



# 国际学生（研究生）培养方案


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International Student (Graduate) Program

适用2023级国际学生（研究生）

研究生院、国际文化交流学院

二〇二三年九月



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# Master Program in Aquaculture for International Students

(Discipline Code: 090801)

## I. Introduction (专业介绍)

The discipline is aimed at the sustainable use of economic aquatic animals and plants. In this program, basic biology, physiology, genetics and ecology are required to study the regular pattern of growth, development, reproduction and their relationship with environment, further to protect and sustainably utilize resources. Moreover, theories and operations relevant to nutritional requirements, disease prevention and control, genetic improvement, water environment regulation and remediation and so forth, can provide technical support for efficient utilization of aquatic animals and plants resources.

## II. Objectives (培养目标)

The program aims at providing talents with comprehensive developed personality and adaptability to the development of aquaculture disciplines and social demands. The candidates are required to:

- a) Be law abiding, well-behaved, and faithful;
- b) Be equipped with research quality of collaboration, diligence, truth-seeking, and creativity;
- c) Grasp well the basic theory and special knowledge of computer science and technology;
- d) Approach the ability to sustain science and technology related research independently and the ability to solve real problems using professional knowledge;
- e) Be familiar with Chinese and English language;
- f) Have potentials in teaching, research, manufacturing and management;
- g) Be well-developed both physically and psychologically.

## III. Method (培养方式)

Either the supervisor or the supervision team with a leading supervisor takes full responsibility for the post-graduate student's cultivation. The supervisor or the team should formulate and adjust the students' training plans, and give advice in their professional studies, scientific research and dissertation writing.

Students pursuing master degrees are cultivated in the way of combination of course work and research.

## IV. Duration (学习年限)

In general, the period of study for full-time candidates is 3 years (6 semesters). Students are allowed to apply for advancement or extension of graduation according to their own conditions. The maximum study duration can-not exceed 5 years (including suspension of schooling). Only one suspension of schooling is allowed.

The course learning for candidates normally requires one year.

## **V. Educational Procedures (培养环节)**

### **1. Development of Educational Program (制定培养计划)**

Within the first three months of admission, in accordance with the requirements of the educational program and in accordance with student's personal aptitude and ability, the instructor shall guide the student to formulate a personal educational plan, which needs to be reported to the graduate school after approval of the college. If the student or his/her tutor requests the revision of the educational plan during the process of the educational plan, it must be applied to the dean of the college who is in charge for application and approval, and reported to the school for filing.

### **2. Literature Review (文献综述)**

Before the dissertation begins, the postgraduate student should write a literature review and make a public report based on the direction of the research and combined with the topic selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 5,000 words and there are no less than 30 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

### **3. Thesis Proposal (开题报告)**

The thesis proposal is an important part of the postgraduate's thesis work. It is a document for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the graduate students to implement the thesis research, and it is to supervise and guarantee the quality of the thesis. The content of the thesis proposal generally includes title, basis of the argument (purpose and significance of the topic of the thesis, and the current research status), research plan (objectives, content, methods, process, key issues to be solved, and the innovation points), and supporting conditions (instrument equipment, cooperation units and division of labor, and staffing). The postgraduate's thesis is generally held in the third semester. The evaluation team of the thesis proposal comprises 3-5 experts, and if the evaluation is unqualified, the re-submission must be finished within three months.

### **4. Mid-term Examination (中期考核)**

A mid-term assessment system is to ensure that the postgraduate students complete their studies on time. The mid-term assessment includes: results of postgraduate courses, performance of scientific research, publications, research progress, the staged results obtained, research plan, thesis framework, and so on. The mid-term assessment of master students is generally completed by the end of the fourth semester.

### **5. Academic Activities (学术活动)**

Academic activities include academic reports, participation in domestic and overseas academic conferences, lectures, seminars, and so on. Postgraduate students should participate in at least three academic seminars during their studies, participate in five academic lectures or professional conferences, at least at the "graduate academic dissertation" organized by the school (or college) or an academic

meeting in the domestic and overseas. Postgraduate students participate in academic activities and will be implemented an assessment system.

#### 6. Dissertation (学位论文)

The dissertation should be completed independently by the postgraduate student under the guidance of the supervisor. Each process of the dissertation work (thesis proposal, mid-term examination, paper submission and revision, oral defense and revision, etc.) should be implemented on the basis of the relevant regulations of the university. From the date of submission of the qualified thesis proposal to the defense of the thesis, the time for the dissertation should not be less than one year.

Graduate students must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits.

The postgraduate's thesis is generally over 30,000 words with no less than 60 references cited in the literature review. The dissertation can be written in English, but the abstract must be written in Chinese.

#### 7. HSK Requirements ( HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

### VI. General Requirements (总体要求)

During the three academic years (6 semesters), at least 28 credits are requested to acquire the degree, including at least 24 credits for Courses, 2 credits for Literature Review and 2 credits for Academic Activities.

Requirements		Degree Courses		Elective Courses	Literature Review	Academic Activities
		Public	Major			
The least credits	28	10	10	4	2	2

### VII. Curriculum (课程)

#### Public Degree Courses (10 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142202	Comprehensive Chinese B	2	32	2
1142204	China Panorama A	2	32	1
1142203	China Culture	2	32	1
0810018	Practical Academic English	2	32	2

### Major Degree Courses (10 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0121901	Course on Progress in Discipline Research (offered by the supervisor)	1	16	2
0111803	Molecular Immunology	2	32	1
0141602	Aquatic Animal Pathogen	1	16	2
0141605	Recirculating Aquaculture Systems	2	32	2
0141701	Fish Production and Culture	2	32	1
0141615	Aquaculture Nutrition and Feed	4	64	2

### Elective Courses (4 credits )

Course Number	Course Name	Credit	Class Hour	Semester
0111903	Team Seminars	1	16	2
0141702	Aquatic Animal Breeding	2	32	2
0152301	Aquatic Physiology and Environment	2	32	1
0122116	Advanced Research of Aquaculture Nutrition and Feeds	1	16	1
0122133	Frontiers Course on Medicine of Aquatic Animals	1	16	1

## VIII. Basic Requirement for Compulsory Procedures (必修环节基本要求)

After meeting the above requirements, the following study steps should be completed.

### 1. Literature Review

Before the dissertation begins, the postgraduate student should write a literature review and make a public report based on the direction of the research and combined with the selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 5,000 words and there are no less than 30 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

### 2. Academic Activities

Academic activities include academic reports, participation in professional academic conferences in the domestic and overseas, academic lectures, academic seminars, etc. The postgraduate students should participate in at least three times academic seminars during their studies, participate in expert academic lectures or professional conferences five times in the domestic and overseas, at least at the “graduate academic dissertation” organized by the school (or college) or an academic meeting in the domestic and overseas. Postgraduate students participate in academic activities and will be implemented an assessment system.

# **PhD Program in Aquaculture for International Students**

**(Discipline Code: 090801)**

## **I. Introduction (专业介绍)**

The discipline is aimed at the sustainable use of economic aquatic animals and plants. In this program, basic biology, physiology, genetics and ecology are required to study the regular pattern of growth, development, reproduction and their relationship with environment, further to protect and sustainably utilize resources. Moreover, theories and operations relevant to nutritional requirements, disease prevention and control, genetic improvement, water environment regulation and remediation and so forth, can provide technical support for efficient utilization of aquatic animals and plants resources.

## **II. Objectives (培养目标)**

The discipline aims to cultivate all-around professionals adaptive to the development of modern scientific technology and social demands. The professionals should be extremely informative of theories of Aquaculture, capable of researching in this area, knowledgeable, competitive, creative, and loyal to science. They should have the ability to work on their own, gradually be able to get leadership in their own research fields, and be responsible in scientific research.

Students should obey the laws and be healthy, well-behaved, trust-worthy and dedicated to the development of human beings, truth, and science.

Students should have good understanding abilities and perception in professional areas, have reasonable knowledge structure and good scientific literacy; be creative; be independent; having potentials to make break-through achievements in certain fields of science and technology.

## **III. Method (培养方式)**

Either the supervisor or the committee with a leading supervisor takes full responsibility during the supervision of the doctoral students, such as providing them with guidance on training plans formulation, professional studies, scientific research and thesis writing.

The program mainly involves research and courses. Students can also benefit from the resource sharing thanks to mutual cooperation between the university and relevant research institutions.

## **IV. Duration (学习年限)**

Beginning with the mandatory first-year courses, the doctoral program usually consists of 4 years, and no more than 6 years (including temporary leave of absence).

There is only one chance to apply for delaying graduation.

## **V. Procedures (培养环节)**



### 1. Study Plan (制定培养计划)

Implement the tutor responsibility system. The tutor should develop a training plan for each PhD candidate student based on the requirements of the training program in accordance with their ability. The tutor should fully care about the growth of the PhD candidate student and pay attention to both course study and scientific research in the process of training. The scientific research dissertation work is generally carried out in the school.

### 2. Literature Review (文献综述)

Before the dissertation begins, the PhD student should write a literature review and make a public report based on the direction of the research and combined with the selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 10,000 words and there are no less than 60 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

### 3. Thesis Proposal (开题报告)

The opening report is an important part of the PhD candidates' thesis work. It refers to the special written report for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the PhD candidates to implement the thesis research, and it is to supervise and guarantee the quality of the thesis. The content of the opening report generally includes: the title, the basis of the argument (the purpose and significance of the topic of the thesis, the research status in domestic and foreign), the research plan (the research objectives, content, methods, process, the key issues to be solved, and the innovation points), condition analysis (instrument equipment, cooperation units and division of labor, and staffing). The PhD candidates' thesis is generally held in the third semester. The opening report evaluation team composed of 3-5 experts comprehensively reviewed the opening report of the master's thesis, and if the evaluation is unqualified, the student must reopen the question within three months.

### 4. Mid-term Examination (中期考核)

To ensure that the PhD candidates complete their studies on time and do well, establish a doctoral degree study and mid-term assessment system. The mid-term assessment includes: the study of doctoral courses, the performance of scientific research, the situation of the writing and publication of academic papers, the progress of the research work of the dissertation, the staged results obtained, the work plan and research content of the next step, and the abstracts and thesis of the dissertation, thesis framework, etc. The mid-term assessment of PhD candidates is generally completed at the end of the fourth semester.

### 5. Academic Activities (学术活动)

Academic activities include academic reports, participation in professional academic conferences in the domestic and overseas, academic lectures, academic seminars, etc. The PhD students should participate in at least five times academic seminars during their studies, participate in expert academic lectures or professional conferences six times in the domestic and overseas, at least at the "graduate

academic dissertation” organized by the school (or college) or an academic meeting in the domestic and overseas. PhD students participate in academic activities and will be implemented an assessment system.

#### 6. Academic Dissertation (学位论文)

The dissertation should be completed independently by the PhD candidates under the guidance of the supervisor. Each process of the dissertation work (opening report, mid-term inspection, paper submission and revision, thesis defense and revision, etc.) should be implemented on the basis of the relevant regulations of the university. From the date of submission of the qualified opening report to the defense of the thesis, the time for the dissertation should not be less than one year.

PhD candidates must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits before applying for a thesis defense. The postgraduate’s thesis is generally more than 40,000 words, and the literature review cited no less than 90 theses. Students who taught in English will must write the dissertation abstract in Chinese.

#### 7. HSK Requirements ( HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

### VI. General Requirements (总体要求)

During the four academic years (8 semesters), at least 16 credits are demanded to acquire the degree, which includes at least 12 credits for courses, 2 credits for Literature Review and 2 credits for Academic Activities.

Requirements		Degree Courses		Elective Courses	Literature Review	Academic Activities
		Public	Major			
The least credits	16	6	4	2	2	2

### VII. Curriculum (课程)

#### Public Degree Courses (6 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142204	China Panorama A	2	32	1
2330002	Practical Academic English	2	32	1

#### Major Degree Courses (4 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0121901	Course on Progress in Discipline Research (offered by the supervisor)	1	16	2
0151601	Advanced Aquaculture	3	48	2
0152301	Aquatic Physiology and Environment	2	32	1

### Elective Courses ( 2 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0111903	Team Seminars	1	16	2
0141611	Aquatic Ecology	2	32	1
0111803	Molecular Immunology	2	32	1

### VIII. Basic Requirement for Compulsory Procedures (必修环节基本要求)

After meeting the above requirements, the following study steps should be completed:

#### 1. Literature Review

Before the dissertation begins, the PhD student should write a literature review and make a public report based on the direction of the research and combined with the selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 10,000 words and there are no less than 60 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

#### 2. Academic Activities

Academic activities include academic reports, participation in professional academic conferences in the domestic and overseas, academic lectures, academic seminars, etc. The PhD students should participate in at least five times academic seminars during their studies, participate in expert academic lectures or professional conferences six times in the domestic and overseas, at least at the “graduate academic dissertation” organized by the school (or college) or an academic meeting in the domestic and overseas. PhD students participate in academic activities and will be implemented an assessment system.

# **Master Program in Biology for International Students**

**(Discipline Code: 071000)**

## **I. Introduction (专业介绍)**

The master program is focused on various aspects of biology, including anatomy, physiology, development, evolution as well as adaptation to environment changes. Biological phenomena are to be revealed at levels of molecules, cells, tissues, organs, body systems, individuals, populations and communities. Research usually involves organisms found in saltwater or freshwater. Hydrobiology, biochemistry and molecular biology, physiology and developmental biology are common fields of research projects.

## **II. Educational Objectives (培养目标)**

The program aims to develop a solid theoretical basis, systems expertise and good experimental skills in the field of biology, forming a broad academic thinking and knowledge structure, able to skillfully use modern information technology and a foreign language. Competent in the field of biology teaching, scientific research, production and management work.

## **III. Educational Methods (培养方式)**

Either the supervisor or the supervision team with a leading supervisor takes full responsibility for the postgraduate students' academic studies. The supervisor or the team should formulate and adjust the students' training plans, and give advice in their professional studies, scientific research and dissertation writing. Students pursuing master degrees are trained in the way of combination of course work and research.

## **IV. Duration (学习年限)**

In general, the period of study for full-time candidates is 3 years (6 semesters). Students are allowed to apply for advancement or extension of graduation according to their own conditions. The maximum study duration can-not exceed 5 years (including suspension of schooling). Only one suspension of schooling is allowed.

The course learning for candidates normally requires one year.

## **V. Educational Procedures (培养环节)**

### **1. Development of Educational Program (制定培养计划)**

Within the first three months of admission, in accordance with the requirements of the educational program and in accordance with student's personal aptitude and ability, the instructor shall guide the student to formulate a personal educational plan, which needs to be reported to the graduate school after approval of the college. If the student or his/her tutor requests the revision of the educational plan during

the process of the educational plan, it must be applied to the dean of the college who is in charge for application and approval, and reported to the graduate school for filing.

## 2. Literature Review (文献综述)

Before the dissertation begins, the postgraduate student should write a literature review and make a public report based on the direction of the research and combined with the topic selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 5,000 words and there are no less than 30 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

## 3. Thesis Proposal (开题报告)

The thesis proposal is an important part of the postgraduate's thesis work. It is a document for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the graduate students to implement the thesis research, and it is to supervise and guarantee the quality of the thesis. The content of the thesis proposal generally includes title, basis of the argument (purpose and significance of the topic of the thesis, and the current research status), research plan (objectives, content, methods, process, key issues to be solved, and the innovation points), and supporting conditions (instrument equipment, cooperation units and division of labor, and staffing). The postgraduate's thesis is generally held in the third semester. The evaluation team of the thesis proposal comprises 3-5 experts, and if the evaluation is unqualified, the re-submission must be finished within three months.

## 4. Mid-term Examination (中期考核)

A mid-term assessment system is to ensure that the postgraduate students complete their studies on time. The mid-term assessment includes: results of postgraduate courses, performance of scientific research, publications, research progress, the staged results obtained, research plan, thesis framework, and so on. The mid-term assessment of master students is generally completed by the end of the fourth semester.

