

Southwest Jiaotong University
Computer Science and Technology

Program Objectives

The program aims to provide students with an opportunity to develop functional expertise, strategic perspectives that they require to operate effectively in a changing information environment or to understand such an environment; help students to learn both the successes and failures in China's computer science and technology; introduce students the techniques of computer science and technology to meet the needs of information modernization, as well as sharpen their leadership and communication skills.

Major

Computer Science and Technology (Master/PhD)

Study Period

Master: Two years (course study for 1 year and thesis proposal for 1 year)

PhD: Four years (course study for 1 year and thesis proposal for 3 year)

Teaching Language

English

Curriculum

Level	Type	Code	Name	Credit/ hours	Semester			Evaluation
					I	II	III	
Level 5 Intermediate Course	Public Course 公共课		基础汉语 I Basic Chinese I	2/32	√			
			中国文化 Chinese Culture	2/32	√			
			基础汉语 II Basic Chinese II	2/32		√		
			中国概况 China Overview	2/32		√		
			当代中国 Contemporary China	1/16		√		
	公共基础课 Common Basic Course	54012001	Numerical analysis※ 数值分析※	3/48	√			Examination
		54012002	Modern Mathematical Physics Equation 现代数学物理方程	3/48	√			Examination
		54012003	Stochastic Process and Time Series Analysis 随机过程与时间序列分析	3/48		√		Examination
		54012004	Application of Fuzzy Mathematics 应用模糊数学	3/48		√		Examination

		54012005	Mathematical Statistics and Multi variate Statistics※ 数理统计与多元统计※	3/48	√			Examination
		54012006	Matrix Analysis※ 矩阵分析※	3/48	√			Examination
	专业基础课 Basic Professional Course	50433006	Combinatorial Mathematics and Graph Theory 组合数学与图论	2/32	√			Examination
		50433007	Fundamentals of Computer Network Communications 计算机网络通信基础※	3/48	√			Examination
	专业课 Professional Course	50434013	Digital Image Processing 数字图像处理	2/32	√			Examination
		50434016	Information Security Engineering 信息安全工程	2/32	√			Examination
		50434019	Distributed Database System 分布式数据库系统	2/32	√			Examination
		50434020	Object-Oriented Analysis and Design 面向对象系统分析与设计	2/32	√			Examination
		50434021	Artificial Intelligence 人工智能	2/32	√			Examination
		50434022	Multimedia Information Processing Technology 多媒体信息处理技术	2/32	√			Examination
		50434023	XML-Based Product Data Exchange Technology 基于 XML 的产品数据交互技术	2/32	√			Examination
		50434024	Web Application Development Technology on 3G Smartphone 3G 智能手机 Web 应用开发技术	2/32	√			Examination
		50433009	Algorithm Analysis and Design 算法分析与设计	2/32	√			Examination
		50433010	Data Warehousing and Data Mining※※ 数据仓库与数据挖掘※※	2/32	√			Examination
实验课 Lab Experiment	50425001	Electronic Design Automation Technology 电子设计自动化 (EDA) 技术	3/48		√		Examination	
	50425002	Digital Signal Processing Technology DSP 技术	3/48		√		Examination	

		50425003	Embedded System※ 嵌入式系统※	3/48		√		Examination
Level 6 Advanced Courses	公共基础课 Common Basic Course	64012001	Applied Functional Analysis 应用泛函分析	3/48	√			Examination
		专业基础课 Basic Professional Course	60433001	Optimization Theory and Methods * 优化理论与方法*	3/48	√		
	60433003		Computing Theory Basic 计算理论基础	3/48	√			Examination
	专业课 Professional Course	60434009	Security of Computer Networking 网络安全	2/32		√		Examination
		60434010	Cloud Computing* 云计算*	2/32	√			Examination
		60434011	Complex System Modeling and Application 复杂系统建模与应用	2/32	√			Examination
		60434014	Pattern Recognition* 模式识别*	2/32		√		Examination
		60434015	Machine Learning* 机器学习*	2/32		√		Examination
		60434016	Internet Search Engine* 互联网搜索引擎*	2/32		√		Examination
		60434017	Services Computing and Web Services Technology* 服务计算与 Web Services 技术*	2/32		√		Examination
		60434018	Computer Vision* 计算机视觉*	2/32		√		Examination
		60434019	Virtual Reality Technology 虚拟现实技术	2/32		√		Examination
		60434020	Supply Chain Management System Design and Development 供应链管理系统设计与开发实践	2/32		√		Examination
Level 7 Frontier Courses	公共课 Public Course		基础汉语 I Basic Chinese I	2/32	√			
			中国文化 Chinese Culture	2/32	√			

