

资源勘查工程(基地班)专业培养方案

专业名称与代码：资源勘查工程(基地班) 081403

专业培养目标：

本专业培养德、智、体、美、劳全面发展的、矿床学和矿产勘查领域创新型和研究型人才。毕业生具有良好的人文社会科学素养、扎实的数理化和地球科学基础、较强的动手实践能力、创新意识和科研能力、较宽的国际视野和较好的国际交流与合作能力。预期本专业毕业生能够成为国内外固体矿产资源研究领域中的中坚力量。

专业毕业要求：

1. 基础知识：能够掌握数学、物理学、化学、地球科学的基本理论、基本知识；
2. 问题分析：能够应用数学、物理学、化学、地球科学的基本原理，识别、表达、并通过文献研究分析矿床学和固体矿产勘查有关问题；
3. 设计/开发解决方案：能够设计针对矿床学和固体矿产勘查问题的解决方案，并能够在设计环节中体现创新意识，考虑社会、健康、安全、法律、文化以及环境等因素；
4. 研究：能够基于科学原理并采用科学方法对矿床学和固体矿产勘查问题进行研究，包括设计实验、分析与解释数据、并通过信息综合得到合理有效的结论；
5. 使用现代工具：能够针对矿床学和固体矿产勘查问题，开发、选择与使用恰当的地质调查技术、矿床研究方法、地球化学分析测试技术和信息技术；
6. 专业与社会：能够基于矿床学和固体矿产勘查专业相关背景知识进行合理分析，评价问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任；
7. 环境和可持续发展：能够理解和评价针对固体矿产勘查中复杂工程问题的专业工程实践对环境、社会可持续发展的影响；
8. 职业规范：具有人文社会科学素养、社会责任感，能够在矿床学研究和固体矿产勘查实践中理解并遵守工程职业道德和规范，履行责任；
9. 个人和团队：具有较强的团队精神，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；
10. 沟通：能够就矿床学和固体矿产勘查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。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；
11. 项目管理：理解并掌握工程管理原理与经济决策方法，并能在多学科环境中应用；
12. 终身学习：具有自主学习和终身学习的意识，有不断学习和适应发展的能力；

毕业要求实现途径：

序号	毕业要求	实现途径（教学过程）
1	<p>基础知识：能够掌握数学、物理学、化学、地球科学的基本理论、基本知识；</p>	<p>①课堂教学：高等数学 B、概率论与数理统计 B、线性代数 B、大学物理 B、物理实验 B、大学化学 B、物理化学、固体地球物理学、有机地球化学、岩体力学、普通地质学、测量学 A、结晶学与矿物学、晶体光学及光性矿物学、岩石学、地层及古生物学、构造地质学 A、地球化学、资源导论、矿石学、矿田构造学、矿床学 A、矿产勘查理论与方法 A、数字地质学 B</p> <p>②课外学习：专题讲座、学术报告等；</p>
2	<p>问题分析：能够应用数学、物理学、化学、地球科学的基本原理，识别、表达、并通过文献研究分析矿床学和固体矿产勘查有关问题；</p>	<p>①课堂教学：测量学实习 A、地质认识实习（北戴河）、地质填图实习（周口店）、毕业实习、毕业论文、矿床地质实训、海外地质实习、实验室科研训练等；</p> <p>②课外学习：课程综合作业、科研立项、寻找李四光活动、学科前沿调研报告等；</p>
3	<p>设计/开发解决方案：能够设计针对矿床学和固体矿产勘查问题的解决方案，并能够在设计环节中体现创新意识，考虑社会、健康、安全、法律、文化以及环境等因素；</p>	<p>①课堂教学：地质认识实习（北戴河）、地质填图实习（周口店）、毕业实习、毕业论文、矿床地质实训、海外地质实习、实验室科研训练等；</p> <p>②课外学习：课程综合作业、科研立项、寻找李四光活动、学科前沿调研报告等；</p>
4	<p>研究：能够基于科学原理并采用科学方法对矿床学和固体矿产勘查问题进行研究，包括设计实验、分析与解释数据、并通过信息综合得到合理有效的结论；</p>	<p>①课堂教学：毕业实习、毕业论文、矿床地质实训、海外地质实习、实验室科研训练等；</p> <p>②课外学习：课程综合作业、科研立项、寻找李四光活动、学科前沿调研报告等；</p>
5	<p>使用现代工具：能够针对矿床学和固体矿产勘查问题，开发、选择与使用恰当的地质调查技术、矿床研</p>	<p>①课堂教学：矿产综合勘查技术、大学英语、C 语言程序设计 B、C 语言程序设计课程设计 B、专业文献检索、专业英语、地质认识实习（北戴河）、地质填图实习（周口店）、毕业</p>

