

# 海洋资源与环境专业培养方案

## 一、专业培养目标

本专业培养具有良好的思想道德素质和较高的人文科学素养，具有“品德优良、基础厚实、知识广博、专业精深”，具备坚实的数学、物理、化学、地质学以及海洋学方面的基本理论、基本知识和实验技能，系统掌握海洋地质、海洋资源等专业知识和专项技能，具有能在海洋科学及相关领域从事科研、教学、管理及海上作业的高素质专门人才和具有自主学习能力、批判思维能力、创新创业能力、国际视野及正确海洋观的海洋科学类精英人才。

## 二、毕业要求

毕业生应获得以下几方面的知识和能力：

- (1) 掌握数学、物理、化学等方面的基本理论和基本知识；
- (2) 掌握海洋地质资源的基本理论和基本知识，具有从事海洋调查研究的基本能力；
- (3) 掌握资料查询、文献检索及运用现代信息技术获取相关信息的基本方法；具有一定的实验设计，归纳、整理、分析实验结果，撰写论文，参与学术交流的能力；
- (4) 熟悉国家海洋科学技术政策、知识产权、安全条例等有关政策和法规；
- (5) 了解海洋科学的发展动向和海洋地质资源方向的一般原理和知识，能跟踪国际海洋科学研究的方向；
- (6) 既具有一定的科学思维、创新创业和国际交流能力，又富有人文素质和社会担当的合格人才。

## 三、主干学科

海洋资源与环境。

## 四、学制与学位

学制四年。学生修满规定的最低毕业学分，达到毕业要求后，授予理学学士学位。

## 五、核心课程

本专业以海洋地质资源方向为主，核心课程包括：海底与沉积盆地构造分析、沉积岩与沉积相、海洋地球物理探测、沉积盆地分析原理与应用、海洋地质资源与评价、古生物与地史、海洋油气地质学、层序地层学、测井地质学、专业英语、海洋调查技术、地球化学、学科前沿课等。

实践课程：军事理论及训练、思想政治社会实践、实验物理、实验化学。学院专业综合性实验课：北戴河海洋地质认知实习（3周）、周口店教学实习（5周）、专业生产实习（4周）和毕业设计（论文）（12周）。

# Undergraduate Training Programme in Marine Resources and Environment

## 1. Academic Objectives

This major requires good ideological and moral qualities and higher humanistic qualities with “good virtues, solid foundation, broad knowledge, sophisticated profession”. Students will become talented persons with solid foundations of basic theories, basic knowledge and experiment skills in mathematics, physics, chemistry, biology, geology and marine sciences, systematically grasping professional knowledge and specialized skills of marine geology and marine resources, with the self-learning ability, critical thinking ability, innovation and entrepreneurship ability, international perspective and accurate ocean views.

## 2. Graduation Requirements

Graduates should acquire knowledge and ability in the following aspects:

- (1) Grasping basic theories and knowledge of mathematics, physics, chemistry and etc.
- (2) Grasping basic theories and knowledge of ocean sciences and marine geological resources, having basic ability of ocean investigation research.
- (3) Grasping basic methods of data and material inquiry, literature search and obtaining information using modern information technology, having specific abilities of experiment design, summary, results analysis, writing papers and academic exchange.
- (4) Being familiar with technology and policy of ocean sciences, intellectual property and safety regulations.
- (5) Having an understanding of development of ocean sciences and general theories and knowledge of relevant majors, with the ability of tracking international ocean scientific researches.
- (6) With specific abilities of scientific thinking, innovation and pioneering and international exchange and being qualified talents of humanistic quality and social responsibility.

## 3. Main disciplines

Marine Resources and Environment.

## 4. Length of Course and Degree

The length of schooling is four years of full-time study. Students will be awarded the Bachelor Degree of Science when they have completed the required minimum credits and have met all other requirements.

## 5. Core Courses

The core courses of this major include: Structural Analysis of Seafloor and Sedimentary Basins, Sedimentary Rocks and Facies, Marine Geophysics Exploration, Principles and Application of Sedimentary Basin Analysis, Marine Geological Resources and Evaluation, Paleontology and geologic history, Marine Oil-gas Geology, Sequence Stratigraphy, Professional English, Marine Surveying Technology, Marine Chemistry, Discipline Frontiers etc.