			基础汉语 II Basic Chinese II	2/32		√		
			中国概况 China Overview	2/32		√		
			当代中国 Contemporary China	1/16		√		
	公共基础课 Common Basic Course	74012001	Modern Mathematics 现代数学	3/48		√		Examination
		74012002	Reliability Mathematics 可靠性数学	3/48		√		Examination
		74032001	Rough Set Model and Application 粗糙集模型及其应用	2/32	√			Examination
	专业课 Professional Course	70414004	Computational Intelligence * 计算智能 *	2/32	√			Examination
		70434004	Modern Service Model and Technology 现代服务模式与技术	2/32	√			Examination
		70434005	Digital Video Processing and Co mmunication 数字视频处理与传输	2/32		√		Examination
		70434006	Networking System Modeling and Simulation 网络系统建模与仿真	2/32	√			Examination
70434007		Web-based Collaboration Platform Design 基于 Web 的协同平台设计	2/32		√		Examination	
70434008		Web Mining Technology * 万维网挖掘技术 *	2/32		√		Examination	
70414005		Automated Reasoning 自动推理	2/32	√			Examination	

		70414007	Lattice Valued Logic 格值逻辑	2/32	√				Examination
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Practice Training

注： 1. The courses taught in foreign language or with textbook are marked with ‘*’.
以外语教材、外语授课的课程在课程名称的后面填“*”；

Level	Type	Code	Name	Credit /hours	Semester			Evaluation
					I	II	III	
Level 5 Intermediate Level	Segments	54316100/1	Current Situation and Policy 形势与政策	0/16	√	√		Performance review
			Academic Lectures (≥5 lectures) 学术报告 (至少参加 5 次)	1/16		√		Performance review
			Frontier Technology Seminars (≥5 lectures) 前沿技术专题(至少听 5 个)	1/16	√	√		Performance review
	Practice		Scientific Research Practice 科研实践	1/16		√		Performance review
			Professional Practice 专业实践	5/80			√	Performance review
Level 7 Advanced Level	Segments		Frontier Academic Seminars (≥4 lectures, each lasting 4~10 hours) 前沿性学术专题 (不少于 4 个, 每个 4~10 学时)	2/32		√		Performance review
			Academic Lectures (≥8 lectures, as a lecturer once) 学术报告 (至少参加 8 次, 其中本人主讲 1 次)	1/16		√		Performance review

2. The courses classified as key professional courses are marked with ‘*’.

专业核心课程在课程名称后面填“*”。

3. Level 5 is for Master program, Level 6 is for Master/PhD program, Level 7 is for PhD program.

Thesis

(1)Topic selection

Students are expected to select a topic which has important application value and theoretical significance to the construction of national economy, and it also should be combined with tutor's research projects as far as possible. The selected topic must be approved by mentor and through the arguments.

(2)Thesis proposal

Master students are required to complete the thesis proposal during the second semester; PhD Students are required to complete the thesis proposal during the second academic year. In the report meeting, students should solicit opinions widely, and the thesis proposal will be determined by the related discipline experts after the examination and approval. The contents and requirements of the thesis proposal consist of: dynamic and research level about thesis topic; the purpose and significance of the selected topic; the research contents and research methods; the results and level expected to achieve; thesis writing arrangements; qualifications for subject research and so on.

(3) Thesis writing program

Students are supposed to formulate a detailed thesis writing program under the guidance of tutor. In the program, there should be a detailed arrangements and instructions about research methods, experiments, funds and equipment, thesis writing deadline and the results expected to achieve.

(4) Thesis appraisal and defense and degree awarding should be executed according to relevant regulations of Southwest Jiaotong University.

Degree Requirements

Master: Students are required to successfully complete 26 credit-worth course work and a master thesis and thesis defense within the required time period. After meeting the above requirements and with the approval of Southwest Jiaotong University Degree Committee, the master degree will be awarded.

PhD: Students are required to successfully complete 17 credit-worth course work and a doctor thesis and thesis defense within the required time period. After meeting the above requirements and with the approval of Southwest Jiaotong University Degree Committee, the doctor degree will be awarded.