## 5. Academic Activities (学术活动)

Academic activities include academic reports, participation in domestic and overseas academic conferences, lectures, seminars, and so on. Postgraduate students should participate in at least three academic seminars during their studies, participate in five academic lectures or professional conferences, at least at the "graduate academic dissertation" organized by the school (or college) or an academic meeting in the domestic and overseas. Postgraduate students participate in academic activities and will be implemented an assessment system.

## 6. Dissertation (学位论文)

The dissertation should be completed independently by the postgraduate student under the guidance of the supervisor. Each process of the dissertation work (thesis proposal, mid-term examination, paper submission and revision, oral defense and revision, etc.) should be implemented on the basis of the

relevant regulations of the university. From the date of submission of the qualified thesis proposal to the defense of the thesis, the time for the dissertation should not be less than one year.

Graduate students must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits.

The postgraduate's thesis is generally over 30,000 words with no less than 60 references cited in the literature review. The dissertation can be written in English, but the abstract must be written in Chinese.

## 7. HSK Requirements ( HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

## VI. General Requirements (总体要求)

During the three academic years (6 semesters), at least 28 credits are required to acquire the degree, including at least 24 credits for *Courses*, 2 credits for *Literature Review* and 2 credits for *Academic Activities*.

Requirements		Degree Courses		Elective Courses	Literature Review	Academic Activities
		Public	Major			
The least credits	28	10	10	4	2	2

## VII. Curriculum (课程)

### Public Degree Courses ( 10 credits )

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142202	Comprehensive Chinese B	2	32	2
1142204	China Panorama A	2	32	1
1142203	China Culture	2	32	1
0810018	Practical Academic English	2	32	2

### Major Degree Courses ( 10 credits )

Course Number	Course Name	Credit	Class Hour	Semester
0121901	Course on Progress in Discipline Research (offered by the supervisor)	1	16	2
0122105	Frontier Course in Fundamentals of Microbiology	2	32	1
0122106	Frontier Course in Fundamentals of Microbiology	2	32	1
0141702	Aquatic Animal Breeding	2	32	2
0141704	Theories and Methods in Molecular Systematics and Ecology	2	32	1
0152301	Aquatic Physiology and Environment	2	32	1

### Elective Courses ( 4 credits )

Course Number	Course Name	Credit	Class Hour	Semester
0111903	Team Seminars	1	16	2
0141611	Aquatic Ecology	2	32	1
0141703	Bioinformatics	2	32	1

### **VIII. Basic Requirements for Compulsory Procedures (必修环节基本要求)**

After meeting the above requirements, the following study steps should be completed:

#### **1) Literature Review**

Before the dissertation begins, the postgraduate student should write a literature review and make a public report based on the research direction and combined with the topic selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 5,000 words and there are no less than 30 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

#### **2) Academic Activities**

Academic activities include academic reports, participation in domestic and overseas academic conferences, lectures, seminars, and so on. Postgraduate students should participate in at least three academic seminars during their studies, participate in five academic lectures or professional conferences, at least at the “graduate academic dissertation” organized by the school (or college) or an academic meeting in the domestic and overseas. Postgraduate students participate in academic activities and will be implemented an assessment system.

# **PhD Program in Biology for International Students**

**(Discipline Code: 071000)**

## **I. Introduction (专业介绍)**

The Biology study at Shanghai Ocean University focuses on biodiversity and vital processes of aquatic lives, such as classification of aquatic organisms, structure and function of water ecosystems. The Biology study has theoretical and practical importance in understanding phenomena and vital processes of life, managing, developing and utilizing aquatic biological resource as well as saving endangered species and maintaining balance of the water ecosystem. The PhD program of biology may involve research on the aquatic biodiversity and resource utilization, physiology and development biology in aquatic animals, aquatic ecology and conservation biology, genetic breeding and marine biological technology.

## **II. Educational Objectives (培养目标)**

The discipline aims to cultivate all-around professionals adaptive to the development of modern scientific technology and social demands. The professionals should be highly informative of theories of biology, capable of carrying out research in this area, knowledgeable, competitive, creative, and loyal to science. They should have the ability to work independently, gradually be able to get leadership in their own research fields, and be responsible in scientific research.

Students should obey the laws and be healthy, well-behaved, trust-worthy and dedicated to the development of human beings, truth, and science.

Students should have good understanding abilities and percept abilities in professional areas, have reasonable knowledge structure, and good scientific literacy; creative; independent; having potentials to make break-through achievements in certain fields of science and technology.

## **III. Educational Method (培养方式)**

Either the supervisor or the committee with a leading supervisor takes full responsibility during the supervision of the doctoral students, such as providing them with guidance on training plans formulation, professional studies, scientific research and thesis writing.

The program mainly involves research and courses. Students can also gain benefits from the cooperation between the university and relevant research institutions.

## **IV. Duration (学习年限)**

Beginning with the mandatory first-year courses, the doctoral program usually consists of 4 years, and no more than 6 years (including temporary leave of absence).

There is only one chance to apply for delaying graduation.



## **V. Educational Procedures (培养环节)**

### **1. Development of Educational Program (制定培养计划)**

The supervisor responsibility system applies to the program. The supervisor should develop a training plan for each PhD candidate student based on the requirements of the training program in accordance with their ability. The supervisor should fully care about the academic progress of the PhD candidate student and pay attention to both course study and scientific research in the process of training. The scientific research dissertation work is generally carried out at the university.

### **2. Literature Review (文献综述)**

Before the dissertation begins, the PhD student should write a literature review and make a public report based on the direction of the research and combined with the topic selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 10,000 words and there are no less than 60 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

### **3. Thesis Proposal (开题报告)**

The thesis proposal is an important part of the PhD candidates' thesis work. It is a document for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the PhD candidates to implement the thesis research, and it is to supervise and guarantee the quality of the thesis. The content of the thesis proposal generally includes title, basis of the argument (purpose and significance of the topic of the thesis, and the current research status), research plan (objectives, content, methods, process, key issues to be solved, and the innovation points), and supporting conditions (instrument equipment, cooperation units and division of labor, and staffing). The PhD candidates' thesis is generally held in the third semester. The evaluation team of the thesis proposal comprises 3-5 experts, and if the evaluation is unqualified, the re-submission must be finished within three months.

### **4. Mid-term Examination (中期考核)**

A mid-term assessment system is to ensure that the PhD candidates complete their studies on time. The mid-term assessment includes: results of doctoral courses, performance of scientific research, publications, research progress, the staged results obtained, research plan, thesis framework, and so on. The mid-term assessment of PhD candidates is generally completed by the end of the fourth semester.

### **5. Academic Activities (学术活动)**

Academic activities include academic reports, participation in domestic and overseas academic conferences, lectures, seminars, and so on. PhD students should participate in at least five academic seminars during their studies, participate in six academic lectures or professional conferences, at least at the "graduate academic dissertation" organized by the school (or college) or an academic meeting in the domestic and overseas. PhD students participate in academic activities and will be implemented an assessment system.

## 6. Dissertation (学位论文)

The dissertation should be completed independently by the PhD candidates under the guidance of the supervisor. Each process of the dissertation work (thesis proposal, mid-term examination, paper submission & revision, oral defense and revision, etc.) should be implemented on the basis of the relevant regulations of the university. From the date of submission of the qualified thesis proposal to the defense of the thesis, the time for the dissertation should not be less than one year.

PhD candidates must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits before applying for a thesis defense. The postgraduate's thesis is generally over 40,000 words, with no less than 90 references cited in the literature review. The dissertation can be written in English, but the abstract must be written in Chinese.

## 7. HSK Requirements ( HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

## VI. General Requirements (总体要求)

During the four academic years (8 semesters), at least 16 credits are demanded to acquire the degree, including at least 12 credits for courses, 2 credits for Literature Review and 2 credits for Academic Activities.

Requirements		Degree Courses		Elective Courses	Literature Review	Academic Activities
		Public	Major			
The least credits	16	6	4	2	2	2

## VII. Curriculum (课程)

### Public Degree Courses (6 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142204	China Panorama A	2	32	1
2330002	Practical Academic English	2	32	1

### Major Degree Courses (4 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0121901	Course on Progress in Discipline Research (offered by the supervisor)	1	16	2
0141611	Aquatic Ecology	2	32	1
0141703	Bioinformatics	2	32	1

### Elective Courses (2 credits )

Course Number	Course Name	Credit	Class Hour	Semester
0111903	Team Seminars	1	16	2
0111803	Molecular Immunology	2	32	1
0141704	Theories and Methods in Molecular Systematics and Ecology	2	32	1

### VIII. Basic Requirements for Compulsory Procedures (必修环节基本要求)

After meeting the above requirements, the following study steps should be completed:

#### 1) Literature Review

Before the dissertation begins, the PhD student should write a literature review and make a public report based on the research direction and combined with the topic selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 10,000 words and there are no less than 60 references. The literature review was graded according to excellent, good, medium, pass and fail grades.

#### 2) Academic Activities

Academic activities include academic reports, participation in domestic and overseas academic conferences, lectures, seminars, and so on. PhD students should participate in at least five academic seminars during their studies, participate in six academic lectures or professional conferences, at least at the “graduate academic dissertation” organized by the school (or college) or an academic meeting in the domestic and overseas. PhD students participate in academic activities and will be implemented an assessment system.

# **Master Program in Marine Science for International Students**

**(Discipline Code: 070700)**

## **I. Introduction (专业介绍)**

Marine science mainly studies the nature, mutual influence and change laws of physical, chemical, biological and geological processes in the ocean, as well as the technologies for marine resource exploitation and application. Marine science is also an observational discipline, and its development level largely depends on the advanced technology related to observation and investigation equipment. The marine science discipline of Shanghai Ocean University (or SHOU) is a key discipline in Shanghai Municipal Education Commission and has the right to grant master degrees.

## **II. Educational Objectives (培养目标)**

The goal of our program is to cultivate high-level professional talents who can adapt to scientific and technological progress and meet the needs of social development, respect facts, pursue science and truth, have competitiveness and innovation, independently engage in scientific research, and have a strong sense of national responsibility and scientific responsibility.

1. Love China, abide by laws and regulations, have good conduct, honesty and loyalty, and have a strong sense of professionalism and dedication.
2. Have an overall understanding of marine science, have a solid grasp of the basic theories and systematic in-depth professional knowledge of their respective research directions, have an in-depth understanding of the development status and trends of the research directions. Have reasonable knowledge structure, good scientific and cultural literacy and the practical ability to independently conduct creative scientific research.
3. Possess good domestic and international academic communication skills
4. Have good physical and mental health.

## **III. Educational Method (培养方式)**

For the cultivation of master's students, the supervisor responsibility system or the guidance group with the supervisor as the main system is implemented, giving full play to the role of subjects, and encouraging qualified interdisciplinary and co-disciplinary organizations to organize mentor groups for collective guidance. The supervisor (group) is responsible for guiding the graduate students to make and adjust their personal training plans, as well as guiding their business study, scientific research and dissertation.

The cultivation of master's students adopts a combination of scientific research and course study.

In the cultivation of postgraduates, SHOU will make full use and play to the advantages of all aspects, pay attention to joint training with relevant research institutes or universities, and international cooperation and exchange to achieve complementary advantages and resource sharing.

#### IV. Duration (学习年限)

The maximum number of years of study for master's degree is 3 years. Master's degree courses generally take 1.5 semesters. Postgraduates should complete their studies within the academic system. Those who cannot complete their studies on time can apply for extension of graduation. The maximum number of years of study for master students should not exceed 5 years.

#### V. Educational Procedures (培养环节)

##### 1. Study Plan (制定培养计划)

Within three months after enrollment of graduate students, the supervisor (group) and graduate student should fully discuss and develop educational program for the student in the light of requirements in the training program as well as the belief of "teaching in accordance with students' aptitudes". The educational program should make specific details on the courses, forms and content requirements of compulsory links, dissertation plans, etc. With the permission from the college where students study, the educational program will be registered at the Graduate School of Shanghai Ocean University.

If any modification is to be made in the educational program during the study, either the supervisor or the student should apply to the academic chairman of the college who is in charge. Only with the approval from the college, can the modification be reported to the Graduate School.

##### 2. Literature Review (文献综述)

Before the thesis proposal, graduate students should according to the research direction, combined with the topic selection of the dissertation, read domestic and foreign literature in related fields, write a literature review, and make a public report under the guidance of their supervisors.

For specific requirements such as the number of reading documents and the number of words in the literature review, please refer to the *"Implementation Measures for the Management of Postgraduate Literature Review of Shanghai Ocean University"*. The literature review will be graded according to the five grades of excellent, good, medium, pass and fail, and the pass and above will count 2 credits.

##### 3. Thesis Proposal (开题报告)

After completing the course study and literature review, graduate students must write a written report on the topic and make a public report before entering the work of the dissertation (usually in the third semester).

Under the guidance of the supervisor (group), the master's graduate student's opening report should conduct a comprehensive scientific argumentation on the proposed topic, determine the research content and scope, design and formulate implementation plans, technical routes, explore innovations, and write a written opening report. And make a public oral report, which will be evaluated by an expert review team. Specifically, it will be implemented in accordance with the *"Detailed Implementation Rules of Shanghai Ocean University Graduate Dissertation Opening Report"*.

Only those who pass the opening report can enter the dissertation stage; those who fail, should be revised based on the opinions of the review team, opening report again, and those who still fail, should

terminate the training and be treated as dropping out.

#### 4. Mid-term Examination (中期考核)

At the end of the third semester after the enrollment of graduate students, according to the training plan and personal training plan, the graduate students will be assessed in terms of political and ideological character, curriculum learning, scientific research practice ability, and physical and mental status. Specifically in accordance with the “*Shanghai Ocean University Mid-term Assessment Implementation Measures for Graduate Students*”.

The mid-term report focuses on checking the progress of the dissertation, and implements an assessment system. The assessment results are scored on five levels: excellent, good, medium, passing and failing.

#### 5. Academic Activities (学术活动)

Academic activities include participating in academic lectures and reports by experts inside and outside the school, academic seminars, making public academic reports, and participating in professional academic conferences at home and abroad.

Master students should participate in at least 10 expert academic lectures and report meetings on campus, 3 graduate academic seminars, and actively participate in professional academic conferences at home and abroad. Participating in academic activities must record the main points of the expert academic report, and be signed by the expert and confirmed by the supervisor. At least one academic oral report or poster or paper (the graduate student is the first author or the second author headed by the supervisor) should be included in the conference proceedings at the “postgraduate academic paper report meeting” organized at the school level (or college level) or at a professional academic conference at home and abroad.

An assessment system is implemented for graduate students participating in academic activities, and 2 credits are counted for passing the assessment of academic activities. Please refer to the “*Regulations of Shanghai Ocean University on the Participation of Graduate Students in Academic Activities*” for specific requirements.

#### 6. Academic Dissertation (学位论文)

Students who taught in Chinese must finish the dissertation in Chinese.

Students who taught in English will must write the dissertation abstract in Chinese.

All graduate students must complete a dissertation to meeting the degree requirements under the guidance of their supervisor. The master’s degree thesis should reflect the academic level achieved by the graduate students in the field of research, indicating that they have a good grasp of the basic theories, professional knowledge and basic skills of the subject, and have the ability to engage in scientific research in this subject or related subjects or independently undertake specialized technical work.

The review and defense of postgraduate dissertations shall be carried out in accordance with the relevant provisions of the “*Working Rules for the Awarding of Masters and Doctorates of Shanghai Ocean University*”.

The basic requirements for a master's degree thesis are:

(1) The dissertation should be completed independently under the guidance of the supervisor (group).  
 (2) All relevant content of the paper should be analyzed and researched with a rigorous scientific attitude.

(3) The research purpose of the dissertation is clear, the experimental design or investigation method is reasonable, the data is true, the analysis method is correct, and the conclusion is reliable.

(4) The writing of the thesis is fluent, and the writing conforms to comply the standard of research papers (refer to “*Shanghai Ocean University Graduate Dissertation Writing Standards*”).

