism	6, 7, 8	
	毛泽东思想和中国特色社会主义理论体系概论 II Introduction to Mao Zedong Thought and theoretical System of Socialism with Chinese Characteristics II	必修 Compulsory	2	0.4	第 6 学期 6Th Semester	马克思主义学院 School of Marxism	6, 7, 8	
	形势与政策 I Situation and Policy I	必修 Compulsory	0		第 1 学期 1Th Semester	马克思主义学院 School of Marxism	6, 7, 8	

思想政治类 Ideological Politics Courses	形势与政策 II Situation and Policy II	必修 Compulsory	0		第 2 学期 2Th Semester	马克思主义学院 School of Marxism	6, 7, 8	
	形势与政策 III Situation and Policy III	必修 Compulsory	0		第 3 学期 3Th Semester	马克思主义学院 School of Marxism		
	形势与政策 IV Situation and Policy IV	必修 Compulsory	0		第 4 学期 4Th Semester	马克思主义学院 School of Marxism		
	形势与政策 V Situation and Policy V	必修 Compulsory	0		第 5 学期 5Th Semester	马克思主义学院 School of Marxism		
	形势与政策 VI Situation and Policy VI	必修 Compulsory	0		第 6 学期 6Th Semester	马克思主义学院 School of Marxism		
	形势与政策 VII Situation and Policy VII	必修 Compulsory	0		第 7 学期 7Th Semester	马克思主义学院 School of Marxism		
	形势与政策 VIII Situation and Policy VIII	必修 Compulsory	2		第 8 学期 8Th Semester	马克思主义学院 School of Marxism		
军事类 Military Courses	军事理论 Military Theories	必修 Compulsory	2		第 1 学期 1St Semester	武装部 Security Office	9	
	军事技能 Military Skills	必修 Compulsory	2	2	短 1 学期 Short Semester1	武装部 Security Office	9	
外语类 Foreign Language Courses	英语 I College English I	必修 Compulsory	2		第 1 学期 1Th Semester	外国语学院 School of Foreign languages	10	
	英语 II College English II	必修 Compulsory	2		第 2 学期 2Th Semester	外国语学院 School of Foreign languages	10	
	通用学术英语 English for General Academic Purposes	必修 Compulsory	2		第 3 学期 3Th Semester	外国语学院 School of Foreign languages	10	
	职场英语 Workplace English	限修 Distributional Elective	2		第 4 学期 4Th Semester	外国语学院 School of Foreign languages	10	限选 1 门, 2 学 分 Limited to 1 course, 2 credits
	交际与文化视听说 Viewing, Listening & Speaking in English -- Communication & Culture							
	语言、文化与翻译 Language, Culture and Translation							
	英语公共演讲 Public Speaking in English							
体育类 Physical Education Courses	体育 I Physical Education I	必修 Compulsory	1	1	第 1 学期 1Th Semester	体育部 Dept. of Physical Education	9	
	体育 II Physical Education II	必修 Compulsory	1	1	第 2 学期 2Th Semester	体育部 Dept. of Physical Education		
	体育 III Physical Education III	必修 Compulsory	0.5	0.5	第 3 学期 3Th Semester	体育部 Dept. of Physical Education		

体育类 Physical Education Courses	体育 IV Physical Education IV	必修 Compulsory	0.5	0.5	第 4 学期 4Th Semester	体育部 Dept. of Physical Education	8	
	体育健康课程 I Diversified Physical Education Courses I	必修 Compulsory	0.5	0.5	第 5 学期 5Th Semester	体育部 Dept. of Physical Education		
	体育健康课程 II Diversified Physical Education Courses II	必修 Compulsory	0.5	0.5	第 6 学期 6Th Semester	体育部 Dept. of Physical Education		
通识教育课程 General Education Courses 共 6 学分，其中必修 2 学分，限修 4 学分，选修 0 学分 A total credits of 6, including 2 for compulsory courses, 4 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实践学分 In-class practice credits	开课学期 Semester	开课学院 School	支撑毕业要求指标点 Indicators which Support Graduation Requirements	备注 Notes
核心通识课 Core General Education	“交通天下”通识课程 General Studies on Transportation	限修 Distributional Elective	4		2-8 学期 2-8Th Semester		8,10	