序号	毕业要求	实现途径（教学过程）
	究方法、地球化学分析测试技术和信息技术；	实习、毕业论文、矿床地质实训、海外地质实习、实验室科研训练等； ② 课外学习 ：课程综合作业、科研立项、专题讲座、学科前沿调研报告等；
6	专业与社会：能够基于矿床学和固体矿产勘查专业相关背景知识进行合理分析，评价问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任；	① 课堂教学 ：矿产资源法律法规、测量学实习 A、地质认识实习（北戴河）、地质填图实习（周口店）、毕业实习、毕业论文、矿床地质实训、海外地质实习等； ② 课外学习 ：课程综合作业、科研立项、专题讲座等；
7	环境和可持续发展：能够理解和评价针对固体矿产勘查中复杂工程问题的专业工程实践对环境、社会可持续发展的影响；	① 课堂教学 ：矿产资源经济学、矿业环境保护、测量学实习 A、地质认识实习（北戴河）、地质填图实习（周口店）、毕业实习、毕业论文、矿床学教学实习（大冶）等； ② 课外学习 ：课程综合作业、科研立项、专题讲座等。
8	职业规范：具有人文社会科学素养、社会责任感，能够在矿床学研究和固体矿产勘查实践中理解并遵守工程职业道德和规范，履行责任；	① 课堂教学 ：马克思主义基本原理、毛泽东思想和中国特色社会主义体系概论、中国近现代史纲要、思想道德修养与法律基础、军事理论及军事训练、体育等； ② 课外学习 ：入学教育、大学生心理健康教育、形势与政策教育、就业指导、毕业教育、班主任和辅导员的专题讲座、学术讲座等；
9	个人和团队：具有较强的团队精神，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；	① 课堂教学 ：测量学实习 A、地质认识实习（北戴河）、地质填图实习（周口店）、毕业实习、毕业论文、矿床地质实训、海外地质实习、实验室科研训练等； ② 课外学习 ：课程综合作业、科研立项、寻找李四光活动等；
10	沟通：能够就矿床学和固体矿产勘查问题与业界同行及社会公众进	① 课堂教学 ：专业英语、测量学实习 A、地质认识实习（北戴河）、地质填图实习（周口

序号	毕业要求	实现途径（教学过程）
	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。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；	店)、毕业实习、毕业论文、矿床地质实训、海外地质实习等； ② 课外学习 ：学科前沿调研报告、科技论文报告会、学术讲座、撰写科技论文、参加教师科研项目等；
11	项目管理：理解并掌握工程管理原理与经济决策方法，并能在多学科环境中应用；	① 课堂教学 ：经济管理类选修课、测量学实习 A、地质认识实习（北戴河）、地质填图实习（周口店）、毕业实习、毕业论文、矿床地质实训、海外地质实习等； ② 课外学习 ：科研立项、生产实习、参加教师科研项目等；
12	终身学习：具有自主学习和终身学习的意识，有不断学习和适应发展的能力；	① 课堂教学 ：毕业实习、毕业论文、思想道德修养与法律基础等、专业英语； ② 课外学习 ：课程综合作业、学科竞赛、发明创造、科研报告、科研立项等；

主干学科：地质资源与地质工程。

专业核心课程：矿床学、矿石学、矿田构造学、矿产勘查理论与方法、数字地质学、矿床地球化学、流体包裹体、矿床学前沿、现代测试技术。

主要专业实验：常见矿物、岩石、化石等鉴定实验，矿石鉴定与可开发性分析与评价，矿床学研究常见分析测试技术，找矿信息挖掘与定量评价，勘查工程的初步设计与储量计算。

主要实践性教学环节：测量学实习、地质认识实习（北戴河）、地质填图实习（周口店）、矿床地质实训、实验室科研训练、海外地质实习、毕业实习、毕业论文。

毕业学分要求：172。

学制与学位：四年，工学学士。

本专业学生可以辅修的其他专业：环境工程、地质工程、石油工程、勘查技术与工程、宝石及材料工艺学。

相近专业：地质学。

Program for Exploration Engineering of Mineral Resources (Basic Class)