(5) The thesis should have certain novelty or application value or academic reference value.

(6) Master's degree thesis must be reviewed by experts and openly defended. Master's students must submit their thesis and pre-defense one month before the thesis defense, and accept random examination and review of the thesis by the Shanghai Academic Degrees Committee. The procedures and methods for the defense of the application for master's degree thesis shall be conducted in accordance with the relevant provisions of the “*Working Rules for the Award of Master and Doctorate Degrees of Shanghai Ocean University*”.

## 7. HSK Requirements ( HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

## VI. General Requirements (总体要求)

During the three academic years ( 6 semesters), at least 30 credits are demanded to acquire the degree, which includes at least 26 credits for *Courses* (including 8 credits for *Public Degree Courses*, 8 credits for *Major Degree Courses*, 4 credits for *Basic Frontier Courses*, 4 credits for *Elective Courses*), 2 credits for *Literature Review*, 2 credit for *Academic activities*.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Literature Review	Academic Activities
		Public	Major				
The least credits	30	10	8	4	4	2	2

## VII. Curriculum (课程)

### Public Degree Courses (10 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142202	Comprehensive Chinese B	2	32	2
1142204	China Panorama A	2	32	1
1142203	China Culture	2	32	1
0810018	Practical Academic English	2	32	2

### Major Degree Courses (8 credits)

Course Number	Course Name	Credit	Class Hour	Semester
Physical Oceanography Direction				
0311413	Advanced Physical Oceanography	2	32	1
0211903	Geofluid Dynamics	2	32	1
0311424	Acquisition and Analysis of Ocean Data	2	32	1
0311425	Regional Oceanography	2	32	2
Marine Biology Direction				
0311415	Advance in Biological Oceanography	2	32	1
0211927	Marine Biotechnology Principles and Applications	2	32	2
0310054	Marine Biogeochemistry	2	32	1
0211907	Sedimentary Geochemistry	2	32	1
0311416	Advanced Marine Geology	2	32	1
0211905	Microbial Oceanography	2	32	1
0212301	Marine Microbial Engineering	2	32	2
0212302	Microbial Ecology of the Oceans	2	32	2
Marine Chemistry Direction				
0310054	Marine Biogeochemistry	2	32	1
0211907	Sedimentary Geochemistry	2	32	1
0311416	Advanced Marine Geology	2	32	1
0212204	Isotope Geology	2	32	1
0212303	Advanced Chromatograph/Mass Spectrometry Analysis Techniques	2	32	1
0212304	Advanced Stable Isotope Geochemical Analysis Methods	2	32	2
0212305	Sedimentology	2	32	1
Marine Geology Direction				
0311416	Advanced Marine Geology	2	32	1
0310054	Marine Biogeochemistry	2	32	1
0212204	Isotope Geology	2	32	1
0211907	Sedimentary Geochemistry	2	32	1
0212303	Advanced Chromatograph/Mass Spectrometry Analysis Techniques	2	32	1
0212304	Advanced Stable Isotope Geochemical Analysis Methods	2	32	2



0212305	Sedimentology	2	32	2
Marine Technology Direction				
0310048	Marine Satellite Remote Sensing	2	32	1
0212001	Modern Marine Surveying and Mapping	2	32	1
0311419	Principles and Techniques of Marine Spatial Database	2	32	2
0212203	Marine Eco-acoustics	2	32	1
0311413	Advanced Physical Oceanography	2	32	1
0212306	Unmanned Aerial Vehicle Mapping and Marine Application	2	32	1
0212307	Remote Sensing Geo-analysis	2	32	2

#### **Basic Frontier Courses (4 credits )**

Course Number	Course Name	Credit	Class Hour	Semester
0321411	Frontier in Marine Technology I (Basic)	1	16	1
0321409	Frontier in Marine Science I (Basic)	1	16	1
0321410	Frontier in Marine Science II (Basic)	1	16	1
0221902	Frontier in Marine Science III (Basic)	1	16	1
0311423	Introduction to the Classic Literature of the Discipline (Marine Science)	2	32	2
0221903	Disciplinary Research Progress (Tutor)	1	16	1

#### **Elective Courses ( 4 credits )**

Course Number	Course Name	Credit	Class Hour	Semester
0310029	Marine Conservation Biology	2	32	2
0232101	Program Design of Polar Oceanography Informatization	2	32	2
0211904	Methodology and Application of Remote Sensing in Polar Oceanography	2	32	2

# PhD Program in Marine Science for International Students

(Discipline Code: 070700)

## I. Introduction (专业介绍)

Marine science mainly studies the nature, mutual influence and change laws of physical, chemical, biological and geological processes in the ocean, as well as the technologies for marine resource exploitation and application. Marine science is also an observational discipline, and its development level largely depends on the advanced technology related to observation and investigation equipment. The marine science discipline of Shanghai Ocean University (or SHOU) is a key discipline in Shanghai Municipal Education Commission and has the right to grant doctorate degrees.

## II. Educational Objectives (培养目标)

The goal of our program is to cultivate high-level professional talents who can adapt to scientific and technological progress and meet the needs of social development, respect facts, pursue science and truth, have competitiveness and innovation, independently engage in scientific research, and have a strong sense of national responsibility and scientific responsibility.

1. Love China, abide by laws and regulations, have good conduct, honesty and loyalty, and have a strong sense of professionalism and dedication.
2. Have an overall understanding of marine science, have a solid grasp of the basic theories and systematic in-depth professional knowledge of their respective research directions, have an in-depth understanding of the development status and trends of the research directions. Have reasonable knowledge structure, good scientific and cultural literacy and the practical ability to independently conduct creative scientific research.
3. Possess good domestic and international academic communication skills
4. Have good physical and mental health.

## III. Educational Method (培养方式)

For the cultivation of doctoral students, the supervisor responsibility system or the guidance group with the supervisor as the main system is implemented, giving full play to the role of subjects, and encouraging qualified interdisciplinary and co-disciplinary organizations to organize mentor groups for collective guidance. The supervisor (group) is responsible for guiding the graduate students to make and adjust their personal training plans, as well as guiding their business study, scientific research and dissertation.

The cultivation of doctoral students adopts scientific research as the mainstay, curriculum learning as the supplement, independent learning and innovation throughout the whole process.

In the cultivation of postgraduates, SHOU will make full use and play to the advantages of all aspects, pay attention to joint training with relevant research institutes or universities, and international cooperation and exchange to achieve complementary advantages and resource sharing.

#### IV. Duration (学习年限)

The maximum number of years of study for doctoral degree is 4 years. Doctoral degree courses generally take one semester. Postgraduates should complete their studies within the academic system. Those who cannot complete their studies on time can apply for extension of graduation. The maximum number of years of study for doctoral students, the maximum number of years of study should not exceed 6 years.

#### V. Educational Procedures (培养环节)

##### 1. Study Plan (制定培养计划)

Within three months after enrollment of graduate students, the supervisor (group) and graduate student should fully discuss and develop educational program for the student in the light of requirements in the training program as well as the belief of “teaching in accordance with students’ aptitudes”. The educational program should make specific details on the courses, forms and content requirements of compulsory links, dissertation plans, etc. With the permission from the college where students study, the educational program will be registered at the Graduate School of Shanghai Ocean University.

If any modification is to be made in the educational program during the study, either the supervisor or the student should apply to the academic chairman of the college who is in charge. Only with the approval from the college, can the modification be reported to the Graduate School.

##### 2. Literature Review (文献综述)

Before the thesis proposal, graduate students should according to the research direction, combined with the topic selection of the dissertation, read domestic and foreign literature in related fields, write a literature review, and make a public report under the guidance of their supervisors.

For specific requirements such as the number of reading documents and the number of words in the literature review, please refer to the *“Implementation Measures for the Management of Postgraduate Literature Review of Shanghai Ocean University”*. The literature review will be graded according to the five grades of excellent, good, medium, pass and fail, and the pass and above will count 2 credits.

##### 3. Thesis Proposal (开题报告)

After completing the course study and literature review, graduate students must write a written report on the topic and make a public report before entering the work of the dissertation (usually in the third semester).

The topic selection of the dissertation of the doctoral candidate’s opening report should emphasize the close connection with scientific and technological progress, economic construction and social development, have important theoretical and practical significance, and should reflect the cutting-edge and advanced nature of the subject field. Under the guidance of the supervisor, the PhD candidates should conduct a comprehensive scientific demonstration of the selected topic, determine the research content and scope, design and formulate the implementation plan, technical route, highlight the innovation points,

and have a good research foundation, and write a standardized opening paper and through the “open topic review” procedure, only those who pass the review can make a public oral report, which will be evaluated by the expert review team. Specifically, it will be implemented in accordance with *the “Regulations on the Evaluation of the Thesis for Doctoral Dissertations of Shanghai Ocean University”* and the *“Detailed Rules for the Implementation of the Report on the Thesis of Shanghai Ocean University for Graduates”*. Only those who pass the opening report can enter the dissertation stage; those who fail should revise the work based on the opinions of the review team, and re-open again, and those who still fail should terminate the training and be treated as dropping out.

#### 4. Med-term Evaluation and Mid-term Report (中期考核)

At the end of the third semester after the enrollment of graduate students, according to the training plan and personal training plan, the PhD candidates will be assessed in terms of political and ideological character, curriculum learning, scientific research practice ability, and physical and mental status. Specifically in accordance with *the “Shanghai Ocean University Mid-term Assessment Implementation Measures for Graduate Students”*.

For PhD candidates, after entering the mid-term stage of the thesis and before the mid-term assessment, they should also report the stage results and existing problems of the scientific research work to the steering group or the college expert group, so as to listen to extensive opinions and improve the thesis research work. The mid-term report focuses on checking the progress of the dissertation, and implements an assessment system. The assessment results are scored on five levels: excellent, good, medium, passing and failing.

#### 5. Academic Activities (学术活动)

Academic activities include participating in academic lectures and reports by experts inside and outside the school, academic seminars, making public academic reports, and participating in professional academic conferences at home and abroad.

PhD candidates should participate in at least 5 academic seminars for graduate students, 6 academic lectures by experts, and at least 3 academic reports at or above the college level, including presenting an academic report at the “Graduate Academic Paper Report Meeting” organized at the school level (or college level) and at domestic and international professional academic conferences, respectively.

An assessment system is implemented for graduate students participating in academic activities, and 2 credits are counted for passing the assessment of academic activities. Please refer to *the “Regulations of Shanghai Ocean University on the Participation of Graduate Students in Academic Activities”* for specific requirements.

#### 6. Academic Dissertation (学位论文)

Students who taught in Chinese must finish the dissertation in Chinese.

Students who taught in English will must write the dissertation abstract in Chinese.

PhD candidates must complete a dissertation to meeting the degree requirements under the guidance of their supervisor. A doctoral dissertation should show that the author has the ability to independently engage in scientific research and has made creative achievements in science or specialized technology.

The review and defense of postgraduate dissertations shall be carried out in accordance with the relevant provisions of the *“Working Rules for the Awarding of Masters and Doctorates of Shanghai Ocean University”*.

**The basic requirements for a doctoral degree thesis are:**

- (1) The dissertation should be completed independently under the guidance of the supervisor (group).
- (2) A rigorous scientific attitude should be adopted to conduct in-depth and systematic analysis and research on a certain field and related content.
- (3) The research purpose of the dissertation is unambiguous, the experimental design or survey method is scientific and reasonable, the data is full and accurate, the data is true, the analysis method is correct, the argumentation is rigorous, and the conclusion is reliable.
- (4) The writing requirements of the dissertation: clear logic, fluency in writing, and conforming to the norms, please refer to *“Shanghai Ocean University Graduate Dissertation Writing Standards”*.
- (5) The research content of the thesis should be cutting-edge, exploratory and innovative in the subject field.
- (6) Doctoral dissertations must be reviewed by experts and openly defended. Doctoral students must submit their dissertations and pre-defense 3 months before the thesis defense, and accept random examinations and comments from the Shanghai Academic Degrees Committee. The procedures and methods for the defense of the application for doctoral dissertation shall be carried out in accordance with the relevant provisions of the *“Working Rules for the Award of Master and Doctorate Degrees of Shanghai Ocean University”*.

**7. HSK Requirements ( HSK要求)**

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

**VI. General Requirements (总体要求)**

During the three academic years (8 semesters), at least 16 credits are demanded to acquire the degree, which includes at least 12 credits for *Courses* (including 6 credits for *Public Degree Courses*, 2 credits for *Major Degree Courses*, 2 credits for *Basic Frontier Courses*, 2 credits for *Elective Courses*), 2 credits for *Literature Review*, 2 credit for *Academic Activities*.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Literature Review	Academic Activities
		Public	Major				
The least credits	16	6	2	2	2	2	2

## VII. Curriculum (课程)

### Public Degree Courses (6 credits )

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142204	China Panorama A	2	32	1
2330002	Practical Academic English	2	32	1

### Major Degree Courses (2 credits )

Physical Oceanography Direction				
Course Number	Course Name	Credit	Class Hour	Semester
0311413	Advanced Physical Oceanography	2	32	1
0211903	Geofluid Dynamics	2	32	1
Marine Biology Direction				
Course Number	Course Name	Credit	Class Hour	Semester
0311415	Advance in Biological Oceanography	2	32	1
0212301	Marine Microbial Engineering	2	32	2
0212302	Microbial Ecology of the Oceans	2	32	2
Marine Chemistry Direction				
0310054	Marine Biogeochemistry	2	32	1
0211907	Sedimentary Geochemistry	2	32	1
0212303	Advanced Chromatograph/Mass Spectrometry Analysis Techniques	2	32	1
Marine Information and Engineering Direction				
311416	Advanced Marine Geology	2	32	1
Marine Technology Direction				
0310048	Marine Satellite Remote Sensing	2	32	1
0212001	Modern Marine Surveying and Mapping	2	32	1
0212203	Marine Eco-acoustics	2	32	1

### Basic Frontier Courses (2 credits )

Course Number	Course Name	Credit	Class Hour	Semester
0221903	Disciplinary Research Progress (Tutor)	1	16	1
0321411	Frontier in Marine Technology I (Basic)	1	16	1
0321409	Frontier in Marine Science I (Basic)	1	16	1

Course Number	Course Name	Credit	Class Hour	Semester
0321410	Frontier in Marine Science II (Basic)	1	16	1
0221902	Frontier in Marine Science III (Basic)	1	16	1
0311423	Introduction to the Classic Literature of the Discipline (Marine Science)	2	32	2

**Elective Courses ( 2credits )**

Course Number	Course Name	Credit	Class Hour	Semester
0220405	Microbial Oceanography	2	32	1
0232101	Program Design of Polar Oceanography Informatization	2	32	2

# 海洋科学硕士研究生（国际学生）培养方案

（专业代码：070700）

## 一、专业简介

海洋科学主要研究海洋中的物理、化学、生物和地质过程的性质、相互影响和变化规律，以及面向海洋资源开发利用的应用技术。海洋科学也是观测性的学科，其发展水平依赖于观测调查装备的先进性。上海海洋大学海洋科学学科属于上海市重点学科，具有理学博士、硕士学位授予权。

## 二、培养目标

培养出适应科技进步和满足社会发展需求、尊重事实、追求科学和真理、具有竞争力和创新力、独立从事科研能力和科学责任感强的高层次专门人才。

1. 热爱中国，遵纪守法，品行端正，诚信忠义，具有较强的事业心和献身精神。
2. 对海洋科学有整体认识，掌握各自研究方向的基础理论和专业知识，并对研究方向的发展现状和趋势有深入的了解。知识结构合理，具有良好的科学文化素养以及独立从事创造性科学研究的实际工作能力。
3. 具备良好的国际学术交流能力。
4. 身心健康，具有健康的体魄、健全的人格和心理素质。