Practice teaching includes military theory and training, political social practice, experimental physics, experimental chemistry, professional and comprehensive experiment course of the school (4 weeks), marine geology field trip in Beidaihe area (3 weeks), teaching practice in Zhoukoudian area (5 weeks), professional practice (4 weeks) and graduate design (thesis) (12 weeks).

## 六、最低毕业总学分要求及学分分配 (Minimum Required Credits and Distribution)

课程模块 Course Module	课程类别 Course Classification	学时数 Hours	学分 Credits	学 期 Semester										
				1	2	1 夏	3	4	2 夏	5	6	3 夏	7	8
通识教育 Liberal Education	通识教育必修课程 Required Courses of General Education	730	41	11	13	1	4	5		3	1			2
	通识教育选修课程 Selective Courses of General Education	192	12											
专业教育 Professional Education	学科基础课程 Disciplinary Fundamental Courses	712	44.5	10	14		10.5	7		3				
	专业核心课程 Specialized Fundamental Courses	528	33				2	10		9	12			
	专业拓展课程 Specialized Development	80	5				2			2	3			
实践教育 Practical Education	课程实践 Course Practice	26 周\224	29		3	7	1		5		4	4		6
	课外实践 Extracurricular practice		6											
必修课总学分 Required course credits				147.5										
选修课总学分 Elective course credits				23										
最低毕业总学分 Total Credits				170.5										

## 七、课程设置 (Curriculum)

### 1、通识教育必修课程 (Required Courses of General Education): 730 学时(730hours), 41 学分(41 Credits)

课程代码 Code	课程名称 Courses Name	总学时 Hours	学分 Credits	讲课 学时 Lec.	实验 学时 Exp.	线上 学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
GR181009	思想道德与法治 Ideological Morality and Rule of Law	48	3	40	8		考试 Exam	1	
GR181008	中国近现代史纲要 Essentials of Modern Chinese History	48	3	40	8		考试 Exam	2	
GR182014	马克思主义基本原理 Fundamental Principles of Marxism	48	3	40	8		考试 Exam	3	
GR182024	毛泽东思想和中国特色社会主义理论体系 概论 Introduction to Mao Zedong Thoughts and Theoretical System of the Chinese Characteristic Socialism	32	2	32			考试 Exam	4	
GR182022	习近平新时代中国特色社会主义思想概论 Introduction to Xi Jinping Thoughts on Socialism with Chinese Characteristics in the New Era	48	3	48			考试 Exam	5	
GR181013	形势与政策 (1) Situation and Policy(1)	4	0.25	4			考查 Term Paper	1	
GR181014	形势与政策 (2) Situation and Policy(2)	4	0.25	4			考查 Term Paper	2	
GR181015	形势与政策 (3) Situation and Policy(3)	4	0.25	4			考查 Term Paper	3	
GR181016	形势与政策 (4) Situation and Policy(4)	4	0.25	4			考查 Term Paper	4	
GR181017	形势与政策 (5) Situation and Policy(5)	4	0.25	4			考查 Term Paper	5	
GR181018	形势与政策 (6) Situation and Policy(6)	4	0.25	4			考查 Term Paper	6	
GR181019	形势与政策 (7) Situation and Policy(7)	4	0.25	4			考查 Term Paper	7	
GR181020	形势与政策 (8)	4	0.25	4			考查	8	

	Situation and Policy(8)						Term Paper		
GR181013	形势与政策(1) Situation and Policy(1)	4	0.25	4			考查 Term Paper	1	
GR301004	大学生职业生涯规划与就业指导(1) Career Planning and Employment Guidance for University Students (1)	20	1	16	4		考试 Exam	2	
GR303005	大学生职业生涯规划与就业指导(2) Career Planning and Employment Guidance for University Students (2)	18	1	12	6		考试 Exam	6	
GR301005	大学生心理素质教育(1) Mental Health (1)	16	1	16	0		考查 Term Paper	1	
GR303005	大学生心理素质教育(2) Mental Health (2)	16	1	16	0		考查 Term Paper	5	
GR301024	劳动教育与双创实践(1)Labor Education and Innovation and Entrepreneurship Practice(1)	16	1	16			考查 TermPaper	2	
GR303025	劳动教育与双创实践(2)Labor Education and Innovation and Entrepreneurship Practice(2)	16	1	16			考查 TermPaper	6	
GR302008	军事理论 Military Theory	36	1	36	0		考试 Exam	1	
GR081071	大学英语(1) College English (1)	64	4	64			考试 Exam	1	
GR081072	大学英语(2) College English (2)	32	2	32			考试 Exam	2	
GR081067	大学英语素质拓展课 Competence-oriented Education for College English	32	2	32			考试 Exam	2	
GR141005	体育(1)(系列课程) Physical Education (1)(series of courses)	32	1		32		考试 Exam	1	
GR141006	体育(2)(系列课程) Physical Education (2) (series of courses)	32	1		32		考试 Exam	2	
GR142007	体育(3)(系列课程) Physical Education (3) (series of courses)	32	1		32		考试 Exam	3	

