

School of Ocean Sciences



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Undergraduate Program in Marine Sciences

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, 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

(Minimum Required Credits and Distribution)

Course module	Course Classification	Hours	Credits	Semester														
				1	2	1	3	4	2	5	6	3	7	8				
Liberal Education	Required Courses of General Education	730	40	11	13	1	4	5		3	1							
	Selective Courses of General Education	192	12															
Professional Education	Disciplinary Fundamental Courses	712	44.5	10	17		11.5	3		3								
	Specialized Fundamental Courses	448\496	28\31				2\3	12\10		8\9	6\9							
	Specialized Development	80	5				2				4				2			
Practical Education	Course Practice	26 +224	30		3	7	1	2	5	0\2	2\0	4						6
	Extracurricular practice		6															
Required course credits				147.5\150.5														
Elective course credits				18														
Total Credits				165.5\168.5														

(Curriculum)

1 (Required Courses of General Education) 730 (730 Hours) 40 (40 Credits)

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
GR181009	Ideological Morality and Rule of Law	48	3	40	8		Exam	1	
GR181008	Essentials of Modern Chinese History	48	3	40	8		Exam	2	
GR182014	Fundamental Principles of Marxism	48	3	40	8		Exam	3	
GR183004	Introduction to Mao Zedong Thoughts and Theoretical System of the Chinese Characteristic Socialism	64	4	48	16		Exam	4	
GR181012	Introduction to Xi Jinping Thoughts on Socialism with Chinese Characteristics in the New Era	32	2	28	4		Exam	5	
GR180005	Situation and Policies	32	2	32			Term Paper	1-8	
GR301004	Career Planning and Employment Guidance for University Students (1)	20	1	16	4		Exam	2	
GR303005	Career Planning and Employment Guidance for University Students (2)	18	1	12	6		Exam	6	
GR301005	Mental Health (1)	16	1	16			Term Paper	1	
GR303005	Mental Health (2)	16	1	16			Term Paper	5	

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
GR302008	Military Theory	36	1	36			Exam	2	
GR081071	College English(1) 1	64	4	64			Exam	1	
GR081072	College English(2) 2	32	2	32			Exam	2	
GR081067	Competence-oriented Education for College English	32	2	32			Exam	2	
GR141005	Physical Education (1) 1	32	1		32		Exam	1	
GR141006	Physical Education(2) 2	32	1		32		Exam	2	
GR142007	Physical Education(3) 3	32	1		32		Exam	3	
GR142008	Physical Education(4) 4	32	1		32		Exam	4	
GR041001	College Computer	32	2	16	16		Exam	1	
GR041003	Fundamentals of Programming A A	64	4	24	24	16	Exam	2	
Total		730	40	492	222	16			

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
DR191003	B (1) Advanced Mathematics B (1)	96	6	96			Exam	1	
DR191004	B (2) Advanced Mathematics B (2)	64	4	64			Exam	2	
DR192005	Linear Algebra	32	2	32			Exam	3	
DR192006	Probability and Mathematics Statistic	48	3	48			Exam	4	
DR191008	1 College Physics (1)	48	3	48			Exam	2	
DR192009	2 College Physics (2)	48	3	48			Exam	3	
DR191010	College Chemistry	48	3	48			Exam	1	
DR111001	Marine Biology	48	3	28	20		Exam	2	
DR011036	Geosciences	64	4	32	32		Exam	2	
DR112002	Introduction to Marine Sciences	48	3	48			Exam	2	
DR113008	Marine Chemistry	48	3	24	24		Exam	3	
DR112003	Marine Geology	56	3.5	48	8		Exam	3	
DR113101	Physical Oceanography	48	3	40	8		Exam	5	
IS110035	Introduction to Marine Science	16	1	16			Term Paper	1	
Total		712	44.5	620	92				

4 (Core Professional Courses)

Marine Geology 448 (448 hours) 28 (28 Credits)

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
SR112102	Crystallography and Mineralogy	32	2	20	12		Exam	3	
DR112004	Petrology (Inc. Crystal Optics)	64	4	32	32		Exam	4	
SR113014	Marine Geochemistry	48	3	38	10		Exam	5	
SR112103	Structural Analysis of Sea floor and Sedimentary Basins	32	2	24	8		Exam	4	
DR112006	Sedimentary Petrology and Facies	48	3	42	6		Exam	4	
DR112007	Marine Geophysics Exploration	64	4	56	8		Exam	6	
SR112104	Paleontology and Geologic History	48	3	40	8		Exam	4	
SR113013	Marine Micropaleontology	48	3	24	24		Exam	5	
SR113011	Quaternary Geology and Environment	32	2	32			Exam	5	
SR113017	Specialty English for Marine Geology and Environment	32	2	32			Exam	6	
Total		448	28	340	108				

(Marine Ecological Environment) :496 (496 hours) 31 (31Credits)