新生研讨课 Freshman Seminar	通信学科前沿导论 Introduction on the Frontier of Communication Discipline	限修 Distributional Elective	2		第 1 学期 1Th Semester	信息科学与技术学院 School. of Information science and technology	8, 9, 10, 12	限选 1 门, 2 学分 Limited to 1 course, 2 credits
	微电子学科前沿导论 Introduction on the Frontiers of Microelectronics Discipline							
	轨道交通控制 Rail Transit Control							
学科与专业基础课程 Discipline and Specialty foundational Courses 共 57 学分，其中必修 57 学分，限修 0 学分，选修 0 学分 A total credits of 57, including 57for compulsory courses, 0 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实践学分 In-class practice credits	开课学期 Semester	开课学院 School	支撑毕业要求指标点 Indicators which Support Graduation Requirements	备注 Notes
数学与自然科学基础课 Foundational Courses on Mathematics and Natural Science	高等数学 I Advanced Mathematics I	必修 Compulsory	5		第 1 学期 1Th Semester	数学学院 School of Mathematics	1	
	高等数学 II Advanced Mathematics II	必修 Compulsory	5		第 2 学期 2Th Semester	数学学院 School of Mathematics	1	
	线性代数 B Linear Algebra B	必修 Compulsory	3		第 1 学期 1Th Semester	数学学院 School of Mathematics	1 , 4	
	复变函数与积分变换 Complex Function and Integral Transform	必修 Compulsory	3		第 4 学期 4Th Semester	数学学院 School of Mathematics	1	
	概率论与数理统计 Probability and Mathematical Statistics	必修 Compulsory	3		第 3 学期 3Th Semester	数学学院 School of Mathematics	1, 4	
	大学物理 AI College Physics I	必修 Compulsory	4		第 2 学期 2Th Semester	物理科学与技术学院 School of Physics	1	

数学与自然科学基础课 Foundational Courses on Mathematics and Natural Science	大学物理 AII College Physics II	必修 Compulsory	4		第 3 学期 3Th Semester	物理科学与技术学院 School of Physics	1	
	大学物理实验 I Experiments in College Physics I	必修 Compulsory	1	1	第 2 学期 2Th Semester	物理科学与技术学院 School of Physics	4	
	大学物理实验 II Experiments in College Physics II	必修 Compulsory	1	1	第 3 学期 3Th Semester	物理科学与技术学院 School of Physics	4	
专业基础课 Professional Foundational Courses	高级语言程序设计 Advanced Programming Language	必修 Compulsory	4	0.5	第 1 学期 1Th Semester	信息科学与技术学院 School. of Information science and technology	1, 3, 5	
	面向对象程序设计 Object-oriented Programming	必修 Compulsory	2		第 2 学期 2Th Semester	信息科学与技术学院 School. of Information science and technology	1, 3, 5	
	电路分析 BI Circuit Analysis BI	必修 Compulsory	3	0.25	第 2 学期 2Th Semester	电气工程学院 School of Electrical Engineering	1, 2, 4	
	电路分析 BII Circuit Analysis BII	必修 Compulsory	3	0.25	第 3 学期 3Th Semester	电气工程学院 School of Electrical Engineering	1, 2, 4	
	数字逻辑与计算机组成原理 Digital Logic and Computer Composition Principle	必修 Compulsory	4.5		第 3 学期 3Th Semester	信息科学与技术学院 School. of Information science and technology	1, 2, 4, 12	
	数字逻辑与计算机组成原理实验 Experiments of Digital Logic and Computer Composition Principle	必修 Compulsory	1.5	1.5	第 3 学期 3Th Semester	信息科学与技术学院 School. of Information science and technology	3, 4, 5	
	模拟电子技术 Analogue Electronic Technology	必修 Compulsory	4		第 4 学期 4Th Semester	信息科学与技术学院 School. of Information science and technology	1, 4	
	模拟电子技术实验 Experiments in Analogue Electronic Technology	必修 Compulsory	1	1	第 4 学期 4Th Semester	信息科学与技术学院 School. of Information science and technology	3, 4, 5	