GR142008	体育(4)(系列课程) Physical Education (4) (series of courses)	32	1		32		考试 Exam	4	
GR041001	大学计算机 College Computer	32	2	16	16		考试 Exam	1	
GR041003	程序设计基础 A Fundamentals of Programming A	64	4	24	24	16	考试 Exam	2	
总计 Total		730	41	492	222	16			

## 2、通识教育选修课程 (Selective Courses of General Education): 192 学时 (192 hours), 12 学分 (12 Credits)

序号 No.	课程类别 Courses Classification	课程名称 Courses Name	学分 Credits	考核方式 Assessment	开课学期 Semester	备注 Notes
1	人文社科类(含在线课程) Humanities and Social Sciences Courses (Inc. Online courses)	见附件 1	7	考查 Term Paper	2-8	4 个类别中选修 7 个学分, 其中,《大学生安全教育》(1 学分) 必选。
2	自然科学类(含在线课程) Natural Science Courses (Inc. Online Courses)	见附件 2		考查 Term Paper	2-8	
3	自然文化类 Natural Culture Courses	见附件 3		考查 Term Paper	2-8	
4	体育与健康类 Sports and health courses	见附件 4		考查 Term Paper	5-8	
5	创新创业教育类 Innovation and Entrepreneurship Courses (Inc. Online Courses)	见附件 5	3	考查 Term Paper	2-8	选修 3 个学分, 其中《新生研讨课》(1 学分) 必选。
6	审美与艺术类 Aesthetics and Art Courses	见附件 6	2	考查 Term Paper	2-4	
总计 Total			12			

## 3、学科基础课程 (Disciplinary Fundamental Courses): 712 学时(712 hours), 44.5 学分(44.5 Credits)

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lec.	实验学时 Exp.	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
DR191003	高等数学 B(1) Advanced Mathematics B(1)	96	6	96			考试 Exam	1	
DR191004	高等数学 B(2)	64	4	64			考试	2	

	Advanced Mathematics B (2)						Exam		
DR192005	线性代数 Linear Algebra	32	2	32			考试 Exam	3	
DR192006	概率论与数理统计 Probability and Mathematics Statistic	48	3	48			考试 Exam	4	
DR191008	大学物理 (1) College Physics (1)	48	3	48			考试 Exam	2	
DR192009	大学物理 (2) College Physics (2)	48	3	48			考试 Exam	3	
DR191010	大学化学 College Chemistry	48	3	48			考试 Exam	1	
SR112102	结晶学与矿物学 Crystallography and Mineralogy	32	2	20	12		考试 Exam	3	
DR011036	地球科学概论 Geosciences	64	4	32	32		考试 Exam	2	
DR112002	海洋科学概论 Introduction to Marine Sciences	48	3	48			考试 Exam	2	
DR112003	海洋地质学 Marine Geology	56	3.5	48	8		考试 Exam	3	
DR112004	岩石学 (含晶体光学) Petrology (Inc. Crystal Optics)	64	4	32	32		考试 Exam	4	
DR113101	物理海洋学 Physical Oceanography	48	3	40	8		考试 Exam	5	
DR110034	海洋资源与环境专业导论 Introduction to Marine Resources and Environment	16	1	16			考查 Term Paper	1	
总计 Total		712	44.5	620	92				