## 三、研究方向

本专业设物理海洋学、海洋生物学、海洋地质学、海洋化学和海洋技术五个研究方向。

物理海洋学方向：重点研究包括全球海洋多尺度过程数值模拟技术、海洋大气相互作用与气候系统、极地海洋动力过程、陆架海洋动力学和海洋生态动力学，并通过学科交叉，支撑海洋学的发展。

海洋生物学方向：重点聚焦海洋环境与海洋初级生产力、极地海洋生态系统，尤其是极地典型物种的生命过程及其与环境和海洋过程之间的关系、极地生物资源响应气候变化的机制、深海生物资源和基因资源与环境的关系，深海生物生命过程和生理生态分子调控机制。

海洋化学方向：研究海洋各部分的化学组成和含量、揭示海洋各种化学过程和分布迁移变化规律，并从事海洋化学资源的开发利用等。特色领域包括深渊海沟极端环境的化学物质循环，河口近海天然和人为化学物质的环境行为及影响机制等。

海洋地质学方向：主要研究大陆边缘和大洋盆地的结构、地质特征、成因和演化。优势研究领域有深海和深渊碳循环、海底冷泉活动及地球化学过程、天然气水合物成藏以及通过重建短周期和长周期浅海和深海环流模式认知过去的全球变化等。

海洋技术方向：研究海洋及海岸带遥感、海洋测绘与海洋信息工程、海洋声学技术方法及



其应用、海洋探测仪器和装备的研究等，涉及遥感、地理信息系统、海洋测绘、耐压结构和材料、通讯、定位、控制、能源、数据处理等各种通用/专用技术。

#### **四、学习年限**

硕士研究生的学制为3年，如不能按期完成学业的，可申请延期毕业。硕士生在校最长学习年限（含休学和保留学籍）不超过5年。

#### **五、培养环节**

##### **1. 个人培养计划**

研究生入学三个月内，导师（组）按照培养方案的要求，根据因材施教的原则，指导研究生制订个人培养计划，对所学课程、必修环节、内容要求、学位论文计划等做出具体规定，经学院同意后，报研究生院备案。

##### **2. 文献综述**

在学位论文开题之前，研究生应在导师指导下，结合学位论文的选题和研究方向，查阅相关领域的国内外研究进展，撰写文献综述，并进行公开报告。文献综述撰写的具体要求详见《上海海洋大学关于研究生文献综述管理实施办法》。

##### **3. 开题报告**

开题报告一般在第三学期进行。硕士生在导师指导下，对拟选的课题进行全面的科学论证，确定研究内容和范围，设计和制定实施方案、技术路线，挖掘创新点，撰写《硕士研究生毕业论文工作计划》，并进行公开报告，由专家评议小组进行考核，具体考核要求详见《上海海洋大学研究生学位论文开题报告实施细则》。

##### **4. 中期考核**

研究生入学后第四学期，依据研究生培养方案及其个人培养计划，对研究生在政治思想品德、课程学习、科研实践能力、学位论文进展情况、身心状况等方面进行考核。具体考核要求详见《上海海洋大学研究生中期考核实施办法》。

##### **5. 学术活动**

学术活动须贯穿于学术学位研究生培养全过程，主要形式有参加学术报告（讲座）、学术研讨会和作专题报告等，具体要求详见《上海海洋大学关于研究生参加学术活动的规定》。

##### **6. 论文撰写及答辩**

以中文授课的学生必须用中文完成论文。

以英文授课的学生必须用中文撰写论文摘要。

所有研究生必须在导师指导下完成一篇达到学位要求的学位论文。硕士学位论文要反映硕

士研究生在本学科领域研究中达到的学术水平，表明本人较好地掌握了本学科的基础理论、专业知识和基本技能，具有从事本学科或相关学科科学研究或独立担负技术工作的能力。硕士研究生学位论文的基本要求包括：

- ①应在导师（组）指导下，独立完成学位论文。
- ②对论文所有相关的内容要以严谨的科学态度进行分析研究。
- ③学位论文的研究目的明确、实验设计或调查方法合理、数据资料真实、分析方法正确、结论可靠。
- ④学位论文逻辑清晰、文笔流畅，撰写符合《上海海洋大学研究生学位论文写作规范》。
- ⑤论文应具有一定的创新性、应用价值或学术参考价值。
- ⑥学位论文须经过专家评阅和公开的答辩，关于申请硕士学位论文答辩程序及办法按照《上海海洋大学硕士、博士学位授予工作细则》有关规定进行，并接受上级主管部门博士/硕士学位论文抽检（授学位后抽检）。

## 7. HSK要求

以中文授课的学生须通过 HSK-5 级，并用中文完成论文。

## 六、总体要求

硕士研究生在学期间应至少完成 26 学分的课程学习以及必修环节（文献综述和学术活动各 2 学分，合计 4 学分），共计 30 学分，并通过学位论文开题报告、中期考核、学位论文答辩等规定的培养环节后方可毕业；符合毕业条件、通过研究生学位外语课程考试并取得授予硕士学位的科研成果等条件者可申请学位，经校学位评定委员会批准，可获硕士学位。

课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	考核方式	备注
一、公共学位课 硕士≥10 学分	1142204	中国概况 A	2	1	必修	考查	
	1142205	中国概况 B	2	2	必修	考查	
	1142206	实践汉语	2	1	必修	考查	
	1142203	中国文化	2	1	必修	考查	
	0810018	第一外语 A（实用学术英语）	2	1/2	必修	考试	
二、专业学位课 硕士≥8 学分	物理海洋学方向						
	0311413	高等物理海洋学	2	1	选修	论文	
	0211903	地球流体动力学	2	1	选修	论文	
	0311424	海洋资料的获取与分析	2	1	选修	考试	
	0311425	区域海洋学	2	2	选修	论文	
	海洋生物学方向						
	0311415	高等生物海洋学	2	1	选修	论文	
	0211927	现代海洋生物技术原理与应用	2	2	选修	论文	

课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	考核方式	备注
二、专业学位课 硕士≥8 学分	0310054	海洋生物地球化学	2	1	选修	论文	
	0211907	沉积地球化学	2	1	选修	小测+报告	
	0311416	高等海洋地质学	2	1	选修	论文	
	0211905	微生物海洋学	2	1	选修	论文	
	0212301	海洋微生物工程	2	2	选修	论文	
	0212302	海洋微生物生态学	2	2	选修	论文	
	海洋化学方向						
	0310054	海洋生物地球化学	2	1	选修	论文	
	0211907	沉积地球化学	2	1	选修	小测+报告	
	0311416	高等海洋地质学	2	1	选修	论文	
	0212204	同位素地球化学	2	1	选修	论文	
	0212303	高等色谱与质谱分析技术	2	1	选修	论文	
	0212304	高等稳定同位素地球化学分析方法	2	2	选修	小测+报告	
	0212305	沉积学	2	1	选修	论文	
	海洋地质学方向						
	0311416	高等海洋地质学	2	1	选修	论文	
	0310054	海洋生物地球化学	2	1	选修	论文	
	0212204	同位素地球化学	2	1	选修	论文	
	0211907	沉积地球化学	2	1	选修	小测+报告	
	0212303	高等色谱与质谱分析技术	2	1	选修	论文	
	0212304	高等稳定同位素地球化学分析方法	2	2	选修	小测+报告	
	0212305	沉积学	2	1	选修	论文	
	海洋技术方向						
	0310048	海洋卫星遥感	2	1	选修	论文	
	0212001	现代海洋测绘	2	1	选修	论文	
	0311419	海洋空间数据库原理与技术	2	2	选修	论文	
	0212203	海洋生态声学	2	1	选修	论文	
	0212306	无人机测绘与海洋应用	2	1	选修	论文	
	0212307	遥感地学分析	2	2	选修	论文	
	0311413	高等物理海洋学	2	1	选修	论文	

课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	考核方式	备注
三、前沿课程 硕士≥4 学分	0221903	学科研究进展课程(导师)	1	1	选修	论文	
	0321409	海洋科学基础前沿 1(基)	1	1	选修	考试	
	0321410	海洋科学基础前沿 2(基)	1	1	选修	考试	
	0221902	海洋科学基础前沿 3(基)	1	1	选修	考试	
	0321411	海洋技术基础前沿 1(基)	1	1	选修	考试	
	0321412	海洋技术基础前沿 2(基)	1	1	选修	考试	
	0311423	学科经典文献导读(海科)	2	2	选修	考试	
四、选修课 硕士≥4 学分	0310057	海洋数值模型	2	1	选修	论文	
	0310049	全球定位系统原理与应用	2	2	选修	论文	
	0211909	导师研讨课	1	1	选修	论文	
	0310052	遥感数字图像处理	2	2	选修	论文	
	0211904	极地海洋遥感方法与应用	2	2	选修	论文	
	0212202	R 语言	2	2	选修	论文	
	0212101	海洋地质流体数值模拟	2	1	选修	报告	
	0310029	海洋保护生物学	2	2	选修	报告	
	0232101	极地海洋信息化程序设计	2	2	选修	论文	
	0212102	气候变化科学概论	2	1	选修	论文	
	0212308	文献综述与开题报告撰写	1	1	选修	论文	
	0212205	海上科考调查实践	2/4	1/2	选修	导师/ 专业 负责人 认定	实际海上调查 作业时间 每累计满 14 天算 2 学 分, 最多算 4 学分

# **Master Program in Fisheries Resource for International Students**

**(Discipline Code: 090803)**

## **I. Introduction (专业介绍)**

Fisheries Science (FS) is an applied basic discipline. As an important part of FS, Marine fishery is related to oceanography, biology, statistics, mechanics, navigation, engineering technology, management and information technology.

According to the specialties of marine fisheries discipline at the Shanghai Ocean University, this discipline divided into four study fields, including Fishery Biology and Ecology, Fishery Resources and Management, Distant-water Fisheries Remote Sensing.

Fishery Biology and Ecology (FBE) Exploring the population structure, age growth, reproductive characteristics, feeding and migration routes of fishery resources through experimental methods, comprehensively analyzing their life history changes, inferring important characteristics such as changes in fishery resources, understanding the characteristics of marine biodiversity and the interaction between different groups of marine organisms and their habitats, and analyzing their ecological significance, and understanding human exploitation of marine resources and current major marine environmental issues.

Fishery Resources and Management (FRM) is to study fishery biology, fishery population dynamics and fishery resource management regime and measurements, and further provide the theoretical basis and decision references for sustainable exploitation and utilization, management and conservation of fishery resources.

Distant-water Fisheries Remote Sensing (DFRS) is to apply modern remote sensing technology and GIS technology to fisheries research and to improve the understanding on fishery resources population dynamical mechanism, the exploration on fishing ground forming mechanism, the development on fishery forecast technology and finally to provide scientifically and technological support for distant-water fishery.

## **II. Educational Objectives (培养目标)**

The program aims to cultivate all-around professionals with systematic knowledge in fishery science with oceanography background.

1. To master the basic methods and skills on fishery science. To be professional on fisheries, oceanography, biology and ecology in private sector, academic and research institution and public sector.
2. To be familiar with Chinese history, geography, society, economy and other national conditions and basic knowledge of Chinese culture.
3. To cultivate the ability to successfully use English to complete the study and research tasks of the discipline and major, and have the ability to use English to engage in related work of the major; Chinese proficiency should be at least HSK-3.
4. To develop international students' awareness, knowledge, attitudes and skills to embrace,

recognize and adapt to cultural diversity, and to play an important role in promoting mutual respect, understanding and solidarity among different people, societies and nations. To have a good international perspective in the discipline, be able to apply and develop the knowledge, skills and methods of the discipline in the actual environment of many countries, and have the ability to participate in international affairs and international competition.

## **II. Educational Method (培养方式)**

Either the supervisor or the instructing team with a leading supervisor takes full responsibility during the supervision of the master students, such as providing them with guidance on training plans formulation, professional studies, scientific research and thesis writing.

The program mainly involves research and courses. Students can also benefit from the resource sharing thanks to the mutual cooperation between the university and relevant research institutions.

## **IV. Duration (学习年限)**

The master program usually consists of 3 years, and no more than 5 years (including temporary leave of absence). Students are allowed to apply for early graduation or extension, but there is only one chance to apply for delaying graduation.

## **V. Educational Procedures (培养环节)**

### **1. Study Plan (培养计划)**

Within three months after enrolment, the supervisor (group) will guide each student to develop a study plan based on the requirements of the program in accordance with their ability, specifying on the courses, forms and content requirements of compulsory sessions, dissertation plans, etc. Then, the personal training plan will report to the Graduate School for the record after approval by the college.

During the implementation of the study plan, if graduate students or their supervisors request to modify the study plan, they must apply to the dean in charge of the college, and report to the Graduate School for record after approval.

### **2. Literature Review (文献综述)**

In June of the second term, before starting the dissertation topic, master students should write a literature review and make a public report according to the research direction and the selection work of the dissertation, under the guidance of supervisor.

For specific requirements such as the number of literature and the number of words in the literature review, please refer to the *“Implementation Measures for the Management of Postgraduate Literature Review of Shanghai Ocean University”*. The literature review was graded according to excellent, good, medium, pass and fail grades.

### **3. Thesis Proposal (开题报告)**

The opening report is an important part of the master students' thesis work. It refers to the special

written report for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the master students to implement the thesis research, and it is to supervise and guarantee the quality of the thesis.

The master students' opening report is generally held in the third semester. The topic selection of the dissertation of the master students' opening report should emphasize the close connection with scientific and technological progress, economic construction and social development, have important theoretical and practical significance, and should reflect the cutting-edge and advances of the subject field.

Under the guidance of the supervisor, the master students should conduct a comprehensive scientific demonstration of the selected topic, determine the research content and scope, design and formulate the implementation plan, technical route, highlight the innovation points, and have a good research foundation, and write a standardized opening paper and through the "open topic review" procedure, only those who pass the review can make a public oral report, which will be evaluated by the expert review team. Specifically, it will be implemented in accordance with the *"Detailed Rules for the Implementation of Thesis Proposal Report of Shanghai Ocean University for Graduates"*.

Only those who pass the opening report can enter the dissertation stage; those who fail should revise based on the opinions of the review team, and reopen the question within three months. Those who fail again should terminate the training and be treated as dropping out.

#### 4. Mid-term Examination (中期考核)

To ensure that the master students complete their studies on time and do well, establish a master degree study and mid-term assessment system. The mid-term assessment includes: the study of master courses, the performance of scientific research, the situation of the writing and publication of academic papers, the progress of the research work of the dissertation, the staged results obtained, the work plan and research content of the next step, and the abstracts and thesis of the dissertation, thesis framework, etc. The mid-term assessment is generally completed at the end of the third semester. Specifically, it will be implemented in accordance with the *"Implementation of Medium-stage Assessment for Postgraduates at Shanghai Ocean University"*.

#### 5. Academic Activities (学术活动)

Academic activities can take the forms of delivering academic lectures, attending academic meeting, attending academic lectures, seminars and so on.

During the study, masters should attend a minimum of 5 academic seminars, 6 academic lectures, and they are required to deliver at least 3 beyond-college-level academic lectures with one lecture delivered either at "seminars of academic papers of postgraduates" held either by the university or the college, or at academic meetings.

Academic activities attendance will be assessed. Detailed information is available in the *"Regulations of Shanghai Ocean University on the Participation of Graduate Students in Academic Activities"*.

#### 6. Academic Dissertation (学位论文)

Students who taught in Chinese must finish the dissertation in Chinese.

Students who taught in English will must write the dissertation abstract in Chinese.

Students should finish the dissertation by their own efforts under the advice of supervisors.

The dissertation should demonstrate author's profound and systematic analysis and research. All the content and data in the dissertation should be analyzed and processed in a rigorous scientific way.

Students should get a clear research purpose for the dissertation, guarantee reasonable research techniques, accurate and full materials, authentic data, reasonable analysis, and reliable conclusion.

The language used should demonstrate a consistent and clear style. The dissertation should demonstrate a clear logic. The lay out of the dissertation should conform to conventions. Details can be found in the *"Rules about Dissertation Writing for Postgraduates at Shanghai Fisheries University"*.