Specialty and Code: Exploration Engineering of Mineral Resources (Basic Class) 081403

Education Objective:

This program aims to train students to become innovative and research-typed talents in fields of ore deposit research and solid mineral exploration with all around development of moral, intellectual, physical, aesthetics, and labor education. Students are expected to obtain humanities and social science literacy, solid foundation of mathematics, physics, chemistry and earth science, strong practical ability, innovation consciousness and scientific research ability, wide international perspective and strong intercultural communication ability. The graduates are expected to become major force in research fields of solid mineral resources in the future.

Graduation Requirements:

1. Basic knowledge: Students are required to master the basic theory and knowledge of mathematics, physics, chemical, and earth science.
2. Problem analysis: Students are expected to be able to identify, express and analyze complex problems in fields of ore deposit research and solid mineral exploration through literature research and using basic principles of applied mathematics, physics, chemical, and earth science.
3. Solution design/development: Students are asked to be able to provide solutions for complex problems in fields of ore deposit research and solid mineral exploration, design system, unit (component) or technical process which meet the specific needs, and embody the sense of innovation and consider social, health, safety, law, culture and environment factors in the design processes;
4. Research: Students are required to be able to carry out the research on complex problems in fields of ore deposit research and solid mineral exploration based on principles of science and scientific methods which include experimental design, data analysis and interpretation, and to draw reasonable and reliable conclusions through information synthesis;
5. Modern tools application: Students are expected to be able to develop, select and use appropriate geological survey technology, ore deposit research methods, geochemical analysis and testing technology, and information technology tools to solve out complex problems in fields of ore deposit research and solid mineral exploration;

6. Profession and society: Students are asked to be able to analyze social problems based on fields of ore deposit research and solid mineral exploration related background knowledge, evaluate impacts on society, health, safety, law and culture during the solution process of complex engineering problems, and understand the responsibilities that should be borne;
7. Environment and sustainable development: Students are supposed to be able to understand and evaluate impacts of professional engineering practice for the complex engineering problems in solid mineral exploration on environment and sustainable development of society.
8. Professional standard: Students are expected to obtain humanities and social science literacy and social responsibility, and be able to understand and comply with the engineering ethics and standards in the practice of fields of ore deposit research and solid mineral exploration, and fulfill the responsibility;
9. Individual and team work: Students are expected to have strong team spirit, and required to be able to assume the role of individual, team member, and the person in charge;
10. Communication: Students are asked to be able to effectively communicate and exchange with industry peers and the public on complex engineering problems in fields of ore deposit research and solid mineral exploration, including report writing, document designing, statement presenting, and opinion expressing. Students should also have a certain international perspective, and can exchange and communicate in cross-cultural settings;
11. Project management: Students are asked to be able to understand and master the engineering management principles and economic decision-making methods, and apply them in multi discipline environment;
12. Life-time learning: Students should have autonomous and lifelong learning consciousness, and possess the ability of continuous learning and development adapting.

Graduation requirements and ways to achieve:

No.	Graduation requirements	Ways to achieve (teaching process)
1	Basic knowledge: Students are required to master the basic theory and knowledge of mathematics, physics, chemical, and earth science;	① Classroom Teaching: Advanced Mathematics B, Probability and Mathematics Statistics B, Linear Algebra B, College Physics B, Physics Experiments B, College Chemistry B, Physical Chemistry, Solid Geophysics, Organic Geochemistry, Rock Mass Mechanics, Physical Geology, Surveying A, Crystallography and Mineralogy, Crystal Optics and Optical Mineralogy, Introduction to Petrology, Stratigraphy and Paleontology, Structural Geology A, Geochemistry, Introduction to Exploration Engineering of Mineral Resources, Ore Petrology, Structure of Ore Field, Ore Deposits A, Theories and Methods of Mineral Exploration, Digital

