

**Southwest Jiaotong University**  
**Science and Technology of Surveying and Mapping**

**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 environment or to understand such an environment; help students to learn both the successes and failures in China's science and technology of surveying and mapping; introduce students the techniques of science and technology of surveying and mapping to meet the needs of modernization, as well as sharpen their leadership and communication skills.

**Major**

Science and Technology of Surveying and Mapping (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**

级别 Level	课程类型 Type	课程编号 Code	课程名称 Name	学分 Credit	学期 Semester			考核方式 Assessment
					I	II	III	
5级课程 Level 5	公共课 Common Courses		基础汉语 I Basic Chinese I	2	√			
			中国文化 Chinese Culture	2	√			
			基础汉语 II Basic Chinese II	2		√		
			中国概况 China Overview	2		√		
			当代中国 Contemporary China	1		√		
	公共基础课 Elementary Courses	54012001	数值分析※ Information Retrieval	3	√			考试 Comprehensive Assessment
	专业课 Specialized Courses	51424001	地籍测量与地籍信息管理 Cadastral Surveying and Cadastral Information Management	2		√		考试 Comprehensive Assessment
	实验课 Experimental Courses	51425001	测绘工程实验 Surveying Experiments	2		√		考试 Comprehensive Assessment

6 级课程 Level 6	高级课程 Advanced courses	公共基础课 Common Courses	64012001	应用泛函分析 Applied Functional Analysis	3	√		考试 Written Examination
		专业基础课 Elementary Specialized Courses	61413001	测量数据处理理论与方法※ Theory and Methodology of Surveying Data Processing	3	√		考试 Written Examination
			61413008	全球导航卫星系统与增强理论※ Global Navigation Satellite System and Reinforcement Theory	3	√		考试 Written Examination
			61413009	空间统计分析基础※ Fundamentals of Spatial Statistical Analysis	3	√		考试 Written Examination
			61413004	遥感信息处理与分析方法※ Remote Sensing Information Processing	3	√		考试 Written Examination
			61424001	精密工程测量及形变观测 Precise Engineering Surveying and Deformation Monitoring	3	√		考试 Written Examination
		专业课 Specialized Courses	61424002	高等应用测量学 Advanced Geodesy	2	√		考试 Written Examination
			61424003	移动勘测技术与应用 Mobile Surveying	2		√	考试 Written Examination
			61434015	卫星大地测量 Satellite Geodesy	2	√		考试 Written Examination
			61434002	地球物理大地测量与数据分析 Geophysical Geodesy and Data Analysis	3		√	考试 Written Examination
			61434020	卫星定轨理论与应用 Theory and Application of Satellite Navigation and Positioning	2		√	考试 Written Examination
			61434004	地图综合与空间数据多	2		√	考查

				尺度可视化 Map Generalization and Spatial Data Multi-scale Visualization					Comprehensiv e Assessment
			61434005	海量空间数据组织与管 理 Massive Geospatial Data Organization and Management	2	√			考查 Comprehensiv e Assessment
			61434006	网络 GIS 与地理信息服务 Web GIS and Geographic Information Services	2		√		考试 Written Examination
			61434007	数字地表建模与分析 Digital Terrain Modeling and Analysis	2		√		考试 Written Examination
			61434008	地学空间信息可视化 Geo-spatial Information Visualization	1	√			考试 Written Examination
			61434009	时空过程建模与分析 Modeling and Analysis of Space-Time Processes	1	√			考试 Written Examination
			61434010	合成孔径雷达干涉测量 Interferometric Synthetic Aperture Radar	2		√		考试 Written Examination
			61434011	遥感应用模型 Remote Sensing Modeling and Applications	2		√		考查 Comprehensiv e Assessment
			61434012	高分辨率遥感技术 Processing and Analysis for High Resolution Remote Sensing imagery	1	√			考试 Written Examination
			61434013	遥感信息提取与智能解 译 Information Extraction and Intelligent Interpretation for Remote sensing Imagery	1		√		考查 Comprehensiv e Assessment
			61434014	研究方法论 * Research Methodolgoy	2	√			考查 Comprehensiv e Assessment

7 级课程 Level 7	前沿课程 Frontier Courses	公共课 Common Courses		基础汉语 I Basic Chinese I	2	√			
				中国文化 Chinese Culture	2	√			
				基础汉语 II Basic Chinese II	2		√		
				中国概况 China Overview	2		√		
				当代中国 Contemporary China	1		√		
		公共基础课 Elemental Courses	74012001	现代数学 Modern Mathematics	3		√		考试 Written Examination
			74012002	可靠性数学 Reliable Mathematics	3		√		考试 Written Examination
			74032001	粗糙集模型及其应用 Rough Set Theory and Application	2	√			考试 Written Examination
		专业课 Specialized Courses	71414001	GNSS 前沿理论研究进展 Advances in GNSS Frontiers	2	√			考查 Comprehensive Assessment
			71414002	大地测量学研究进展 Advances in Geodesy	2	√			考查 Comprehensive Assessment
			71414012	现代数据处理研究进展 Advances in Modern Data Process	2	√			考查 Comprehensive Assessment
			71414004	空间信息科学与技术前沿 Frontiers in Space Information Science and Technology	2	√			考查 Comprehensive Assessment
			71414015	专业科研实践 Scientific Practice	2		√		考查 Comprehensive Assessment

## Practices

级别 Level	课程编号 Code	课程名称 Name	学分 Credit	学期 Semester			考核方式 Assessment
				I	II	III	
5 级 Intermediate Level	54316100	形势与政策 Situation and Policy	0	√	√		考查 Comprehensive

								e Assessment
		51416001	学术报告（至少参加 5 次） Academic Seminars (attending no less than 5 times)	1			v	考查 Comprehensive Assessment
		51436002	前沿技术专题(至少听 5 个) Frontier Technical Reports (attending no less than 5 times)	1			v	考查 Comprehensive Assessment
		51426001	科研实践 Research Practice	1			v	考查 Comprehensive Assessment
		51426002	专业实践 Specialized Practice	5			v	考查 Comprehensive Assessment
Level 7 7 级 前沿 Frontier Seminar		71416001	前沿性学术专题（不少于 4 个，每个 4~10 学时） Frontier Academic Reports (attending no less than 4 times)	2			v	考查 Comprehensive Assessment
		71416002	学术报告（至少参加 8 次，其中本人主讲 1 次） Academic Seminars (attending no less than five times and deliver presentations of his/her research work at least once)	1			v	考查 Comprehensive Assessment

Note: 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.