A creative perspective should be achieved in the dissertation.

The dissertation should be submitted at least 90 days ahead of the date for dissertation defense, and it should be under spot check of Shanghai Municipal Academic Appraisal Committee.

## 7. HSK Requirements ( HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

## VI. General Requirements (总体要求)

During the three academic years (6 semesters), at least 30 credits are demanded to acquire the degree, which includes at least 26 credits for Courses (including 10 credits for Public Degree Courses, 8 credits for Major Degree Courses, 4 credits for Basic Frontier Courses, 4 credits for Elective Courses), 2 credits for literature review and 2 credits for academic activities. Students must pass the thesis proposal, mid-term evaluation, English/Chinese examination for master degree and thesis defense before applying for graduation. Only those students who meet the necessary requirements and get enough research achievement (such as published paper or book) are qualified to apply for master degree.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Literature Review	Academic Activities
		Public	Major				
The least credits	30	10	8	4	4	2	2

## VII. Curriculum (课程)

### Public Degree Courses (10 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142202	Comprehensive Chinese B	2	32	2
1142204	China Panorama A	2	32	1
1142203	China Culture	2	32	1



Course Number	Course Name	Credit	Class Hour	Semester
0810018	Practical Academic English	2	32	2

#### **Major Degree Courses (8 credits)**

Course Number	Course Name	Credit	Class Hour	Semester
0220301	Fishery Biology	2	32	1
0220310	Fishery Oceanography	2	32	1
0311415	Advanced Biological Oceanography	2	32	1
0310011	Marine Ecosystem Dynamics	2	32	2

#### **Basic Frontier Courses (4 credits)**

Course Number	Course Name	Credit	Class Hour	Semester
0220308	Frontier in Fishery Stock Assessment	1	16	1/2
0220307	Frontier in Fishing Gears and Fishing technology	1	16	1/2
0242301	Frontier in Marine Ecosystem Dynamics	1	16	1/2
0220312	Frontier in Marine Technology (Basic)	1	16	1/2

#### **Elective Courses (4 credits)**

Course Number	Course Name	Credit	Class Hour	Semester
0220302	Stable Isotope Ecology	2	32	2
0220309	International Fisheries Management	2	32	1
0220304	Deep-sea Marine Ecosystem and Fishery	1	16	1/2
0220305	Conservation Biology in the Antarctic Marine Ecosystem	1	16	1/2

### **VIII. Basic requirement for Compulsory Procedures**

The program is managed by the credit system.

Overall credit points: 26 (not include literature and academic activities)

Including:

1. Core units: a minimum of 18 credit points;
2. Compulsory units: a minimum of 4 credit points;
3. Optional units: a minimum of 4 credit points

# PhD Program in Fisheries Resource for International Students

(Discipline Code: 090803)

## I. Introduction (专业介绍)

Fisheries Science (FS) is the academic discipline of managing and understanding fisheries. It is a multidisciplinary science, which draws on the disciplines of oceanography, biology, conservation, ecology, population dynamics, economics and management to attempt to provide an integrated picture of fisheries. The bioeconomics and fisheries law were also emerged in FS.

According to the specialties of marine fisheries discipline at the Shanghai Ocean University, this discipline is divided into four research areas, including Fishery Resources and Management, Fisheries Oceanography and Fisheries Ecology.

Fishery Resources and Management (FRM) is to study fishery biology, fishery population dynamics and fishery resource management regime and measurements, and further provide the theoretical basis and decision references for sustainable exploitation and utilization, management and conservation of fishery resources.

Fisheries Oceanography (FO) is the study of the distribution and abundance of a living marine resource, focusing on how the life cycle of a commercial species is shaped by the physical and biological characteristics of the ocean.

Fisheries Ecology (FE) is the study of ecological processes that affect exploited aquatic organisms, in both marine and freshwater environments for the better understanding the ecological links between important fishery resources and their habitats.

## II. Educational Objectives (培养目标)

This program aims to cultivate high-level professional talents who can adapt to scientific in fisheries and technological progress and meet the needs of social development, respect facts, pursue science and truth. Our cultivated talents also have competitiveness, innovation, and independent research capability, as well as strong sense of social responsibility and scientific responsibility.

1. To have a good command of knowledge and competencies in marine fisheries in biology, oceanography and management, to be professional in marine oceanography and biology research, and be qualified for their careers in research institutions or in private and public sectors.

2. To be familiar with Chinese history, geography, society, economy and other national conditions and basic knowledge of Chinese culture.

3. To cultivate the ability to successfully use English to complete the study and research tasks of the discipline and major, and have the ability to use English to engage in related work of the major; Chinese proficiency should be at least HSK-3.

4. To develop international students' awareness, knowledge, attitudes and skills to embrace, recognize and adapt to cultural diversity, and to play an important role in promoting mutual respect,

understanding and solidarity among different peoples, societies and nations. To possess a broad international vision in the field of this discipline and creatively apply and develop the theories, skills and methods of this discipline around the world, and have a competitive advantage in international academic communication affairs.

### **III. Educational Method (培养方式)**

Either the supervisor or the instructing team with a leading supervisor takes full responsibility in cultivating the doctors, such as providing them with guidance on training plans formulation, professional studies, scientific research and thesis writing.

The program mainly involves research and courses. Students can also benefit from the resource sharing thanks to the mutual cooperation between the university and relevant research institutions.

### **IV. Duration (学习年限)**

The doctoral program usually consists of 4 years, and no more than 6 years (including temporary leave of absence). Students are allowed to apply for advancement or extension of graduation according to their own conditions. There is only one chance to apply for delaying graduation.

### **V. Educational Procedures (培养环节)**

#### **1. Study Plan (制订培养计划)**

Within three months after enrollment, the supervisor (group) will guide each student to develop a study plan based on the requirements of the program in accordance with their ability, specifying on the courses, forms and content requirements of compulsory sessions, dissertation plans, etc. Then, the study plan will report to the Graduate School for the record after approval by the college.

During the implementation of the training plan, if graduate students or their supervisors request to modify the study plan, they must apply to the dean in charge of the college, and report to the Graduate School for record after approval.

#### **2. Literature Review (文献综述)**

Before the thesis proposal, the doctoral candidate should read the relevant literature in home and abroad, write literature reviews and make public reports. All the procedures should under the guidance of supervisors in accordance with the direction of their research.

For specific requirements such as the number of literature and the number of words in the literature review, please refer to the *“Implementation Measures for the Management of Postgraduate Literature Review of Shanghai Ocean University”*. The literature review was graded according to excellent, good, medium, pass and fail grades.

#### **3. Thesis Proposal (开题报告)**

The opening report is an important part of the PhD candidates' thesis work. It refers to the special written report for expounding, reviewing and determining the thesis title. It is a forward-looking plan and

basis for the PhD candidates to implement the thesis research, and it is to supervise and guarantee the quality of the thesis.

The PhD candidates' opening report is generally held in the third semester. The topic selection of the dissertation of the PhD candidate's opening report should emphasize the close connection with scientific and technological progress, economic construction and social development, have important theoretical and practical significance, and should reflect the cutting-edge and advances of the subject field.

Under the guidance of the supervisor, the PhD candidates should conduct a comprehensive scientific demonstration of the selected topic, determine the research content and scope, design and formulate the implementation plan, technical route, highlight the innovation points, and have a good research foundation, and write a standardized opening paper and through the "open topic review" procedure, only those who pass the review can make a public oral report, which will be evaluated by the expert review team. Specifically, it will be implemented in accordance with *the "Regulations on the Evaluation of the Thesis for Doctoral Dissertations of Shanghai Ocean University"* and *the "Detailed Rules for the Implementation of the Report on the Thesis of Shanghai Ocean University for Graduates"*.

Only those who pass the opening report can enter the dissertation stage; those who fail, should be revised based on the opinions of the review team, and reopen the question within three months. Those who fail again, should terminate the training and be treated as dropping out.

#### 4. Mid-term Evaluation and Mid-term Report (中期考核)

To ensure that the PhD candidates complete their studies on time and do well, establish a doctoral degree study and mid-term assessment system. The mid-term assessment includes: the study of doctoral courses, the performance of scientific research, the situation of the writing and publication of academic papers, the progress of the research work of the dissertation, the staged results obtained, the work plan and research content of the next step, and the abstracts and thesis of the dissertation, thesis framework, etc. The mid-term assessment of PhD candidates is generally completed at the end of the third semester.

#### 5. Academic Activities (学术活动)

Academic activities include academic reports, participation in professional academic conferences in the domestic and overseas, academic lectures, academic seminars, etc.

PhD candidates should participate in at least 3 academic seminars and 5 academic lectures by experts or academic conferences at home and abroad.

An assessment system is implemented for postgraduate students participating in academic activities, and 2 credits are counted for passing the assessment of academic activities. Please refer to *the "Regulations of Shanghai Ocean University on the Participation of Graduate Students in Academic Activities"* for specific requirements.

#### 6. Academic Dissertation (学位论文)

Students who taught in English will must write the dissertation abstract in Chinese.

All doctoral students must complete a dissertation to meet the degree requirements under the

guidance of their supervisor. A doctoral dissertation should show that the author has the ability to independently engage in scientific research and has made creative achievements in science or specialized technology.

PhD candidates must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits before applying for a thesis defense. The review and defense of postgraduate dissertations shall be carried out in accordance with the relevant provisions of the *“Working Rules for the Awarding of Masters and Doctorates of Shanghai Ocean University”*.

The basic requirements for a doctoral degree thesis are:

- (1) The dissertation should be completed independently under the guidance of the supervisor (group).
- (2) A rigorous scientific attitude should be adopted to conduct in-depth and systematic analysis and research on a certain field and related content.
- (3) The research purpose of the dissertation is unambiguous, the experimental design or survey method is scientific and reasonable, the data is full and accurate, the data is true, the analysis method is correct, the argumentation is rigorous, and the conclusion is reliable.
- (4) The writing requirements of the dissertation: clear logic, fluency in writing, and conforming to the norms, please refer to “Shanghai Ocean University Graduate Dissertation Writing Standards”.
- (5) The research content of the thesis should be cutting-edge, exploratory and innovative in the subject field.
- (6) Doctoral dissertations must be reviewed by experts and openly defended. Doctoral students must submit their dissertations and pre-defense 3months before the thesis defense, and accept random examinations and comments from the Shanghai Academic Degrees Committee. The procedures and methods for the defense of the application for doctoral dissertation shall be carried out in accordance with the relevant provisions of the *“Working Rules for the Award of Master and Doctorate Degrees of Shanghai Ocean University”*.

#### 7. HSK Requirements ( HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

### VI. General Requirements (总体要求)

A minimum of 16 credits are required for graduation, including at least 12 credits for courses study (including 6 credits for *Public Degree Courses*, 2 credits for *Major Degree Courses*, 2 credits for *Basic Frontier Courses*, 2 credits for *Elective Courses*), 2 credits for literature review and 2 credits for academic activities. Students should not only get the approval of thesis proposal but also pass the mid-term evaluation, the English/Chinese examination for doctoral degree and the thesis defense prior to graduation application. Only those students who meet the necessary curriculum and publication requirements (such as published articles or books) are eligible for the application of doctoral degree.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Literature Review	Academic Activities
		Public	Major				
The least credits	16	6	2	2	2	2	2

## VII. Curriculum

### Public Degree Courses (6 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142204	China Panorama A	2	32	1
2330002	Practical Academic English	2	32	1

### Major Degree Courses (2 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0220301	Fishery Biology	2	32	1
0220310	Fishery Oceanography	2	32	1

### Basic Frontier Courses (2 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0220308	Frontier in Fishery Stock Assessment	1	16	1/2
0220307	Frontier in Fishing Gears and Fishing Technology	1	16	1/2
0242301	Frontier in Marine Ecosystem Dynamics	1	16	1/2
0220312	Frontier in Marine Technology (Basic)	1	16	1/2

### Elective Courses (2 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0220302	Stable Isotope Ecology	2	32	2
0220309	International Fisheries Management	2	32	1
0220304	Deep-sea Marine Ecosystem and Fishery	1	16	1/2
0220305	Conservation Biology in the Antarctic Marine Ecosystem	1	16	1/2

## VIII. Basic Requirement for Compulsory Procedures (必修环节的基本要求)

The program is managed by the credit system.

Overall credit points: 10 (not include literature and academic activities)

Including:

1. Core units: a minimum of 4 credit points;
2. Compulsory units: a minimum of 4 credit points;

3. Optional units: a minimum of 2 credit points

4. Supplementary units:

Generally, students pursuing doctoral degree in fisheries science but without master degree of fisheries science should choose 2 or 3 main discipline-related units in program for master student of fisheries science. Students who haven't taken supplementary units or fail in those units will be denied the right for the dissertation defense. Credit points for supplementary units are not allowed to substitute for credit points in the overall credit points. Examination results for supplementary units will be marked in the student's study report and given a clear indication of "master program". Supplementary units vary from student to student, and are not listed here, but they should be listed in the study plan for the individual student by his/her supervisor.

# **Master Program in Fishing Science for International Students**

**(Discipline Code: 090802)**

## **I. Introduction (专业介绍)**

Fisheries Science (FS) is an applied basic discipline. As an important part of FS, Marine fishery is related to oceanography, biology, statistics, mechanics, navigation, engineering technology, management and information technology.

Fishing Science (FS) is to study ecological fishing gear and methods design for scientific and reasonable exploiting and utilizing aquatic animals and provide the technological support for sustainable development of marine fishery.

## **II. Educational Objectives (培养目标)**

The program aims to cultivate all-around professionals with systematic knowledge in fishery science with oceanography background.

1. To master the basic methods and skills on fishery science. To be professional on fisheries, oceanography, biology and ecology in private sector, academic and research institution and public sector.

2. To be familiar with Chinese history, geography, society, economy and other national conditions and basic knowledge of Chinese culture.

3. To cultivate the ability to successfully use English to complete the study and research tasks of the discipline and major, and have the ability to use English to engage in related work of the major; Chinese proficiency should be at least HSK-3.

4. To develop international students' awareness, knowledge, attitudes and skills to embrace, recognize and adapt to cultural diversity, and to play an important role in promoting mutual respect, understanding and solidarity among different people, societies and nations. To have a good international perspective in the discipline, be able to apply and develop the knowledge, skills and methods of the discipline in the actual environment of many countries, and have the ability to participate in international affairs and international competition.

## **III. Educational Method (培养方式)**

Either the supervisor or the instructing team with a leading supervisor takes full responsibility during the supervision of the master students, such as providing them with guidance on training plans formulation, professional studies, scientific research and thesis writing.

The program mainly involves research and courses. Students can also benefit from the resource sharing thanks to the mutual cooperation between the university and relevant research institutions.

## **IV. Duration (学习年限)**

The master program usually consists of 3 years, and no more than 5 years (including temporary leave



of absence). Students are allowed to apply for early graduation or extension, but there is only one chance to apply for delaying graduation.

## **V. Educational Procedures (培养环节)**

### **1. Study Plan (培养计划)**

Within three months after enrolment, the supervisor (group) will guide each student to develop a study plan based on the requirements of the program in accordance with their ability, specifying on the courses, forms and content requirements of compulsory sessions, dissertation plans, etc. Then, the personal training plan will report to the Graduate School for the record after approval by the college.

During the implementation of the study plan, if graduate students or their supervisors request to modify the study plan, they must apply to the dean in charge of the college, and report to the Graduate School for record after approval.

### **2. Literature Review (文献综述)**

In June of the second term, before starting the dissertation topic, master students should write a literature review and make a public report according to the research direction and the selection work of the dissertation, under the guidance of supervisor.

For specific requirements such as the number of literature and the number of words in the literature review, please refer to the *“Implementation Measures for the Management of Postgraduate Literature Review of Shanghai Ocean University”*. The literature review was graded according to excellent, good, medium, pass and fail grades.