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
SR113012	Marine Geomicrobiology	48	3	32	16		TermPaper	3	
SR113015	Marine Ecology	48	3	40	8		Exam	6	
SR113014	Marine Geochemistry	48	3	38	10		Exam	5	
SR113105	Environmental Chemistry	32	2	20	12		Exam	5	
SR113106	Remote Sensing Technology and Application	32	2	20	12		Exam	6	
SR112107	Comprehensive Petrology	48	3	30	18		Exam	4	
SR113108	Environmental Monitoring and Assessment	32	2	16	16		Exam	6	
SR112104	Paleontology and Geologic History	48	3	40	8		Exam	4	
SR112103	Structural Analysis of Sea floor and Sedimentary Basins	32	2	24	8		Exam	4	
SR112109	Environmental Biological Technology and Applications	32	2	24	8		Exam	4	
SR113110	Environmental Geology in the Coastal Zone	32	2	32			Exam	5	
SR113011	Quaternary Geology and Environment	32	2	32			Exam	5	
SR113017	Specialty English for Marine Geology and Environment	32	2	32			Exam	6	
Total		496	31	380	116				

Course Code	Course Name	Week(hour)	Credits	Assessment	Semester	Notes
PR113029	Professional Practice	4	4	Term Paper	3	
PR113031	Experimental Technique of Marine Geology and Environmental Sciences	48	2	Term Paper	4	
PR113113	Comprehensive Examination Term Paper	48	2	Term Paper	4	

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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.

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- (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 Schooling 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).

(Minimum Required Credits and Distribution)

Course module	Course Classification	Hours	Credits	Semester										
				1	2	3	4	5	6	7	8			
Liberal Education	Required Courses of General Education	730	40	11	13	1	4	5						
	Selective Courses of General Education	192	12											
Professional Education	Disciplinary Fundamental Courses	712	44.5	10	14		10.5	7						
	Specialized Fundamental Courses	528	33				2	10						
Practical Education	Specialized Development	80	5				2							
	Course Practice	26 +224	30		3	7	1		5				4	6
	Extracurricular practice		6											
	Required course credits													152.5
	Elective course credits													18
	Total Credits													170.5

(Curriculum)

1 (Required Courses of General Education) 730 (730 Hours) 40 (40 Credits)

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
GR181009	Ideological Morality and Rule of Law	48	3	40	8		Exam	1	
GR181008	Essentials of Modern Chinese History	48	3	40	8		Exam	2	
GR182014	Fundamental Principles of Marxism	48	3	40	8		Exam	3	
GR183004	Introduction to Mao Zedong Thoughts and Theoretical System of the Chinese Characteristic Socialism	64	4	48	16		Exam	4	
GR181012	Introduction to Xi Jinping Thoughts on Socialism with Chinese Characteristics in the New Era	32	2	28	4		Exam	5	
GR180005	Situation and Policies	32	2	32			Term Paper	1-8	
GR301004	Career Planning and Employment Guidance for University Students (1)	20	1	16	4		Exam	2	
GR303005	Career Planning and Employment Guidance for University Students (2)	18	1	12	6		Exam	6	
GR301005	Mental Health (1)	16	1	16			Term Paper	1	
GR303005	Mental Health (2)	16	1	16			Term Paper	5	

2 (Selective Courses of General Education) 192 (192Hours) 12 (12 Credits)

No.	Courses Classification	Courses Name	Credits	Assessment	Semester	Notes
1	Humanities and Social Sciences Courses (Inc. Online courses)	1	7	Term Paper	2-8	4 7 1
2	Natural Science Courses (Inc. Online Courses)	2		Term Paper	2-8	
3	Natural Culture Courses	3		Term Paper	2-8	
4	Sports and Health Courses	4		Term Paper	5-8	
5	Innovation and Entrepreneurship Courses (Inc. Online Courses)	5	3	Term Paper	2-8	3 1
6	Aesthetics and Art Courses	6	2	Term Paper	2-4	
Total			12			

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
DR191003	B (1) Advanced Mathematics B (1)	96	6	96			Exam	1	
DR191004	B (2) Advanced Mathematics B (2)	64	4	64			Exam	2	
DR192005	Linear Algebra	32	2	32			Exam	3	
DR192006	Probability and Mathematics Statistic	48	3	48			Exam	4	
DR191008	1 College Physics (1)	48	3	48			Exam	2	
DR192009	2 College Physics (2)	48	3	48			Exam	3	
DR191010	College Chemistry	48	3	48			Exam	1	
SR112102	Crystallography and Mineralogy	32	2	20	12		Exam	3	
DR011036	Geosciences	64	4	32	32		Exam	2	
DR112002	Introduction to Marine Sciences	48	3	48			Exam	2	
DR112003	Marine Geology	56	3.5	48	8		Exam	3	
DR112004	Petrology (Inc. Crystal Optics)	64	4	32	32		Exam	4	
DR113101	Physical Oceanography	48	3	40	8		Exam	5	
IS110034	Introduction to Marine Resources and Environment	16	1	16			Term Paper	1	
Total		712	44.5	620	92				

Course Code	Course Name	Hours	Credits	Lecture	Experiment	Online	Assessment	Semester	Notes
SR112103	Structural Analysis of Sea floor and Sedimentary Basins	32	2	24	8		Exam	4	
DR112006	Sedimentary Rocks and Facies	48	3	42	6		Exam	4	
DR112007	Marine Geophysics Exploration	64	4	56	8		Exam	6	
SR113040	Principles and Application of Sedimentary Basin Analysis	48	3	42	6		Exam	5	
SR113111	Marine Geological Resources and Evaluation	48	3	36	12		Exam	6	

Course Code	Course Name	Week(hour)	Credits	Assessment	Semester	Notes
PR113029	Professional Practice	4	4	Term Paper	3	
PR114030	4					