#### 4、专业核心课程 (Specialized Core Courses): 528 学时(528hours), 33 学分( 33Credits)

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lec.	实验 学时	线上 学时	考核 方式	开课 学期	备注
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					Exp.	Online	Assessment	Semester	Notes
SR112103	海底与沉积盆地构造分析 Structural Analysis of Seafloor and Sedimentary Basins	32	2	24	8		考试 Exam	4	
DR112006	沉积岩与沉积相 Sedimentary Rocks and Facies	48	3	42	6		考试 Exam	4	
DR112007	海洋地球物理探测 Marine Geophysics Exploration	64	4	56	8		考试 Exam	6	
SR113040	沉积盆地分析原理与应用 Principles and Application of Sedimentary Basin Analysis	48	3	42	6		考试 Exam	5	
SR113111	海洋地质资源勘探与评价 Marine Geological Resources and Evaluation	48	3	36	12		考试 Exam	6	
SR112104	古生物与地史 Paleontology and geologic history	48	3	40	8		考试 Exam	4	
SR113026	海洋油气地质学 Marine Oil-gas Geology	48	3	44	4		考试 Exam	6	
SR113042	层序地层学 Sequence Stratigraphy	32	2	26	6		考试 Exam	5	
SR113115	测井地质学 Logging Geology	32	2	24	8		考试 Exam	5	
SR113025	专业英语 Professional English	32	2	32			考试 Exam	6	
SR114018	海洋调查技术 Marine Surveying Technology	32	2	30	2		考试 Exam	3	
SR112116	地球化学 Marine Chemistry	32	2	24	8		考试 Exam	4	
SR113117	海洋油气有机地球化学 Marine Petroleum geochemistry	32	2	28	4		考试 Exam	5	
总计 Total		528	33	448	80				

5、专业拓展课程 (Specialized Development Courses) : 80 学时(80 hours), 5 学分(5 Credits)

课程代码 Course Code	课程名称 Courses Name	总学时 Hours	学分 Credits	讲课学时 Lec.	实验学时 Exp.	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
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SR113024	地震地质综合解释与应用 Seismic -geologic Integrated Interpretation and Application	32	2	16	16		考查 Term Paper	6	(三 选 二)
SS112118	地质绘图软件及应用 Geological mapping software and its application	32	2	2	30		考查 Term Paper	3	
SS113119	深海矿产资源研究与开发 Research and development of deep sea mineral resources	32	2	32			考查 Term Paper	5	
	学科前沿课 Discipline Frontiers	16	1	16			考查 Term Paper	6	必选
总计 Total		80	5						

6、课程实践 (Course Practice): 26 周+224 学时 (26 weeks and 224 hours), 29 学分 (29 Credits)

课程 代码 Code	课程名称 Courses Name	总学时 Hours	学分 Credits	考核 方式 Assessment	开课 学期 Semester	备注 Notes
PR311003	军事技能训练 Military Theory and Practice	2 周	1	考查 Term Paper	1 夏	
PR181010	思想政治社会实践 Political Social Practice	32	2	考查 Term Paper	1 夏	
PR191045	实验物理 (1) Physics Experiments (1)	24	1	考试 Exam.	2	
PR192046	实验物理 (2) Physics Experiments (2)	24	1	考试 Exam.	3	
PR191047	实验化学 Chemistry Experiments	48	2	考试 Exam.	2	
PR111028	北戴河海洋认知实习 Marine Geosciences Field trip in Beidaihe	3 周	3	考查 Term Paper	1 夏	
PR012046	周口店地质教学实习 Geological Survey Field trip in Zhokoudian	5 周	5	考查 Term Paper	2 夏	
PR113029	生产实习(海洋资源与环境) Professional Practice	4 周	4	考查 Term Paper	3 夏	
PR114030	毕业论文(海洋资源与环境) Graduation Thesis	12 周	6	考查 Term Paper	8	

PR113032	海底岩石综合分析技术 Comprehensive Analysis Technology of Seafloor Rocks	48	2	考查 Term Paper	6	
PR113035	沉积岩岩心描述及沉积相分析 Core Description of Sedimentary Rocks and Sedimentary Facies Analysis	48	2	考查 Term Paper	6	
总计 Total			29			

### 7、课外实践（Extracurricular practice）：6 学分（6 Credits）

包括主题教育活动、社会实践、志愿服务、勤工助学、学科竞赛、文体活动、创新创业活动、劳动实践等，其学分的认定按照教务处相关规定执行。

Extracurricular practice include Theme Education, Social Practice, Volunteer Service, Work-study Program, Discipline Competition, Cultural and Sports Activities, Innovative and Entrepreneurial Activities, Labor Practice and so on. The recognition of the credits for extracurricular practice shall be implemented according to the regulations of Academic Affairs Office.