### **3. Thesis Proposal (开题报告)**

The opening report is an important part of the master students' thesis work. It refers to the special written report for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the master students to implement the thesis research, and it is to supervise and guarantee the quality of the thesis.

The master students' opening report is generally held in the third semester. The topic selection of the dissertation of the master students' opening report should emphasize the close connection with scientific and technological progress, economic construction and social development, have important theoretical and practical significance, and should reflect the cutting-edge and advances of the subject field.

Under the guidance of the supervisor, the master students should conduct a comprehensive scientific demonstration of the selected topic, determine the research content and scope, design and formulate the implementation plan, technical route, highlight the innovation points, and have a good research foundation, and write a standardized opening paper and through the “open topic review” procedure, only those who pass the review can make a public oral report, which will be evaluated by the expert review team. Specifically, it will be implemented in accordance with the *“Detailed Rules for the Implementation of Thesis Proposal Report of Shanghai Ocean University for Graduates”*.

Only those who pass the opening report can enter the dissertation stage; those who fail, should revise

based on the opinions of the review team, and reopen the question within three months. Those who fail again should terminate the training and be treated as dropping out.

#### 4. Mid-term Examination (中期考核)

To ensure that the master students complete their studies on time and do well, establish a master degree study and mid-term assessment system. The mid-term assessment includes: the study of master courses, the performance of scientific research, the situation of the writing and publication of academic papers, the progress of the research work of the dissertation, the staged results obtained, the work plan and research content of the next step, and the abstracts and thesis of the dissertation, thesis framework, etc. The mid-term assessment is generally completed at the end of the third semester. Specifically, it will be implemented in accordance with the *“Implementation of Medium-stage Assessment for Postgraduates at Shanghai Ocean University”*.

#### 5. Academic Activities (学术活动)

Academic activities can take the forms of delivering academic lectures, attending academic meeting, attending academic lectures, seminars and so on.

During the study, masters should attend a minimum of 5 academic seminars, 6 academic lectures, and they are required to deliver at least 3 beyond-college-level academic lectures with one lecture delivered either at “seminars of academic papers of postgraduates” held either by the university or the college, or at academic meetings.

Academic activities attendance will be assessed. Detailed information is available in the *“Regulations of Shanghai Ocean University on the Participation of Graduate Students in Academic Activities”*.

#### 6. Academic Dissertation (学位论文)

Students who taught in Chinese must finish the dissertation in Chinese.

Students who taught in English will must write the dissertation abstract in Chinese.

Students should finish the dissertation by their own efforts under the advice of supervisors.

The dissertation should demonstrate author’s profound and systematic analysis and research. All the content and data in the dissertation should be analyzed and processed in a rigorous scientific way.

Students should get a clear research purpose for the dissertation, guarantee reasonable research techniques, accurate and full materials, authentic data, reasonable analysis, and reliable conclusion.

The language used should demonstrate a consistent and clear style. The dissertation should demonstrate a clear logic. The lay out of the dissertation should conform to conventions. Details can be found in the *“Rules about Dissertation Writing for Postgraduates at Shanghai Fisheries University”*.

A creative perspective should be achieved in the dissertation.

The dissertation should be submitted at least 90 days ahead of the date for dissertation defense, and it should be under spot check of Shanghai Municipal Academic Appraisal Committee.

#### 7. HSK Requirements (HSK要求)

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

## VI. General Requirements (总体要求)

During the three academic years (6 semesters), at least 30 credits are demanded to acquire the degree, which includes at least 26 credits for Courses (including 10 credits for Public Degree Courses, 8 credits for Major Degree Courses, 4 credits for Basic Frontier Courses, 4 credits for Elective Courses), 2 credits for literature review and 2 credits for academic activities. Students must pass the thesis proposal, mid-term evaluation, English/Chinese examination for master degree and thesis defense before applying for graduation. Only those students who meet the necessary requirements and get enough research achievement (such as published paper or book) are qualified to apply for master degree.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Literature Review	Academic Activities
		Public	Major				
The least credits	30	10	8	4	4	2	2

## VII. Curriculum

### Public Degree Courses (10 credits )

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142202	Comprehensive Chinese B	2	32	2
1142204	China Panorama A	2	32	1
1142203	China Culture	2	32	1
0810018	Practical Academic English	2	32	2

### Major Degree Courses ( 8 credits )

Course Number	Course Name	Credit	Class Hour	Semester
0220301	Fishery Biology	2	32	1
0211912	Fish Behavior	2	32	1
0310042	Fishing Gear Theory and Design	2	32	1
0232107	Fishery Statistics	2	32	2

### Basic Frontier Courses (4 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0220308	Frontier in Fishery Stock Assessment	1	16	1/2
0220307	Frontier in Fishing Gears and Fishing technology	1	16	1/2
0242301	Frontier in Marine Ecosystem Dynamics	1	16	1/2

Course Number	Course Name	Credit	Class Hour	Semester
0220312	Frontier in Marine Technology (Basic)	1	16	1/2

#### **Elective Courses (4 credits)**

Course Number	Course Name	Credit	Class Hour	Semester
0220302	Stable Isotope Ecology	2	32	2
0220309	International Fisheries Management	2	32	1
0220304	Deep-sea Marine Ecosystem and Fishery	1	16	1/2
0220305	Conservation Biology in the Antarctic Marine Ecosystem	1	16	1/2

### **VIII. Basic Requirement for Compulsory Procedures**

The program is managed by the credit system.

Overall credit points: 26 (not include literature and academic activities)

Including:

- (1) Core units: a minimum of 18 credit points;
- (2) Compulsory units: a minimum of 4 credit points;
- (3) Optional units: a minimum of 4 credit points.

# **Master Program in Food Science and Engineering for International Students**

**(Discipline Code: 083200)**

## **I. Introduction ( 专业介绍 )**

The master degree of Food Science and Engineering was developed on the basis of the Fisheries Manufacturing Department of *Wusong Fisheries School* established in 1912. Up to now, Food Science and Engineering has been approved as a key discipline of the Ministry of Agriculture in 1998, a Shanghai characteristic key discipline in 2005, and got A-level interdisciplinary master's program authorization in 2005 and doctoral program authorization in 2010. The main research areas include high-quality processing and utilization of aquatic products, food quality and safety risk assessment, food cold chain logistics and quality control, new technology of food processing engineering, food nutrition and health, etc.

## **II. Educational Objectives ( 培养目标 )**

The master degree in Food Science and Engineering aims to foster interdisciplinary high-level professionals with excellent innovative and entrepreneurial spirit, high comprehensive quality, and global-minded international perspective for the society. Meantime, with broad and solid basic knowledge of food science and technology, food engineering expertise, and background of food science related knowledge, they will be able to independently engage in food related technology development, scientific research and application, and producing organization management, etc.

## **III. Educational Method ( 培养方式 )**

Either the supervisor or the committee with a leading supervisor takes full responsibility during the supervision of the doctoral students, such as providing them with guidance on training plans formulation, professional studies, scientific research and thesis writing.

The program mainly involves research and courses. Students can also benefit from the resource sharing thanks to mutual cooperation between the university and relevant research institutions.

## **IV. Duration ( 学习年限 )**

Beginning with the mandatory first-year courses, the doctoral program usually consists of 3 years, and no more than 6 years (including temporary leave of absence).

There is only one chance to apply for delaying graduation.

## **V. Educational Procedures ( 培养环节 )**

### **1. Study Plan ( 制定培养计划 )**

Within three months after enrollment of graduate students, the supervisor (group) and graduate

student should fully discuss and develop educational program for the student in light of requirements in the training program as well as the belief of “teaching in accordance with student’s aptitudes”. The educational program should make specific details on the courses, forms and content requirements of compulsory links, dissertation plans, etc. With the permission from the college where students study, the educational program will be registered at the Graduate School of Shanghai Ocean University.

If any modification is to be made in the educational program during the study, either the supervisor or the student should apply to the academic chairman of the college who is in charge. Only with the approval from the college, can the modification be reported to the Graduate School.

## 2. Literature Review ( 文献综述 )

Before the thesis proposal, graduate students should according to the research direction, combined with the topic selection of the dissertation, read domestic and foreign literature in related fields, write a literature review, and make a public report under the guidance of their supervisors.

For specific requirements such as the number of reading documents and the number of words in the literature review, please refer to the *“Implementation Measures for the Management of Postgraduate Literature Review of Shanghai Ocean University”*. The literature review will be graded according to the five grades of excellent, good, medium, pass and fail, and the pass and above will count 2 credits.

## 3. Thesis Proposal ( 开题报告 )

After completing the course study and literature review, graduate students must write a written report on the topic and make a public report before entering the work of the dissertation (usually in the third semester).

Under the guidance of the supervisor(group), the master’s graduate student’s opening report should conduct a comprehensive scientific argumentation on the proposed topic, determine the research content and scope, design and formulate implementation plans, technical routes, explore innovations, and write a written opening report. And make a public oral report, which will be evaluated by an expert review team. Specifically, it will be implemented in accordance with the *“Detailed Implementation Rules of Shanghai Ocean University Graduate Dissertation Opening Report”*.

Only those who pass the opening report can enter the dissertation stage; those who fail, should be revised based on the opinions of the review team, opening report again, and those who still fail, should terminate the training and be treated as dropping out.

## 4. Mid-term Examination ( 中期考核 )

At the end of the third semester after the enrollment of graduate students, according to the training plan and personal training plan, the graduate students will be assessed in terms of political and ideological character, curriculum learning, scientific research practice ability, and physical and mental status. Specifically in accordance with the *“Shanghai Ocean University Mid-term Assessment Implementation Measures for Graduate Students”*.

The mid-term report focuses on checking the progress of the dissertation, and implements an assessment system. The assessment results are scored on five levels: excellent, good, medium, passing

and failing.

#### 5. Academic Activities ( 学术活动 )

Academic activities include participating in academic lectures and reports by experts inside and outside the school, academic seminars, making public academic reports, and participating in professional academic conferences at home and abroad.

Master students should participate in at least 10 expert academic lectures and report meetings on campus, 3 graduate academic seminars, and actively participate in professional academic conferences at home and abroad. Participating in academic activities must record the main points of the expert academic report, and be signed by the expert and confirmed by the supervisor. At least one academic oral report or poster or paper (the graduate student is the first author or the second author headed by the supervisor) should be included in the conference proceedings at the “postgraduate academic paper report meeting” organized at the school level (or college level) or at a professional academic conference at home and abroad. An assessment system is implemented for graduate students participating in academic activities, and 2 credits are counted for passing the assessment of academic activities. Please refer to *the “Regulations of Shanghai Ocean University on the Participation of Graduate Students in Academic Activities”* for specific requirements.

#### 6. Academic Dissertation ( 学位论文 )

Students who taught in Chinese must finish the dissertation in Chinese.

Students who taught in English must write the dissertation abstract in Chinese.

All graduate students must complete a dissertation to meet the degree requirements under the guidance of their supervisor. The master’s degree thesis should reflect the academic level achieved by the graduate students in the field of research, indicating that they have a good grasp of the basic theories, professional knowledge and basic skills of the subject, and have the ability to engage in scientific research in this subject or related subjects or in independently undertake specialized technical work.

The review and defense of postgraduate dissertations shall be carried out in accordance with the relevant provisions of *the “Working Rules for the Awarding of Masters and Doctorates of Shanghai Ocean University”*.

##### **The basic requirements for a master’s degree thesis are:**

- (1) The dissertation should be completed independently under the guidance of the supervisor (group).
- (2) All relevant content of the paper should be analyzed and researched with a rigorous scientific attitude.
- (3) The research purpose of the dissertation is clear, the experimental design or investigation method is reasonable, the data is true, the analysis method is correct, and the conclusion is reliable.
- (4) The writing of the thesis is fluent, and the writing conforms to comply the standard of research papers (refer to *“Shanghai Ocean University Graduate Dissertation Writing Standards”*).
- (5) The thesis should have certain novelty or application value or academic reference value.
- (6) Master’s degree thesis must be reviewed by experts and openly defended. Master’s students must submit their thesis and pre-defense one month before the thesis defense, and accept random examination

and review of the thesis by the Shanghai Academic Degrees Committee. The procedures and methods for the defense of the application for master's degree thesis shall be conducted in accordance with the relevant provisions of the *“Working Rules for the Award of Master and Doctorate Degrees of Shanghai Ocean University”*.

#### 7. HSK Requirements ( HSK要求 )

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

### VI. General Requirements ( 总体要求 )

Master candidates are taught in English, and there are six modules in the curriculum.

Requirements		Degree Courses		Elective Courses	Literature Review	Thesis
		Public	Major			
The least credits	30	10	4	6	2	8

### VII. Curriculum ( 课程 )

#### Public Degree Courses (10 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142202	Comprehensive Chinese B	2	32	2
1142204	China Panorama A	2	32	1
1142203	China Culture	2	32	1
0810018	Practical Academic English	2	32	2

#### Major Degree Courses (4credits)

Course Number	Course Name	Credit	Class Hour	Semester
0241701	Advanced Food Engineering	2	32	2
0241702	Advanced Food Chemistry and Nutrition	2	32	2
0210013	Modern Instrumental Analysis	2	32	1

#### Elective Courses (6credits)

Course Number	Course Name	Credit	Class Hour	Semester
0231901	Food Engineering Principle	2	32	2
0231902	Advanced Analytical Strategies in Food Safety and Quality Monitoring	1	16	2
0262101	Seminar for International Students	2	32	1
0342201	Progress in Research (Supervisor)	2	32	1



## **VIII. Basic Requirement for Compulsory Procedures (必修环节基本要求)**

After meeting the above requirements, the following study steps should be completed:

### **1. Literature Review**

Before the dissertation begins, the postgraduate student should write a literature review and make a public report based on the direction of the research and combined with the selection work of the dissertation under the guidance of the supervisor. The literature review is no less than 5,000 words and there are no less than 30 references. The literature review is graded according to excellent, good, medium, pass and fail grades.

### **2. Academic Activities**

Academic activities include academic reports, participation in professional academic conferences in the domestic and overseas, academic lectures, academic seminars, etc. The postgraduate students should participate in at least three times academic seminars during their studies, participate in expert academic lectures or professional conferences five times in the domestic and overseas, at least at the “graduate academic dissertation” organized by the school (or college) or an academic meeting in the domestic and overseas. Postgraduate students participate in academic activities and will be implemented an assessment system.

# **PhD Program in Food Science and Engineering for International Students**

**(Discipline Code: 083200)**

## **I. Introduction ( 专业介绍 )**

The doctoral degree of Food Science and Engineering was developed on the basis of the Fisheries Manufacturing Department of *Wusong Fisheries School* established in 1912. Up to now, Food Science and Engineering has been approved as a key discipline of the Ministry of Agriculture in 1998, a Shanghai characteristic key discipline in 2005, and got A-level interdisciplinary master's program authorization in 2005 and doctoral program authorization in 2010. The main research areas include high-quality processing and utilization of aquatic products, food quality and safety risk assessment, food cold chain logistics and quality control, new technology of food processing engineering, food nutrition and health, etc.

## **II. Training Objectives ( 培养目标 )**

The doctoral degree in Food Science and Engineering aims to foster interdisciplinary high-level professionals with excellent innovative and entrepreneurial spirit, high comprehensive quality, and global-minded international perspective for the society.

1. To possess the broad and solid basic knowledge of food science and technology, food engineering expertise, and background of food science related knowledge and be able to independently engage in food related technology development, scientific research and application, and producing organization management, etc.

2. To be familiar with Chinese history, geography, society, economy and other national conditions and basic knowledge of Chinese culture.

3. To cultivate the ability to successfully use English to complete the study and research tasks of the discipline and major, and have the ability to use English to engage in related work of the major; Chinese proficiency should be at least HSK-3.

4. To develop international students' awareness, knowledge, attitudes and skills to embrace, recognize and adapt to cultural diversity, and to play an important role in promoting mutual respect, understanding and solidarity among different peoples, societies and nations. To possess a broad international vision in the field of this discipline and creatively apply and develop the theories, skills and methods of this discipline around the world, and have a competitive advantage in international academic communication affairs.