No.	Graduation requirements	Ways to achieve (teaching process)
		Geology B. ② Out-of-class Learning : Lectures on special topics, Academic report, etc.
2	Problem analysis: Students are expected to be able to identify, express and analyze complex engineering problems in fields of ore deposit research and solid mineral exploration through literature research and using basic principles of applied mathematics, physics, chemistry, and earth science;	① Classroom Teaching : Teaching Practice of Surveying A, Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, Laboratorial Scientific Research Training, etc. ② Out-of-class Learning : Course homework, Research Training Plan, Activity for Searching Li Si-guang, Survey Report of Academic Foreland, etc.
3	Solution design/development: Students are asked to be able to provide solutions for complex problems in fields of ore deposit research and solid mineral exploration, design system, unit (component) or technical process which meet the specific needs, and embody the sense of innovation and consider social, health, safety, law, culture and environment factors in the design processes;	① Classroom Teaching : Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, Laboratorial Scientific Research Training, etc. ② Out-of-class Learning : Course homework, Research Training Plan, Activity for Searching Li Si-guang, Survey Report of Academic Foreland, etc.
4	Research: Students are required to be able to carry out the research on complex problems in fields of ore deposit research and solid mineral exploration based on principles of science and scientific methods which include experimental design, data analysis and interpretation, and to draw reasonable and reliable conclusions through information synthesis;	① Classroom Teaching : Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, Laboratorial Scientific Research Training, etc. ② Out-of-class Learning : Course homework, Research Training Plan, Activity for Searching Li Si-guang, Survey Report of Academic Foreland, etc.
5	Modern tools application: Students are expected to be able to develop, select and use appropriate geological survey technology, ore deposit research methods, geochemical analysis and testing technology, and information technology tools to solve out complex problems in fields of ore deposit research and solid mineral exploration;	① Classroom Teaching : Comprehensive Exploration Techniques of Mineral Resources, College English, Program Design in C Language B, Course Design for Program Design in C Language B, Specialized Information Retrieval, Professional English, Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, Laboratorial Scientific Research Training, etc. ② Out-of-class Learning : Course homework, Research Training Plan, Lectures on special topics, Survey Report of Academic Foreland, etc.
6	Profession and society: Students are asked to be able to analyze social	① Classroom Teaching : Laws and Regulations of Mineral Resources, Teaching Practice of Surveying

No.	Graduation requirements	Ways to achieve (teaching process)
	problems based on fields of ore deposit research and solid mineral exploration related background knowledge, evaluate impacts on society, health, safety, law and culture during the solution process of complex problems, and understand the responsibilities that should be borne;	A, Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, etc. ② Out-of-class Learning : Course homework, Research Training Plan, Lectures on special topics, etc.
7	Environment and sustainable development: Students are supposed to be able to understand and evaluate impacts of professional engineering practice for the complex engineering problems in solid mineral exploration on environment and sustainable development of society.	① Classroom Teaching : Economics of Mineral Resources, Environment Protection in Mining and Mineral Exploitation, Teaching Practice of Surveying A, Teaching Practice of Geology (Beidaihe) , Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, etc. ② Out-of-class Learning : Course homework, Research Training Plan, Lectures on special topics, etc.
8	Professional standard: Students are expected to obtain humanities and social science literacy and social responsibility, and be able to understand and comply with the engineering ethics and standards in the practice of ore deposits research and solid mineral exploration, and fulfill the responsibility;	① Classroom Teaching : Basic Principles of Marxism, Mao Tse-tung Thought and Introduction to the Theoretical System of Socialism with Chinese Characteristics, The Outline of Modern and Contemporary History of China, Ideological and Moral Culture and Legal Basis, Military Theory and Training, Physical Education, etc. ② Out-of-class Learning : Entrance Education, Student Psychologically Healthy Education, Policy and Situation Education, Guide for Career, Education for Graduation, Special Lectures by Class Leader and Counselor, Academic Lecture, etc.
9	Individual and team work: Students are expected to have strong team spirit, and required to be able to assume the role of individual, team member, and the person in charge;	① Classroom Teaching : Teaching Practice of Surveying A, Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, Laboratorial Scientific Research Training, etc. ② Out-of-class Learning : Course homework, Research Training Plan, Activity for Searching Li Si-guang, etc.
10	Communication: Students are asked to be able to effectively communicate and exchange with industry peers and the public on complex problems in fields of ore deposit research and solid mineral exploration, including report writing, document designing, statement presenting, and opinion expressing. Students should also have a certain international perspective,	① Classroom Teaching : Specialized English, , Teaching Practice of Surveying A, Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, etc. ② Out-of-class Learning : Survey Report of Academic Foreland, Meeting on Scientific Research, Academic Lectures, Writing on