	计算机网络 Computer Network	必修 Compulsory	3		第 5 学期 5Th Semester	信息科学与技术学院 School. of Information science and technology	1, 2, 11	

专业基础课 Professional Foundational Courses	计算机网络工程实验 Experiments in Computer Network Engineering	必修 Compulsory	1	1	第 5 学期 5Th Semester	信息科学与技 术学院 School. of Information science and technology	2, 3, 10	
	电子设计自动化 (EDA) 实验 Experiments of Electronic Design Automation	必修 Compulsory	1	1	第 4 学期 4Th Semester	信息科学与技 术学院 School. of Information science and technology	3, 4, 5	
专业课程 Specialized Courses 共 39 学分, 其中必修 30 学分, 限修 9 学分, 选修 0 学分 A total credits of 39, including 27 for compulsory courses, 12 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实 践学分 In-class practice credits	开课学期 Semester	开课学院 School	支撑毕业要求指 标点 Indicators which Support Graduation Requirements	备注 Notes
专业核心课程 Specialized Core Course	信号与系统 A Signals and Systems A	必修 Compulsory	4	0.5	第 4 学期 4Th Semester	信息科学与技 术学院 School. of Information science and technology	1, 2, 4	
	现代通信原理 A Modern Communications Principle A	必修 Compulsory	4	0.5	第 5 学期 5Th Semester	信息科学与技 术学院 School. of Information science and technology	1, 2, 3, 4	
	通信原理实验 Experiments for Communication Principles	必修 Compulsory	1	1	第 6 学期 6Th Semester	信息科学与技 术学院 School. of Information science and technology	3, 4, 10	
	数字信号处理 A Digital Signal Processing A	必修 Compulsory	3	0.5	第 5 学期 5Th Semester	信息科学与技 术学院 School. of Information science and technology	1, 2, 4, 12	
	电磁场与电磁波 B Electromagnetic Fields and Wave B	必修 Compulsory	4		第 4 学期 4Th Semester	物理科学与技 术学院 School of Physics	1, 2, 6, 7	
	无线通信安全技术 Wireless Communication Security Technology	必修 Compulsory	3		第 7 学期 7Th Semester	信息科学与技 术学院 School. of Information science and technology	3, 5, 6, 7, 12	
	移动通信 Mobile Communications	必修 Compulsory	3	0.5	第 6 学期 6Th Semester	信息科学与技 术学院 School. of Information science and technology	1, 2, 7, 12	
	光纤通信 Optical Fiber Communications	必修 Compulsory	3	0.5	第 6 学期 6Th Semester	信息科学与技 术学院 School. of Information science and technology	1, 2, 11	

专业核心课程 Specialized Core Course	无线通信链路仿真 Wireless Communication Link Simulation	必修 Compulsory	1	1	第 6 学期 6Th Semester	信息科学与技术学院 School. of Information science and technology	3, 4, 5, 11	
	信息论与编码 Information and Coding Theory	必修 Compulsory	3		第 4 学期 4Th Semester	信息科学与技术学院 School. of Information science and technology	1, 2, 6, 12	
	无线通信网络仿真 Wireless communication network simulation	必修 Compulsory	1	1	第 7 学期 7Th Semester	信息科学与技术学院 School. of Information science and technology	4, 5, 11, 12	
专业限修课程 Specialized Restricted Courses	微机与接口技术 B Microcomputer and interface technology B	限修 Distributional Elective	3		第 5 学期 5Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	限修至少 6 学分 Distributional Elective 6 Credits(同一门课的理论实验必须同时选, 且至少包括 2 个实践学分)
	微机与接口技术实验 Experiments for microcomputer and interface technology		1	1	第 5 学期 5Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	
	通信电路 Communications Circuits	限修 Distributional Elective	3		第 5 学期 5Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	
	通信电路实验 Communication Circuit Experiments		1	1	第 5 学期 5Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	
