

计算机科学与技术专业本科培养计划

Undergraduate Programs for Major in Computer Science & Technology (for Foreign Students)

一、业务培养目标

I Educational Objectives

本专业培养具有良好的科学素养、系统地、较好地掌握计算机科学与技术包括计算机硬件、软件与应用的基本理论、基本知识和基本技能与方法，具备卓越的工程实践能力，能在科研部门、教育单位、企业、事业、技术和行政管理部门等单位从事计算机软硬件开发和应用的应用型工程型技术人才。

This program is committed to train students to become applied engineering and technical talented professionals with a sound theoretic foundation, systematical knowledge and skill of the capability to carry out the scientific research, system analysis, system design, technical development, and management in the field of computer science and technology and capability of engineering practice in computer software and hardware development and application in science research departments, education institution, enterprises, technical and administrative departments.

二、业务培养要求

II Educational Requirements

本专业学生主要学习计算机科学与技术方面的基本理论和基本知识，接受从事研究与应用计算机的基本训练，具有研究和开发计算机应用系统的工程实践能力。

毕业生应获得以下几方面的知识和能力：

1. 掌握计算机科学与技术的基本理论、基本知识；
2. 掌握计算机系统分析和设计的基本方法；
3. 具备卓越的研究开发计算机软、硬件的工程实践能力；
4. 了解与计算机有关的法规；
5. 了解计算机科学与技术的发展动态；
6. 掌握文献检索、资料查询的基本方法，具有获取信息的能力。

具有较强的英语综合应用能力，特别是听、说能力，在今后工作和社会交往中，能用英语有效地进行口头和书面的信息交流，能熟练进行外文阅读，有一定的外语写作能力。

The students mainly study the fundamental theory and systematical knowledge of computer science and technology, accept the engineering training on researching and applying computers, and attain the practice abilities of researching and developing the computer application systems.

The graduated students are expected to have the following abilities:

1. Master the basic theory and knowledge of computer science and technology;
2. Master the basic methods of system analysis and design;
3. Have the excellent practice abilities of researching and developing computer software and hardware;
4. Understand the laws and regulations about computer industry;
5. Understand the development and trends in the computer science and technology;
6. Master the basic methods of literature survey, data collection; Have the abilities to get the latest research results in the field of computer science and technology ;
7. Have the ability of applying English language in study, especially for listening and speaking, can efficiently undertake oral and written information exchange in English in the future work.

8. With strong abilities of analyzing and solving practical problem, and competent to plan, design, evaluate, improve and innovate the production system.

三、主干学科

III Major Disciplines

主干学科：计算机科学与技术

Major Disciplines: Computer Science and Technology

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：离散结构、汇编语言程序设计、计算机组成原理、数据结构、操作系统、编译原理、数据库系统原理、计算机网络、高级语言程序设计、软件工程。

Core Courses: Discrete structure, Assembly language programming, Principles of Computer Organization, Data Structure, Operating System, Principles of Compiler Construction, Principles of Database Systems, Computer Networks, Advanced Language Programming, and Software Engineering.

专业特色课程：计算机应用课群包括 JAVA 语言程序设计、可视化编程、软件测试、人工智能概论及信息安全。

Characteristic Courses: JAVA Programming, Visualizing Programming, Software Testing, Introduction to AI and Information Security.

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	集中性实践 Practice Courses	总学分 Total Credits
必修课 Required Courses	18.5	36	43.5	24	137
选修课 Elective Courses	0	5	10	\	

