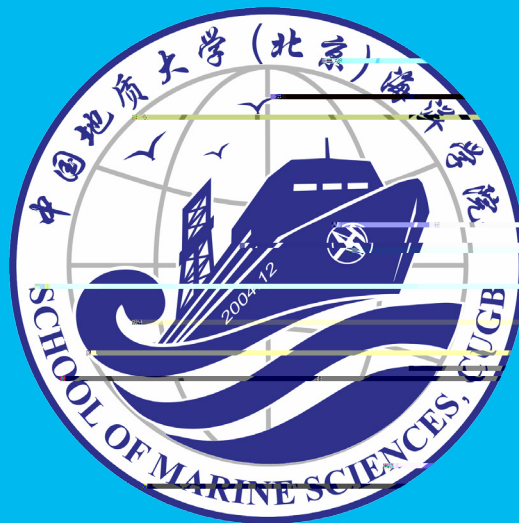


School of Ocean Sciences



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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 | | | | 2 |
| | 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 | 1 College English(1) | 64 | 4 | 64 | | | Exam | 1 | |
| GR081072 | 2 College English(2) | 32 | 2 | 32 | | | Exam | 2 | |
| GR081067 | Competence-oriented Education for College English | 32 | 2 | 32 | | | Exam | 2 | |
| GR141005 | 1 Physical Education (1) | 32 | 1 | | 32 | | Exam | 1 | |
| GR141006 | 2 Physical Education(2) | 32 | 1 | | 32 | | Exam | 2 | |
| GR142007 | 3 Physical Education(3) | 32 | 1 | | 32 | | Exam | 3 | |
| GR142008 | 4 Physical Education(4) | 32 | 1 | | 32 | | Exam | 4 | |
| GR041001 | College Computer | 32 | 2 | 16 | 16 | | Exam | 1 | |
| GR041003 | A Fundamentals of Programming 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 | | | | |

| 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 Ana # | | | | | |
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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.

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 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 | | 3 | 1 | | | | | | 2 |
| | Selective Courses of General Education | 192 | 12 | | | | | | | | | | | | | | |
| Professional Education | Disciplinary Fundamental Courses | 712 | 44.5 | 10 | 14 | | 10.5 | 7 | | 3 | | | | | | | |
| | Specialized Fundamental Courses | 528 | 33 | | | | 2 | 10 | | 9 | 12 | | | | | | |
| Practical Education | Specialized Development | 80 | 5 | | | | 2 | | | 2 | 3 | | | | | | |
| | Course Practice | 26 +224 | 30 | | 3 | 7 | 1 | | | 5 | 4 | 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 | |
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5 (Specialized Development Courses) 80 (80 hours) 5 (5 Credits)

| Course Code | Course Name | Hours | Credits | Lecture | Experiment | Online | Assessment | Semester | Notes |
|-------------|---|-------|---------|---------|------------|--------|------------|------------------|-------|
| SR113024 | Seismic -geologic Integrated Interpretation and Application | 32 | 2 | 16 | 16 | | Term Paper | 6 | |
| SS112118 | Geological mapping software and its application | 32 | 2 | 2 | 30 | | Term Paper | 3 | |
| SS113119 | Research and development of deep sea mineral resources | 32 | 2 | 32 | | | Term Paper | 539463904BC02C55 | |
| | | | | | | | | | |
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| Course Code | Course Name | Week(hour) | Credits | Assessment | Semester | Notes |
|-------------|-----------------------|------------|---------|------------|----------|-------|
| PR113029 | Professional Practice | 4 | 4 | Term Paper | 3 | |
| PR114030 | | | | | | |
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