	嵌入式系统设计与应用 Design and application of embedded system	限修 Distributional Elective	2		第 6 学期 6Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	
	嵌入式系统设计与应用实验 Experiments for Design and application of embedded system		1	1	第 6 学期 6Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	
	DSP 原理与应用 DSP Principles and Applications	限修 Distributional Elective	2	0	第 6 学期 6Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	
	DSP 实验 Experiments for DSP		1	1	第 6 学期 6Th Semester	信息科学与技术学院 School. of Information science and technology	2, 3, 10, 12	

专业限修课程 Specialized Restricted Courses	传感技术 Sensing Technology	限修 Distributional Elective	3		第 7 学期 7Th Semester	信息科学与技 术学院 School. of Information science and technology	2, 6, 12	限修 3 学 分 Distributio nal Elective 3 Credits
	机器学习 A machine learning A	限修 Distributional Elective	3		第 6 学期 6Th Semester	信息科学与技 术学院 School. of Information science and technology	2, 6, 12	
	网络安全及攻防技 术 Network Security and Art of Attack and Defense	限修 Distributional Elective	3		第 7 学期 7Th Semester	信息科学与技 术学院 School. of Information science and technology	2, 6, 12	
实习实践教学 Practice Course 共 18 学分，其中必修 18 学分，限修 0 学分，选修 0 学分 A total credits of 18, including 18 for compulsory courses, 0 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实 践学分 In-class practice credits	开课学期 Semester	开课学院 School	支撑毕业要求指 标点 Indicators which Support Graduation Requirements	备注 Notes
基本技能训练、实 习实训、综合课程 设计、社会与文化 素质实践、毕业实 习与毕业设计 Basic Skills Training, Practical Training, Integrated Curriculum Design, Social and Cultural Quality Practice, Graduation Internship and Graduation Design	软件能力训练课程 设计 I Software Competence Training I	必修 Compulsory	1	1	第 3 学期 3Th Semester	信息科学与技 术学院 School of Information science and technology	3, 5, 9, 11	
	软件能力训练课程 设计 II Software Competence Training II	必修 Compulsory	1	1	第 4 学期 4Th Semester	信息科学与技 术学院 School of Information science and technology	3, 5, 9, 11	
	软件能力训练课程 设计 III Software Competence Training III	必修 Compulsory	1	1	第 5 学期 5Th Semester	信息科学与技 术学院 School of Information science and technology	3, 5, 9, 11	
	通信综合课程设计 Communication Integrated Design	必修 Compulsory	1	1	第 7 学期 7Th Semester	信息科学与技 术学院 School of Information science and technology	2, 3, 4, 5, 6, 7	
	工程训练 A Engineering Training A	必修 Compulsory	2	2	短 1 学期 Short Semester 1	工程训练中心 Center of Engineering Training	7, 8, 9, 11	
	电子工艺实习 Practice on Electronic Working Technics	必修 Compulsory	1	1	短 2 学期 Short Semester 2	信息科学与技 术学院 School of Information science and technology	5, 8	
	电子技术课程设计 Course Project in Electronic Technology	必修 Compulsory	1	1	短 2 学期 Short Semester 2	信息科学与技 术学院 School of Information science and technology	3, 8, 10	

	通信工程专业工程 实习 Communication Engineering Internship	必修 Compulsory	2	2	短 3 学期 Short Semester 3	信息科学与技 术学院 School of Information science and technology	3, 5, 6, 8, 9, 11	
	毕业设计 B Diploma project B	必修 Compulsory	8	8	第 8 学期 8Th Semester	信息科学与技 术学院 School of Information science and technology	2, 3, 4, 5, 6, 7, 10, 11, 12	