No.	Graduation requirements	Ways to achieve (teaching process)
	and can exchange and communicate in cross-cultural settings;	Scientific Research, Taking part in Scientific Research Projects, etc.
11	Project management: Students are asked to be able to understand and master the engineering management principles and economic decision-making methods, and apply them in multi discipline environment;	① Classroom Teaching : Economy and Management Courses, Geologic Survey for Mineral Resources, Teaching Practice of Surveying A, Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Graduation, Graduation Thesis, Practice for Ore Deposit Geology, Overseas Practice of Geology, etc. ② Out-of-class Learning : Research Training Plan, Practice for Graduation, Taking part in Scientific Research Projects, etc.
12	Life-time learning: Students should have autonomous and lifelong learning consciousness, and possess the ability of continuous learning and development adapting.	① Classroom Teaching : Practice for Graduation, Graduation Thesis, Ideological and Moral Culture and Legal Basis, Professional English, etc. ② Out-of-class Learning : Course homework, Subject contest, Invention and creation, Research report, Research Training Plan, etc.

Major Disciplines: Earth Resources and Geological Engineering

Main Courses: Ore Deposits, Ore Petrology, Structure of Ore Field, Exploration Theories and Methods of Mineral Resources, Digital Geology, Geochemistry of Ore Deposits, Fluid Inclusions in Ore Deposits, Ore Deposit Frontier, Modern analytical technology, etc.

Lab Experiments: Identification of Mineral, Rock, and Fossil; Analysis of Exploitability and Potential Evaluation of Ores; Synthetic Analysis and Interpretation of Geological, Geophysical, Geochemical, and Remote Sensing Data and Information; Mining of Mineral Resources Information and Quantitative Assessment; Sampling, Design and Reserve Calculation of Exploration Engineering.

Practical Work: Teaching Practice of Surveying A, Teaching Practice of Geology (Beidaihe), Teaching Practice of Geology (Zhoukoudian), Practice for Ore Deposit Geology, Overseas Practice of Geology, Laboratorial Scientific Research Training, Practice for Graduation, Thesis for Graduation.

Requirements for Graduation Credits: 172.

Duration & Degree Granted: Four years, Bachelor of Engineering.

Recommended minor: Environmental Engineering, Geology Engineering, Petroleum engineering, Exploration Technology and Engineering, Gemstone and Material Technology.

Related Specialties: Geology.

资源勘查工程专业(基地班)课程教学计划表

Course Descriptions of Exploration Engineering of Mineral Resources (Technological Basic Class)

课程类别 Classification	课程编号 Code	课程名称 Course Name	学分 Crts	课内总学时 Hrs	学时分类 Class Hours					先修课程 Prerequisite courses	学期学分分配 Semester Credits									
					课内学时		课外学时				一 1st	二 2nd	三 3rd	四 4th	五 5th	六 6th	七 7th	八 8th		
					讲课 Lec.	课内实验 Lab	实验/ 科研 实践 Lab/ Res.	研讨 Dis	素质 拓展 Exp											
通识教育课 Liberal Education Courses	必修 Compulsory	12005 200 思想道德修养与法律基础 Morality Education and Fundamentals of Law	3	48	32	16					3									
		14300 300 军事理论 Military Theory	2	36	36						2									
		11307 6*0 体育 Physical Education	4	144	144						1	1	1	1						
		10923 4*0 大学英语 College English	9	144	144					48	3	3	3							
		12005 300 形势与政策 Situation and Policy	2	32	32						每学期平均分配									
		21929 102 C 语言程序设计 B Program Design in C Language B	2	32	32			8		8	2									
		11706 200 马克思主义基本原理概论 Principles of Marxism	3	48	48							3								
		11706 500 毛泽东思想和中国特色社会主义理论体系概论 Introduction to Mao Tse-tung Thought and the Theoretical System of Socialism with Chinese Chareacteristics	4	64	64								4							
		11711 800 中国近现代史纲要 The Essentials of Modern Chinese History	2	32	32								2							
		选修 Elective	20216 700 矿产资源法律法规(指选) Laws and Regulations of Mineral Resources	1.5	24	24														1.5
生态学概论 Introduction to Ecology	1.5		24	24																
包括生态学概论、矿产资源法律法规两门必修课程总计12学分,含创新创业选修课学分,跨学科选修课不低于4学分	9		144	144																