七、理论教学进程表

VII Theory Course Schedule

课程类别 Course Classification	课程性质 Course Nature	课程编号 Course Number	课程名称 Course Title	学分 Crs	学时分配 Including						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		初级汉语会话 Basic Chinese Conversation	6	96					1		
			科技汉语会话 Scientific Chinese Conversation	3	48					2		
			中国概况 Introduction to China	3	48				16	3		
		4120027011	计算机科学导论 Introduction to Computer Science	2.5	40			10		1		
		4120020011	高级语言程序设计 A Advanced Language Programming A	4	64			16		1		
		小 计 Subtotal			18.5	296		26				
学科大类课程 Basic Disciplinary Courses	必修课 Required Courses	4050063111	高等数学 A1 Advanced Mathematics A I	5	80					1		
		4050064111	高等数学 A2 Advanced Mathematics A II	5	80					2	4050063111	
		4110019111	电路原理 B Circuit Principle B	4	64	16				1		
		4050229111	线性代数 Linear Algebra	2.5	40					2		
		4110050111	模拟电子技术基础 C Analog Electronic Technology C	3	48	8				2(上半期)		
		4050023111	大学物理 B Physics B	5.5	88					2		
		4050224111	物理实验 B Physics Lab. B	1	32	32				3		
		4120045111	离散结构 Discrete Structure	4	64					3		
		4050058111	概率论与数理统计 B Probability and Mathematical Statistic B	3	48					3		
		4120033111	计算机网络 Computer Networks B	3	48	8				5		
	小 计 Subtotal			36	592	64						
	选修课 Elective Courses		4120003111	JAVA 语言程序设计 B Java Language Programming B	2.5	40		12			3	
4120044111			可视化编程 Visual Programming	2.5	40		12			4		
小 计 Subtotal			5	80		24						

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			
修读说明: 要求至少选修 5 学分。 NOTE: Minimum subtotal credits: 5.													
专 业 课 程 Specialized Courses	必 修 课 Required Courses	4120079111	数字逻辑 Digital Logic	3	48	8				2(下半年)			
		4120028111	计算机数值分析 Computer Numerical Analysis	2.5	40		8			4			
		4120	计算机组成原理 A Principles of Computer Organization A	5.5	88	10		16		3			
		4120048111	面向对象程序设计 C Object Oriented Programming C	2.5	40		12			3			
		4120	数据结构 A Data Structure A	5.5	88		16	16		4			
		4120	汇编语言程序设计 Assembly Language Programming	4	64	16		16		4	计算机组成原理		
		4120	编译原理 A Principles of Compiler Construction A	4.5	72		8	16		5	4120020011		
		4120	操作系统 Operating System	4.5	72		12	16		5	计算机组成原理		
		4120	数据库系统原理 Principles of Database Systems	4	64		8	16		5(下半年)	数据结构		
		4120060111	软件工程 B Software Engineering B	2.5	40		8			5			
		4120052111	嵌入式系统应用 A Embedded System and Application A	2.5	40	6				6			
		4120039111	计算机系统结构 A Computer Architecture A	2.5	40					6	计算机组成原理		
		小 计 Subtotal				43.5	696	40	72	96			
		4120055111	人工智能概论 Artificial Intelligence	2	32					7			
		4120102111	信息安全 Information Security	2	32	6				7			
		4120058111	软件测试 B Software Testing B	2	32	8				6	4120060111		
		4120	数据挖掘 Data Mining	2	32					7			
		4120	XML 技术 XML Technology	2	32					7			
		小 计 Subtotal				10	160	14					

八、集中性实践教学进程表

VIII Practice Training Table

课程编号 Course Number	实践环节名称 Practice Courses Name	周数 Weeks	学分 CrS	建议修读学期 Suggested Term	第二专业 Second Major
4120141111	专业教育 Professional Education	1	1	3	
4120	计算机网络课程设计（20 学时上机） Course Project of Computer Networks	1	1	6	
4120	计算机软件综合开发实训(70 学时上机) Computer Software Development Training	3	3	7	
4120	基础强化训练（40 学时上机） Foundation Strengthening Training	2	2	3	
	软件工程综合课程设计（40 学时上机） Course Project of Software Engineering	2	2	6	
4120108111	毕业设计 Graduation Design (Thesis)	15	15	8	
小 计 Subtotal		24	24		