

专业代码：081803 学科门类：工学

Code of Specialty: Department of Discipline:Engineers

一级学科：地质资源与地质工程 学分要求：40 分

First-grade Discipline:geologic resources Credit Setting: 40

and geologic engineering

一、学科（专业）概况 (Diciplines Instruction)

地质工程专业前身是 1993 年设置的水文地质和工程地质专业，2000 年获得硕士学位授予权，2005 年得博士学位授予权。是辽宁工程技术大学的重点建设学科，在国内外有一定影响力。地质工程专业形成了工程地质、水文地质、环境地质及灾害地质、地质勘察与技术等 4 个稳定的研究方向。具有年龄结构合理、学历层次高，富有开拓创新意识，学术成果丰硕的师资队伍。本学科拥有工程地质勘查的大型仪器设备多台。多年来本学科先后承担了国

家重点科技攻关、国家自然科学基金、省部级科研项目等多项，完成水电、煤炭、地矿、化工等行业的科研课题百余项，获省、部级科技进步奖 10 余项。地质工程专业培养的毕业生已成为工矿企事业单位及科研院所的中坚力量，为我国地质工程事业的发展做出了巨大贡献。

Geological engineering is the traditional advantage disciplines of Liaoning Technical University. Master of Geological Engineering authorize point approved in 2000, Enrollment began in 2000. The authorized point has a Master tutor team with reasonable age structure and higher levels of academic, it has Master tutor 10 now. The main research areas include evaluation of hydrogeology, engineering geology, mineral resources exploration technology, geological engineering survey, prediction theory and prevention techniques for geological disasters. Over the years the discipline has completed key national science and technology projects, ministerial and provincial key projects, hydropower, petroleum, geology and mining, and chemical areas, of which 3 have been awarded ministerial and provincial Science and Technology Progress prizes. Some graduates go to the Liaoning Technical University (local), Tongji University and The Geology Institute of China Academy and etc.. Many graduates directly take part in the work after graduation and already become the technical principals and operational mainstays in their working units.

二、培养目标 (Training Objectives)

- 1、掌握马克思主义的基本理论，拥护中华人民共和国宪法，遵守法律、法规，热爱祖国和人民，树立强烈的事业心和积极进取精神，具有与时俱进的创新意识。
- 2、掌握地质工程学科扎实的基础理论和系统的专门知识，具有宽广的知识面。掌握一门外国语，能熟练阅读专业外文文献，并具有较强的听、说、写、译的能力。有较强的创新能力、实践能力，具备独立从事该学科研究工作和解决相关领域科学问题的综合科研能力。
- 3、身体健康，心理素质好，能胜任地质工程方面的科学研究和相关的地质工作。

三、学制与学习年限

学制 3 年，学习年限 2-5 年。

四、研究方向 (Research Orientation)

序号	名 称	研究方向的范围及特点概述
	Name	The Scope of Research Orientation and Brief account of the Characteristic

1	<p>工程地质</p> <p>Engineering Geology</p>	<p>土体工程地质稳定性研究；岩体工程地质稳定性研究；岩土体及特殊岩土的工程性质与稳定性评价；工程动力地质作用评价。</p> <p>The research studies the regional distribution characteristics and law of engineering geology, the stability of engineering soil and rock body and the engineering area, the environment effect of large-scale engineering; analyzes and predicts the various possible geological actions and engineering geology problems both in natural condition and the engineering construction, the numeral simulation of engineering geology, the feasibility study, the technical and economic evaluation, and the management and decision of engineering geology project.</p>
2	<p>水文地质</p> <p>hydrogeology</p>	<p>地下水的赋存与运移规律；地下水环境演化规律与水污染治理方法与技术；矿山水害防治；地下水资源和地下热能的勘察、评价与开发；人类活动对地下水的影响研究。</p>