## **III. Training Method ( 培养方式 )**

Either the supervisor or the committee with a leading supervisor takes full responsibility during the supervision of the doctoral students, such as providing them with guidance on training plans formulation, professional studies, scientific research and thesis writing.

The program mainly involves research and courses. Students can also benefit from the resource sharing thanks to the mutual cooperation between the university and relevant research institutions.

#### **IV. Duration ( 学习年限 )**

The doctoral program usually consists of 4 years, and no more than 6 years (including temporary leave of absence). There is only one chance to apply for delaying graduation.

#### **V. Training Procedures ( 培养环节 )**

##### **1. Study Plan ( 制定培养计划 )**

Within three months after enrollment, the supervisor (group) will guide each student to develop a study plan based on the requirements of the program in accordance with their ability, specifying on the courses, forms and content requirements of compulsory sessions, dissertation plans, etc. Then, the personal training plan will report to the Graduate School for the record after approval by the college.

During the implementation of the study plan, if graduate students or their supervisors request to modify the study plan, they must apply to the dean in charge of the college, and report to the Graduate School for record after approval.

##### **2. Literature Review ( 文献综述 )**

Before starting the dissertation topic, the PhD candidate should write a literature review and make a public report according to the research direction and the selection work of the dissertation under the guidance of supervisor.

For specific requirements such as the number of literature and the number of words in the literature review, please refer to the *“Implementation Measures for the Management of Postgraduate Literature Review of Shanghai Ocean University”*. The literature review was graded according to excellent, good, medium, pass and fail grades.

##### **3. Thesis Proposal ( 开题报告 )**

The opening report is an important part of the PhD candidates' thesis work. It refers to the special written report for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the PhD candidates to implement the thesis research, and it is to supervise and guarantee the quality of the thesis.

The PhD candidates' opening report is generally held in the third semester. The topic selection of the dissertation of the PhD candidate's opening report should emphasize the close connection with scientific and technological progress, economic construction and social development, have important theoretical and practical significance, and should reflect the cutting-edge and advances of the subject field.

Under the guidance of the supervisor, the PhD candidates should conduct a comprehensive scientific demonstration of the selected topic, determine the research content and scope, design and formulate the implementation plan, technical route, highlight the innovation points, and have a good research

foundation, and write a standardized opening paper and through the “open topic review” procedure, only those who pass the review can make a public oral report, which will be evaluated by the expert review team. Specifically, it will be implemented in accordance with the *“Regulations on the Evaluation of the Thesis for Doctoral Dissertations of Shanghai Ocean University”* and the *“Detailed Rules for the Implementation of the Report on the Thesis of Shanghai Ocean University for Graduates”*.

Only those who pass the opening report can enter the dissertation stage; those who fail, should be revised based on the opinions of the review team, and reopen the question within three months. Those who fail again, should terminate the training and be treated as dropping out.

#### 4. Mid-term Examination ( 中期考核 )

To ensure that the PhD candidates complete their studies on time and do well, the university establishes a doctoral degree study and mid-term assessment system. The mid-term assessment includes: the study of doctoral courses, the performance of scientific research, the situation of the writing and publication of academic papers, the progress of the research work of the dissertation, the staged results obtained, the work plan and research content of the next step, and the abstracts and thesis of the dissertation, thesis framework, etc. The mid-term assessment of PhD candidates is generally completed at the end of the third semester.

#### 5. Academic Activities ( 学术活动 )

Academic activities include academic reports, participation in professional academic conferences in the domestic and overseas, academic lectures, academic seminars, etc.

PhD candidates should participate in at least 3 academic seminars and 5 academic lectures by experts or academic conferences at home and aboard.

An assessment system is implemented for postgraduate students participating in academic activities, and 2 credits are counted for passing the assessment of academic activities. Please refer to the *“Regulations of Shanghai Ocean University on the Participation of Graduate Students in Academic Activities”* for specific requirements.

#### 6. Academic Dissertation and Defense ( 学位论文 )

Students who taught in English will must write the dissertation abstract in Chinese.

All doctoral students must complete a dissertation to meet the degree requirements under the guidance of their supervisor. A doctoral dissertation should show that the author has the ability to independently engage in scientific research and has made creative achievements in science or specialized technology.

PhD candidates must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits before applying for a thesis defense. The review and defense of postgraduate dissertations shall be carried out in accordance with the relevant provisions of the *“Working Rules for the Awarding of Masters and Doctorates of Shanghai Ocean University”*.

**The basic requirements for a doctoral degree thesis are:**

(1) The dissertation should be completed independently under the guidance of the supervisor (group).

(2) A rigorous scientific attitude should be adopted to conduct in-depth and systematic analysis and research on a certain field and related content.

(3) The research purpose of the dissertation is unambiguous, the experimental design or survey method is scientific and reasonable, the data is full and accurate, the data is true, the analysis method is correct, the argumentation is rigorous, and the conclusion is reliable.

(4) The writing requirements of the dissertation: clear logic, fluency in writing, and conforming to the norms, please refer to “*Shanghai Ocean University Graduate Dissertation Writing Standards*”.

(5) The research content of the thesis should be cutting-edge, exploratory and innovative in the subject field.

(6) Doctoral dissertations must be reviewed by experts and openly defended. Doctoral students must submit their dissertations and pre-defense 3 months before the thesis defense, and accept random examinations and comments from the Shanghai Academic Degrees Committee. The procedures and methods for the defense of the application for doctoral dissertation shall be carried out in accordance with the relevant provisions of the “*Working Rules for the Award of Master and Doctorate Degrees of Shanghai Ocean University*”.

#### 7.HSK Requirements ( HSK要求 )

Students who taught in English must pass HSK-3 before graduation.

Students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

### VI. General Requirements ( 总体要求 )

PhD candidates are taught in English, and there are six modules in the curriculum.

Doctoral students should complete required courses and get minimum number of credits (16 credits) in different sections of training program, pass the following two compulsory steps, namely literature review (2 credits) and academic activities (2 credits). They are also required to pass dissertation proposal, mid-stage report, mid-term assessment, English/Chinese examinations for doctor’s degrees, dissertation defense-rehearsal and dissertation defense. Only those students meeting the requirements can be allowed to graduate from the university, and only those who can both graduate and get enough research fruits (such as publications papers and books) can be allowed to apply for doctor’s degrees, and only those pass the assessment of Degree Assessment Committee can get doctor degree.

Requirements		Degree Courses		Elective Courses	Literature Review	Academic Activities
		Public	Major			
The least credits	16	6	2	4	2	2

### VII. Curriculum (课程)

#### Public Degree Courses (6 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1

Course Number	Course Name	Credit	Class Hour	Semester
1142204	China Panorama A	2	32	1
2330002	Practical Academic English	2	32	1

#### **Major Degree Courses (2 credits)**

Course Number	Course Name	Credit	Class Hour	Semester
0241701	Advanced Food Engineering	2	32	2
0241703	Advanced Food Nutrition and Hygiene	2	32	2

#### **Elective Courses (4 credits)**

Course Number	Course Name	Credit	Class Hour	Semester
0231901	Food Engineering Principle	2	32	2
0231902	Advanced Analytical Strategies in Food Safety and Quality Monitoring	1	16	2
0262101	Seminar for International Students	2	32	1

### **VIII. Conferral of Degree (学位授予)**

The requirements for research outcomes of doctoral students when applying for degrees can be found in the “*Detailed Rules for the Awarding of Master’s and Doctoral Degrees of Shanghai Ocean University*”. Based on the actual situation and the requirements of the detailed rules, College of Food Science and Technology formulates the requirements for the research results of the graduate degree of the college, and reports them to the University Degree Evaluation Committee for implementation after approval.

# 食品科学与工程硕士研究生（国际学生）培养方案

（专业代码：083200）

## 一、学科简介

上海海洋大学食品科学与工程学科及其学位点前身追溯为吴淞水产学校水产制造科，设立于1912年。本学科于1998年被批准为农业部重点学科，2005年被批准为上海市特色重点学科，同年获得食品科学与工程一级学科硕士点学位授予权，2009年建立食品科学与工程博士后科研流动站，并于2010年获得食品科学与工程一级学科博士点学位授予权。至此，本学科具备了从本科、硕士到博士完整的高层次人才培养体系。目前，本学位点主要研究方向包括水产品高质化加工利用、食品质量安全风险评估、食品冷链物流品质控制、食品加工工程新技术、食品营养健康功能研究等，以开拓创新的科学思维和“勤朴忠实”的校训精神培养高层次人才。

## 二、培养目标

国际硕士生热爱中国，遵纪守法，品行端正，诚信忠义，具有较强的事业心和献身精神，具有高尚的品德、健康的身体，以及“团结协作、勤奋敬业、严谨求实、开拓创新”的科研素养。掌握食品科学的基础理论和系统的专门知识，能熟练运用计算机等现代信息技术手段；掌握中文应用能力；具备从事食品科学与工程专业领域的教学、科研、生产及经营管理的工作能力，有较强创新意识和解决实际问题能力的高层次应用型、复合型人才。

## 三、学习年限

攻读硕士学位的学制一般为3年，可根据实际情况允许研究生提前或延期毕业。在校最长学习年限（含休学）不超过5年。

硕士研究生课程学习一般需要1.5学期，联合培养硕士研究生的基础课程一般在上海海洋大学完成，学位论文工作在联合培养单位进行。

## 四、总体要求

硕士研究生在学期间应至少完成20学分的课程学习和文献综述、学术活动（各2学分，合4学分）两大必修环节，共计24学分，并通过学位论文开题报告、中期考核、学位论文答辩等培养环节后方可毕业。

符合毕业条件、通过硕士研究生外语学位课程考试以及取得授予硕士学位所要求的科研成果等条件者可申请学位。

## 五、课程设置与学分基本要求

课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	备注
一、公共学位课 硕士≥10学分	1142204	中国概况A	2	1	必修	
	1142205	中国概况B	2	2	必修	
	1142206	实践汉语	2	1	必修	
	1142203	中国文化	2	1	必修	
	0810018	第一外语A（实用学术英语）	2	2	必修	
二、专业学位课 硕士≥4学分	0332001	水产品加工及贮藏工程专题	2	1	选修	
	0311903	食品安全专题	2	1	选修	
	0332101	食品科学与工程专题	1	1	选修	
	0332102	现代食品微生物学	1	1	选修	
	0311907	食品生物技术进展	1	1	选修	
	0311901	论文写作与学术规范	1	1	必修	
	0210001	高级食品化学	2	1	选修	
	0311902	现代食品营养学	1	2	选修	
	0210003	现代食品工程学	2	1	选修	
	0332103	高级食品微生物学	2	1	选修	
三、选修课 硕士≥6学分	0312101	水产品高质化利用	1	1	选修	
	0312102	学科前沿研讨课（导师研讨课程）	1	1	选修	
	0210024	现代食品冷冻冷藏技术	1	1	选修	
	0210013	现代仪器分析	2	1	选修	
	0210023	发酵工艺学原理	1	1	选修	
	0211802	果蔬热处理	1	1	选修	
	0210022	食品蛋白质化学	1	1	选修	
	0210025	食品脂类化学	1	1	选修	
	0210021	海藻化学	1	1	选修	
	0210018	食品流变学	1	1	选修	
	0210016	食品酶学	1	1	选修	
	0210041	天然产物的提取和应用	1	1	选修	
	0210005	生物化学实验技术	1	1	选修	
	0210053	试验设计与数据处理	1	1	选修	
	0210047	微生物快速检测技术（实验课）	2	1	选修	
	0010002	现代科技信息的电子检索	1	1	选修	



## 六、培养环节和学分基本要求

### 1. 个人培养计划

研究生入学三个月之内，指导教师应按照培养方案的要求，根据因材施教的原则，指导研究生制订个人培养计划，经学院同意后，报研究生院备案。

在培养计划执行过程中，研究生或其导师若要求修改培养计划，须提出充分的理由，经学院分管院长同意后，报研究生院备案。

### 2. 文献综述

①研究生在学位论文开题之前，应在导师指导下，根据所研究的方向，结合学位论文选题工作，阅读相关领域国内外文献，写出文献综述，并进行公开报告。

②硕士研究生要求阅读与本研究领域有关的文献不少于30篇，其中外文文献不少于10篇。文献综述不少于5000中文字。

③文献综述按优、良、中、及格及不及格五级评分。具体要求参见《上海海洋大学关于研究生文献综述管理实施办法》。

### 3. 开题报告

①研究生开题报告一般在入学后的第三学期进行。学位论文选题应强调同科技进步、经济建设和社会发展密切联系，有重要的理论意义和实际意义，要体现学科领域的前沿性和先进性。并在导师指导下对拟选的课题进行全面的科学论证，确定研究内容和范围，设计和制定实施方案、技术路线，突出创新点，撰写规范的《学位论文工作计划书》。

②研究生开题报告需进行公开报告，由专家评议小组进行考核。其中，博士研究生在公开报告前需经过“开题评阅”程序，具体按照《上海海洋大学博士研究生学位论文开题评阅的规定》和《上海海洋大学研究生学位论文开题报告实施细则》实施。

### 4. 中期考核及中期汇报

在硕士研究生入学后的第四学期，按照培养方案及个人培养计划，对研究生在政治思想品德、课程学习、科研实践能力、学位论文进展情况、身心状况等方面进行一次全面考核，以考察科学研究素养、学位论文进展情况为重点。具体按照《上海海洋大学研究生中期考核实施办法》进行。

### 5. 学术活动

①学术活动包括作学术报告、参加国内外专业学术会议、专家学术讲座、学术研讨活动等。

②硕士生在校期间应至少参加研究生学术研讨活动3次，参加专家学术讲座或国内外专业学术会议5次，至少在校级（或院级）组织的“研究生学术论文报告会”上或国内外专业学术会议上作1次学术口头报告或墙报或论文（研究生是第一作者或导师为首的第二作者）被收录会

议论文集。

③研究生参加学术活动实行考核制度。具体要求参见《上海海洋大学关于研究生参加学术活动的规定》。

## 6. 论文撰写及答辩

研究生学位论文的基本要求：

①应在导师（组）指导下独立完成学位论文。

②对某领域以及相关的内容应以严谨的科学态度，进行深入、系统的分析研究。

③学位论文的研究目的明确、实验设计或调查方法科学合理、资料翔实、数据真实、分析方法正确、论证严密、结论可靠。

④学位论文的撰写要求：逻辑清晰、文笔流畅、合乎规范，参见《上海海洋大学研究生学位论文写作规范》。

⑤硕士学位论文应具有一定的新意及应用价值或学术参考价值。

⑥学位论文须经过专家评阅和公开的答辩。硕士生须在论文答辩前1个月提交论文并进行预答辩。关于申请学位论文答辩程序及办法按照《上海海洋大学硕士、博士学位授予工作细则》有关规定进行。

## 7. HSK要求

以中文授课的学生须通过HSK-5级，并用中文完成论文。

## 8. 学位授予

完成硕士课程学习及培养环节，取得规定学分以及授予硕士学位所要求的科研成果，并通过学位论文答辩者，经校学位评定委员会审核，分别授予工学硕士学位，并获得硕士研究生毕业证书；未达到学位授予条件而达到毕业要求者，准予毕业，获得毕业证书。

# **Master Program in Fishery Economy and Management for International Students**

**(Discipline Code: 0908Z1)**

## **I. Introduction ( 学科简介 )**

Fishery Economics and Management is a discipline mainly based on economics, management, and the sciences of fisheries and aquaculture. The discipline is committed to the following researching areas: fisheries policies, development of regional fishery economy, adjustment of fisheries structure and its optimization, sustainable development of fisheries, relationship between utilization of marine biological resources and institutional arrangement, sustainable utilization of marine biological resources and environment.