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					课内学时		课外学时				一 1st	二 2nd	三 3rd	四 4th	五 5th	六 6th	七 7th	八 8th
					讲课 Lec.	课内实验 Lab	实验/ 科研 实践 Lab/ Res.	研讨 Dis	素质 拓展 Exp									
	小计 Sum		43	772	756	16	8	0	56		11	7	10	1	0	0	0	1.5
学科基础课 Disciplinary Fundamental Courses	20212 900	资源导论 Introduction to Mineral Resources	1	16	16						1							
	21212 7*2	高等数学 B Advanced Mathematics B	10	160	160						4	6						
	20326 902	大学化学 B College Chemistry B	3.5	56	56						3.5							
	20327 002	大学化学实验 B College Chemistry Experiments B	1.5	36		36					1.5							
	21130 401	测量学 A Surveying A	2	32	32		16					2						
	21213 0*2	大学物理 B College Physics B	7	112	112							3.5	3.5					
	21216 902	物理实验 B Physics Experiments B	1.5	48	4	44						1.5						
	21212 802	线性代数 B Linear Algebra B	2.5	40	40								2.5					
	21213 502	概率论与数理统计 B Probability and Mathematics' Statistics B	2.5	40	40								2.5					
	20327 8*0	物理化学 B Physical Chemistry B	3	48	48		16							1.5	1.5			
	20517 100	岩体力学 B Rock Mass Mechanics B	2.5	40	32	8								2.5				
	20119 600	普通地质学 Physical Geology	2.5	40	40		8				2.5							
	20104 600	结晶学与矿物学 Crystallography and Mineralogy	5	80	36	44					5							
	20115 500	晶体光学及光性矿物学 Crystal Optics and Optical Mineralogy	3	48	14	34						3						
	20119 900	岩石学导论 Petrology	5	80	40	40							5					
	20118 300	地层及古生物学 Stratigraphy and Paleontology	3	48	36	12								3				
	20120 200	地球化学 Geochemistry	3	48	48			16						3				
	20104 001	构造地质学 A Structural Geology A	4	64	36	28								4				
	20603 800	固体地球物理学概论 Solid Geophysics	2.5	40	38	2								2.5				

课程类别 Classification	课程编号 Code	课程名称 Course Name	学分 Crs	课内总学时 Hrs	学时分类 Class Hours					先修课程 Prerequisite courses	学期学分分配 Semester Credits							
					课内学时		课外学时				一 1st	二 2nd	三 3rd	四 4th	五 5th	六 6th	七 7th	八 8th
					讲课 Lec.	课内实验 Lab	实验/ 科研 实践 Lab/ Res.	研讨 Dis	素质 拓展 Exp									
	小计 Sum		65	1076	828	248	40	16	0		17.5	16	13.5	16.5	1.5	0	0	0
专业主干课 Main Specialty Courses	20224 600	矿石学 Ore Petrology	1.5	24	24		16							1.5				
	20222 501	矿床学 A Ore Deposits A	3	48	48		32			岩石学 Petrology					3			
	20224 700	流体包裹体 Fluid Inclusion	1	16	16		16								1			
	20224 802	数字地质学 B Digital Geology B	2	32	32		16								2			
	20120 300	矿床地球化学 Geochemistry of Ore Deposits	1.5	24	24		8										1.5	
	20224 900	矿田构造学 Structure of Ore Field	1.5	24	24		8			矿床学 A Ore Deposits A							1.5	
	20203 000	矿产勘查理论与方法 A Theories and Methods of Mineral Exploration A	3	48	48		32			矿床学 A Ore Deposits A							3	
	20225 000	矿床学前沿* Ore Deposit Frontier*	2	32	32												2	
		小计 Sum		15.5	248	248	0	128	0	0	0	0	0	0	1.5	6	8	0
专业选修课 Specialty Elective Courses		可按方向设课, 具体见专业选修课列表	10	160	160													
	合计 Sub-total		133.5	2256	1992	264	176	16	56	0	28.5	23	23.5	19	7.5	8	0	1.5
实践环节 Practical Work	44300 400	军事训练 Military Training	2	2周							2							
	41919 002	C语言课程设计 B Course Design for Program Design in C Language B	1.5	1.5周							1.5							
	41120 901	测量学教学实习 A Surveying Practice A	1	1周								1						