多元化课程 Diversified course 共 6 学分，其中必修 3 学分，限修 3 学分，选修 0 学分 A total credits of 6, including 0 for compulsory courses, 6 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实 践学分 In-class practice credits	开课学期 Semester	开课学院 School	支撑毕业要求指 标点 Indicators which Support Graduation Requirements	备注 Notes
跨学科课程 Interdisciplinary Course	探索工程大数据的 奥秘 Exploring the Mystery of Big Data in Engineering	限修 Distributional Elective	3	1	第 7 学期 7Th Semester	信息科学与技 术学院 School of Information Science and Technology	3, 6, 9, 11	3 选 1 Select 1 from 3
	数字图像背后的秘 密 Secrets Behind Digital Images		3	1	第 7 学期 7Th Semester	信息科学与技 术学院 School of Information Science and Technology	3, 6, 9, 11	
	真实世界的通信工 程 Communication in Real World		3	1	第 7 学期 7Th Semester	信息科学与技 术学院 School of Information Science and Technology	3, 6, 9, 11	
	智能+交通 Intelligence+Transpor tation	限修 Distributional Elective	2		第 7 学期 7Th Semester	信息科学与技 术学院 School of Information Science and Technology	8, 10	限修 3 学 分 Distributio nal Elective 3 credits, 其中全校 个性化选 修课程中 《工程概 论》(2 学 分) 为必 选 按照《西 南交通大 学多元化 课程修读 指导手 册》执行 Follow the 《Instructi on manual of diversified courses of southwest Jiaotong University 》
	研究能力训练课程 设计 Research Ability Training		1	1	第 7 学期 7Th Semester	信息科学与技 术学院 School of Information Science and Technology	8, 10	
	全校美育专业类课 程 Aesthetic Education Specialty Courses of University		2		第 2-8 学 期 2-8 Semester	全校 The whole school	8, 10	
学科竞赛类课程 Subject Competition Courses	全校学科竞赛课程 Subject Competition Courses of University		2				8, 10	
个性化选修课程 Personalized Elective Courses	工程概论 Introduction to Engineering	必修 Compulsory	2	0	第 2 学期		3,6,7,11	

创新创业实践 Innovation and Entrepreneurship Practice 共 2 学分，其中必修 2 学分，限修 0 学分，选修 0 学分 A total credits of 2, including 2 for compulsory courses, 0 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实践学分 In-class practice credits	开课学期 Semester	开课学院 School	支撑毕业要求指标点 Indicators which Support Graduation Requirements	备注 Notes
创新创业训练计划项目、个性化实验、学科竞赛、创新讲座等 Innovation and Entrepreneurship Training Program, Personalized Experiments, Subject Competition, Innovation Lectures, etc	课外创新实践 Innovation Practice outside Class	必修 Compulsory	2	2	第 3-7 学期 3-7 Semester	信息科学与技术学院 School of Information Science and Technology	9	按照《西南交通大学创新实践学分认定与管理办法》规定修习 Study in accordance with the Regulations on Credit Recognition and Management of Innovation Practice in Southwest Jiaotong University
必修环节 A compulsory part 共 0 学分，其中必修 0 学分，限修 0 学分，选修 0 学分 A total credits of 0, including 0 for compulsory courses, 0 for distributional electives and 0 for free electives								
课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	总学分 Credits	课内实践学分 In-class practice credits	开课学期 Semester	开课学院 School	支撑毕业要求指标点 Indicators which Support Graduation Requirements	备注 Notes
大学生综合素质提升、学生体质达标测评 Comprehensive Quality Improvement Courses for College Students, Assessment of Students' Physical Fitness	大学生综合素质提升（第二、第三课堂） Comprehensive Quality Improvement Courses for College Students (The Second and Third Classroom)	必修 Compulsory	0		1-8 学期 1-8 Th Semester	校团委 Communist Youth League Committee	7, 8	
	学生体质达标测评 Assessment of Students' Physical Fitness	必修 Compulsory	0		秋季学期 fall Semester	体育部 Dept. of Physical Education	8	
学分总计 Total Credits			160					