		<p>The research studies the occurrence and migration characteristics of subsurface water, the environment evolutionary law of subsurface water, the administration method and technology of water pollution, the harness of mine water disaster, the survey, appraisal and development technology of underground water resource and underground heat, and the numerical simulation of hydrogeology, etc.</p>
3	<p>环境地质与灾害地质</p> <p>Environmental geological evaluation and Environmental hazard geology</p>	<p>工程诱发的滑坡、崩塌、泥石流等灾害防治；地面沉降、地面塌陷机理及防治；土地功能退化机理及防治；矿山地质灾害的成因、风险评价及防治。</p> <p>It is an interdisciplinary research of the sciences of the ecological environment, calamity and geology. It uses the latest achievements of physics, mathematics, and engineering geology, etc., to study the scientific theories of the change, analysis and appraise of the ecological environment geology; more over it studies the origin and risk appraisal theory of the geological disaster, and studies the theory, design method</p>

		and engineering technique of defending the geological disaster so as to improve the ability of disaster prevention, fight and reduction.
4	<p>地质勘察 与技术 Geological Exploration and Technology</p>	<p>地震、电磁、声波等工程勘探理论；岩土钻掘理论与技术；岩土工程测试技术；地质体结构构造和工程质量探测新技术和新方法。</p> <p>The research evaluation and prediction of mineral resources prediction, technical and economic analysis, development of mining decision-making, integrated application of geological, technical, economic; and management of multi-disciplinary knowledge and mathematical statistics, quantitative analysis for evaluation of mineral resources such as fuzzy mathematics, the level of analysis, the gray system, sound data processing, neural networks. Factors in the evaluation of quantitative screening, assessment and evaluation of the results of model applications to conduct in-depth research.</p>

六、课程设置 (Curriculum)

课程类别		课程编号	课程名称	学分	学时 Hour	开课学期	开课单位	备注
Course Type		Course No	Course Name	Credit	课内/试验 Class/test	semester classes	Class Department	Remarks
Academic Degree Comse 学位课	Common Course 公共课		中国特色科学社会主义理论与实践研究	2		1	思政部	必修
			自然辩证法概论/马克思主义社会科学方法论	1		1	思政部	必修
			基础综合英语	3		1	外语系	过六级者
			学术综合英语	3		2	外语系	过六级者

			硕士生基础英语 1	3		1	外语系	未过六级者
			硕士生基础英语 2	3		2	外语系	未过六级者
			矩阵论	3		1	理学院	必修
			数值分析	3		2	理学院	必修
	Basic Course		高等流体力学	2	40	1	矿业学院	基础课和专业课 之和: 16 学分
	基础课		高等土力学	3	60	2	矿业学院	
			岩土工程数值模拟	2	40	2	矿业学院	
	Specialized Course		工程地质分析原理	3	60	2	矿业学院	
			地质灾害防治工程技术方法	2	40	2	矿业学院	
			水文地质理论及工程应用	2	40	2	矿业学院	
			地质图像处理	2	40	2	矿业学院	
	专业课		Treatment of Geological Images					

Selective Course 选修课	Public Elective Course 公共选修课		学术英语写作	1	20	2	培养单位	必选
			科学计算与数学建模	2	40	2	理学院	至少选修一门
			高等工程应用数学	2			矿业学院	
			随机过程	2			理学院	
			数理方程	2	40	2	理学院	
			应用泛函分析	2			理学院	
			最优化理论	2			理学院	
			应用统计	2			理学院	
	Optional Courses 任选课		科技学术讲座	2	40	2	矿业学院	必选
			资源与环境地质学导论 Introduction to Resource and Environmental Geology	2	40	2	矿业学院	至少选修两门

			现代岩矿测试技术 Modern Measuring Technique of Rock and Mineral	2	40	2	矿业学院	
			地球物理勘探方法 Geophysical exploration methods	2	40	2	矿业学院	
			地质工程研究新进展	2	40	2	矿业学院	
			地下水数值模拟	2	40	2	矿业学院	
			地下工程理论与实践	2	40	2	矿业学院	
合计 Total				40				