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					课内学时		课外学时				一 1st	二 2nd	三 3rd	四 4th	五 5th	六 6th	七 7th	八 8th
					讲课 Lec.	课内实验 Lab	实验/ 科研 实践 Lab/ Res.	研讨 Dis	素质 拓展 Exp									
	40115 200	地质认识实习(北戴河) Primary Field Training (Beidaihe)	2	2周							2							
	40115 602	地质教学实习(周口店) Geological Field Training (Zhoukoudian)	4	4周									4					
	40115 702	地质教学实习(秭归) Geological Field Training (Zigui) B	2	2周									2					
	40225 100	矿床地质实训 Practice for Ore Deposit Geology	3	3周												3		
	40225 200	实验室科研训练 Laboratorial Scientific Research Training	2	2周													2	
	40225 400	毕业实习 Graduation Practice	6	6周													6	
	40225 500	毕业设计(论文) Graduation Thesis	10	10周														10
	小计 Sum		33.5	33.5周							3.5	3	0	6	0	3	8	10
创新创业自主学习 Freedom study		社会调查 Social Investigation	2															
		其他(学科竞赛、发明创造、 科研报告) Others (Contest, Invention, Innovation and Research Presentation)	3															
		小计 Sum	5															
总计 Total			172	2256+ 33.5周	1992	264	176	16	56	0	32	26	23.5	25	7.5	11	8	11.5
专业选修课 Specialty Elective Courses	20216 800	专业英语* Professional English*	2	32	20	12								2				
	20110 400	有机地球化学 Organic Geochemistry	2	32	24	8								2				
	20222 302	石油与天然气地质学 B Petroleum and natural gas geology B	3	48	48		16							4				

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					课内学时		课外学时				一 1st	二 2nd	三 3rd	四 4th	五 5th	六 6th	七 7th	八 8th
					讲课 Lec.	课内实验 Lab	实验/ 科研 实践 Lab/ Res.	研讨 Dis	素质 拓展 Exp									
	20225600	矿产综合勘查技术 Comprehensive Exploration Techniques of Mineral Resources	3	48	48										3			
	20225700	盆地与成矿 Basin and Metallogeny	2	32	32										2			
	20217100	海洋地质学 Marine Geology	3	48	48											3		
	20409102	水文地质学基础 B Hydrologic Geology B	2.5	40	32	8										2.5		
	20216900	专业文献检索 Specialized Information Retrieval	1	16	12	4										1		
	20225800	大地构造与成矿 Geotectonics and Metallogeny	2	32	32											2		
	40225900	海外地质实习* Overseas Practice of Geology*	3	48		48										3		
	20226000	现代测试分析技术 Modern Analytical Technology	2	32	16	16										2		
	20220000	矿产资源经济学 Economics of Mineral Resources	2.5	40	40												2.5	
	20203700	矿业环境保护 Environment Protection in Mining and Mineral Exploitation	2	32	32												2	

注：全英课程须在课程名称后打*标出，通识教育选修课学分未列入具体学期，学院须根据学校创新创业自主学习学分认定一览表制订实施细则。

资源勘查工程(基地班)专业课程分类统计

课程类别 统计	通识教育课程 Liberal Education Courses		学科基础课 Disciplinary Fundamental Courses	专业主干课 Main Specialty Courses	专业选修课 Specialty Elective Courses	实践环节 Practical Work	创新创业自主学习 Freedom Study	学时总计 Total Hour	学分总计 Total Credits
	必修	选修							
学时/学分	580/31	192/12	1076/65	248/15.5	160/10	33.5周 /33.5	80/5	2256+33.5周	172
学分所占比例	25%		37.8%	9%	5.8%	19.5%	2.9%		100%