This discipline in our university mainly focuses on the studies of fisheries resources and environmental economics, aquatic product trade and marketing, theories and policies of fisheries and aquaculture economics, and aquatic product quality monitoring and management, fisheries finance and insurance, fisheries and aquaculture enterprises management, and the development of fishing villages and communities.

## **II. Educational Objectives ( 培养目标 )**

The goal of this discipline is to cultivate high-level specialized talents who meet the needs of technological progress and social development, are proficient in domestic and foreign fishery economy and management theories, have professional research and extensive knowledge, are competitive and creative, are loyal to science and truth, have independent work ability and research leadership ability, and have a strong sense of social responsibility.

1. Love China, abide by laws and regulations, have upright conduct, integrity and loyalty, and have a strong sense of dedication and dedication.

2. Possess deep understanding and insight abilities in the professional field, reasonable knowledge structure, good scientific and cultural literacy, and independent engagement. The practical work ability of creative scientific research and the achievement of creative results in science or specialized technology.

3. Have physical and mental health.

4. Have a good international perspective in the field of this discipline, be able to apply and develop the knowledge, skills, and methods of this discipline in the actual environment of multiple countries, and have the ability to participate in international affairs and competition.

## **III. Research Direction ( 研究方向 )**

After years of accumulation and sedimentation, this discipline has formed distinct characteristics in the fields of fishery economy theory and policy, fishery resources and environmental economy, aquatic product market and trade, and fishing village development.

Main research directions:

Fishery Economy Theory and Policy: Mainly studying the basic theories of effective allocation and utilization of fishing and aquaculture resources, adjustment of fishery industry structure, fishery support and protection, modernization of agriculture, and policies related to sustainable utilization of fishery resources, production, circulation, processing, trade, and market regulation of aquatic products, financial support for fishing, and labor transfer in fishing villages.

Fishery Resources and Environmental Economy: Mainly studying the relationship between the development of fishery economy and resource and environmental protection, the impact of different productivity layouts on fishery resources and environment and their economic effects, economic policies for preventing and controlling fishery environmental pollution, the formulation of scientific and economically effective fishery environmental standards, and fishery resources and environmental economic policies.

Aquatic Product Market and Trade: Mainly studying the history and development status of aquatic product trade, technical barriers and green barriers in aquatic product technology trade, fishery subsidies and domestic support for aquatic products, trade systems and policies such as aquatic product tariffs, international competitiveness of aquatic products, and the impact of aquatic product trade on resources and environment.

#### **IV. Duration ( 学习年限 )**

Generally, the students will complete the Master program within 3 years, and studies should not been taken longer than 5 years (including suspension of schooling). Students are allowed to apply for early graduation or extension.

Application for delay of graduation is allowed only once. The first year and half will focus on course studies within the Master's program. Students who are cultivated in the way of cooperation between a research institute and our school need to finish their course credits at Shanghai Ocean University before moving on to the next step of thesis preparing at the respective research institute.

#### **V. General Requirements ( 总体要求 )**

Master students must complete 24 credits in total, including at least 20 credits of course study, 2 credits for literature review and 2 credits for academic activities. Students must pass the thesis proposal, the midterm evaluation, the English/Chinese examination for Master students and the thesis defense before applying for graduation. Only those students who meet the necessary requirements and get sufficient research achievements (such as published papers or books) are qualified to apply for the Master degree.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Literature Review	Academic Activities
		Public	Major				
The least credits	24	10	4	2	4	2	2

## VI. Curriculum and Basic Credit Requirements (课程设置与学分基本要求)

Course Type	Course Number	Course Name	Credit	Class Hour	Semester	Compulsory or not	Evaluation Mode	Notes
<b>Public Degree Courses (10 Credits)</b>	1142201	Comprehensive Chinese A	2	32	1			
	1142202	Comprehensive Chinese B	2	32	2			
	1142204	China Panorama A	2	32	1			
	1142203	China Culture	2	32	1			
	0810018	Practical Academic English	2	32	2			
<b>Major Degree Courses (4 Credits)</b>	0512202	Intermediate Fishery Resources and Environmental Economics	2	32	2		Paper	
	0410027	Intermediate Microeconomics	2	32	1		Examination	
<b>Basic Frontier Courses (2 Credits)</b>	0511904	Research Progress in Thesis Subjects	1	16	2		Report	
	0431202	Advanced Fishery Economics and Management	1	16	1		Paper	
	0532301	Sustainable Development of Aquatic Products (一)	1	16	1	Compulsory	Paper	
	0532303	Sustainable Development of Aquatic Products (二)	1	16	2	Compulsory	Paper	
<b>Elective Courses (4 Credits)</b>	0441703	Modern Industrial Economics	2	32	1		Paper	
	0441704	Development Economics	2	32	1		Paper	
	0441705	International Trade Theory, Policy And Strategy	2	32	2		Paper	
	0441706	International Financial Theory and Policy	2	32	2		Paper	
	0431208	Advanced Sections of Aquatic Product Market and Trade	1	16	2		Paper	
	0511905	Supervisor's Seminar	1	16	1		Report	

## VII. Educational Procedures and Basic Requirements for Credits (培养环节和学分基本要求)

### 1. Personal Development Plan (个人培养计划)

Within three months of graduate enrollment, the supervisor (group) shall guide the graduate students in formulating their personal training plans according to the requirements of the training plans and the principle of individualized teaching. Specific regulations shall be made for the courses, required courses, content requirements, degree thesis plans, etc. After obtaining the consent of the college, they shall be reported to the Graduate School for record keeping.

### 2. Literature Review (文献综述)

Before the opening of the thesis, graduate students, under the guidance of their supervisor, should

review the research progress in relevant fields both domestically and internationally, write a literature review, and make a public report based on the topic and research direction of the thesis. The specific requirements for writing literature reviews can be found in the *“Implementation Measures for Graduate Literature Review Management at Shanghai Ocean University”*.

### 3. Thesis Proposal ( 开题报告 )

The project proposal is usually given in the third semester. Under the guidance of the supervisor, master's students conduct comprehensive scientific argumentation on the proposed topic, determine the research content and scope, design and develop implementation plans and technical routes, explore innovative points, write the “Master's Graduate Thesis Work Plan”, and make a public report. The assessment will be conducted by a professional evaluation group. The specific assessment requirements are detailed in the *“Implementation Rules of Shanghai Ocean University Graduate Thesis Opening Report”*.

### 4. Mid-term Examination ( 中期考核 )

In the fourth semester after enrollment, graduate students will be assessed in terms of political and moral character, course learning, scientific research and practical abilities, progress of academic theses, and physical and mental health according to their personal training plan. For specific assessment requirements, please refer to the *“Implementation Measures for Midterm Assessment of Graduate Students at Shanghai Ocean University”*.

### 5. Academic Activities ( 学术活动 )

Academic activities must run through the entire process of cultivating academic degree graduate students, mainly in the form of attending academic reports (lectures), academic seminars, and giving special reports. For specific requirements, please refer to the *“Regulations of Shanghai Ocean University on Graduate Student Participation in Academic Activities”*.

### 6. Degree Foreign Language ( 学位外语 )

Academic degree graduate students must pass the Master's degree foreign language course examination during their studies in order to be awarded a degree. For all international student, students who are taught in English must pass HSK-3 Chinese Proficiency test before graduation; students who are taught in Chinese must pass HSK-5 Chinese Proficiency test and finish the dissertation in Chinese.

The requirements for exemption from the degree foreign language examination are detailed in the *“Regulations of Shanghai Ocean University on Exemption from the Graduate Degree Foreign Language Course Examination”*.

### 7. Paper Writing and Defense ( 论文撰写及答辩 )

All graduate students must complete a thesis that meets the degree requirements under the guidance of their supervisor. The Master's degree thesis should reflect the academic level achieved by the Master's degree student in the field of research in this discipline, indicating that I have a good grasp of the basic

theories, specialized knowledge, and basic skills of this discipline, and have the ability to engage in scientific research in this discipline or related disciplines or independently undertake technical work. The basic requirements for a Master's thesis include:

- ① Students should independently complete thesis under the guidance of their supervisor (team).
- ② All relevant content of the paper should be analyzed and studied with a rigorous scientific attitude.
- ③ The research purpose of the degree thesis is clear, the experimental design or investigation method is reasonable, the data and information are authentic, the analysis method is correct, and the conclusion is reliable.
- ④ The thesis has clear logic and fluent writing, and the writing meets *the "Writing Standards for Graduate Dissertations at Shanghai Ocean University"*.
- ⑤ The paper should have certain innovation, application value, or academic reference value.
- ⑥ The degree thesis must undergo expert review and public defense. The procedures and methods for applying for the defense of Master's degree theses shall be in accordance with the relevant provisions of *the "Work Rules for Granting Master's and Doctoral Degrees at Shanghai Ocean University"*, and shall be subject to spot checks of Doctoral/Master's degree theses by higher authorities (after degree awarding).

#### 8. Degree Granting ( 学位授予 )

The academic achievement requirements for applying for a graduate degree can be found in *the "Detailed Rules for Granting Master's and Doctoral Degrees at Shanghai Ocean University"*. The college (discipline), based on actual conditions and not lower than the requirements of the detailed rules, formulate academic achievement requirements for graduate students applying for degrees in the college (discipline), and submit them to the university's degree evaluation committee for filing after being approved by the degree evaluation subcommittee.

# **PhD Program in Fishery Economics and Management for International Students**

**( Discipline Code:0908Z1 )**

## **I. Introduction ( 学科简介 )**

Fishery economics and management is a discipline mainly based on economics, management, and the science of fisheries and aquaculture. The discipline is committed to the following research areas: fisheries economics, fisheries policies, development of regional fishery economy, adjustment of fisheries structure and its optimization, sustainable development of fisheries, the relationship between utilization of marine biological resources and their institutional arrangements, sustainable utilization of marine biological resources and environment.

At our university, Fishery economics and management focuses on the studies of fisheries resources and environmental economics, aquatic product trade and marketing, theories and policies of fisheries and aquaculture economics, and aquatic product quality monitoring and management, fisheries finance and insurance, fisheries and aquaculture enterprises management, and the development of fishing villages and communities.

## **II. Educational Objectives ( 培养目标 )**

The discipline aims to cultivate all-around professionals adaptive to the development of modern scientific technological and social demands. Graduates will be knowledgeable, competitive, creative, and loyal to science. Graduates will acquire exclusive understandings and abilities in their professional areas, a sound knowledge structure, and good scientific literacy. They will be creative and independent thinkers who have the potential to make break-through achievements in their respective fields of science and technology.

The professionals will be able to understand, appraise, apply and develop theories of fishery economics and management and they will be capable of independent and high-quality research in their field. Graduates will acquire the necessary capabilities to gradually take over leadership positions in their research fields, and to take ownership of first-class scientific research. Graduates will also be able to understand, appraise and obey laws and regulations; they will be healthy, and will learn to be well-behaved, trust-worthy and dedicated to the development of human beings, truth, and science.

## **III. Research Directions ( 研究方向 )**

After years of accumulation and precipitation, this discipline has formed distinctive characteristics in fishery economic theory and policy, fishery resources and environmental economy, aquatic product market and trade, and fishing village development.

Main research directions:

Fishery economic theory and policy: mainly studies the basic theories of fishing industry and



aquaculture industry resources effective allocation and utilization, fishery industry structure and its adjustment, fishery support and protection, agricultural modernization and other aspects and policies on fishery resources and their sustainable utilization, aquatic product production, circulation, processing, trade and market supervision, fiscal support for fishery, and labor transfer in fishing villages.

Fishery resources and environmental economy: mainly studies the relationship between fishery economic development and resource and environmental protection, the impact of different productive forces on fishery resources and environment and its economic effects, economic policies for fishery environmental pollution prevention and control, the formulation of scientific and cost-effective fishery environmental standards, fishery resources and environmental economic policies.

Aquatic products market and trade: mainly studies the history and development of aquatic product trade, technical barriers and green barriers in aquatic product technology trade, fishery subsidies and domestic support for aquatic products, trade systems and policies such as aquatic product tariffs, as well as the international competitiveness of aquatic products, the impact of aquatic product trade on resources and environment, etc.

#### IV. Duration ( 学习年限 )

Generally, the period of study for full-time doctors will be 4 years, and normally not more than 6 years (including suspension of schooling). Students are allowed to apply for advancement or extension of graduation according to their individual conditions.

#### V. General Requirements ( 总体要求 )

Doctoral students must complete required courses and get a minimum number of credits (18 credits) in different sections of the training program, pass the following two compulsory steps, namely the literature review (2 credits) and academic activities (2 credits). Students are also required to pass the evaluation of the dissertation proposal, the mid-term report, the mid-stage assessment, the English/Chinese examinations for doctor's degrees, the dissertation defense-rehearsal and the final dissertation defense. Only those students who can meet these requirements can be allowed to graduate from the university, and only those who can both graduate and get enough research output (such as journal articles or academic books) are permitted to apply for doctor's degree, and only those who pass the assessment of Degree Assessment Committee can be awarded a doctor degree.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Literature	Academic Activities
		Public	Major				
The least credits	22	6	5	3	4	2	2

#### VI. Basic Requirements for Courses and Credits(课程设置与学分基本要求)

The program is managed by the credit system.

Overall credit points: 18 (not include literature and academic activities)

Including:

1. Core units: a minimum of 6 credit points;
2. Compulsory units: a minimum of 8 credit points;
3. Optional units: a minimum of 4 credit points;
4. Supplementary units:

Normally, students pursuing the doctoral degree in fisheries economics and management but without master degree in either economics or management should choose 2 or 3 main discipline-related units from the program for master students of fisheries economics and management. Students who haven't taken supplementary units or fail those units will be denied the right for the dissertation defense. Credit points for supplementary units are not allowed to substitute for credit points in the overall credit points. Examination results for supplementary units will be marked in the student's study report and given a clear indication of "doctoral program". Supplementary units vary from student to student, and are not listed here, but they should be listed in the training plan for the individual student by his/her supervisor.

Course Type	Course Number	Course Name	Credit	Class Hour	Semester	Compulsory or not	Evaluation Mode	Notes
<b>Public Degree Courses (6 Credits)</b>	1142201	Comprehensive Chinese A	2	32	1			
	1142204	China Panorama A	2	32	1			
	2330002	Practical Academic English	2	32	1			
<b>Major Degree Courses (5 Credits)</b>	0532201	Advanced Microeconomics	2	32	1		Report	
	0532202	Advanced Macroeconomics	1	16	2		Report	
	0532203	Advanced Econometrics	2	32	2		Report	
<b>Basic Frontier Courses (3 Credits)</b>	0511904	Research Progress in Subjects	1	16	2		Report	
	0431202	Advanced Fishery Economics and Management	1	16	1	Compulsory	Paper	
	0532301	Sustainable Development of Aquatic Products (一)	1	16	1	Compulsory	Paper	
	0532303	Sustainable Development of Aquatic Products (二)	1	16	2	Compulsory	Paper	
<b>Elective Courses (4 Credits)</b>	0441704	Development Economics	2	32	1		Paper	
	0511905	Supervisor's Seminar	1	16	1		Report	
	0431208	Advanced Sections of Aquatic Product Market and Trade	1	16	2		Paper	
	0531903	Advanced Food Economics and Management	2	32	3		Paper	
	0531904	Advanced Environmental and Fishery Resources Economics	2	32	3		Paper	

## **VII. Basic Requirements for Training Procedures and Credits (培养环节和学分基本要求)**

### **1. Personal Training Plan**

Within three months of enrollment, the supervisor (group) will guide the graduate students to formulate individual training plans in accordance with the requirements of the training plan and the principle of teaching according to aptitude, make specific provisions on the courses, compulsory links, content requirements, dissertation plans, etc., and report them to the Graduate School for the record after obtaining the consent of the School.

### **2. Literature Review**

Before the dissertation is opened, graduate students should, under the guidance of the supervisor, review the domestic and foreign research progress in related fields, write a literature review, and make a public report in combination with the topic selection and research direction of the dissertation. For details of the specific requirements for literature review writing, please refer to the *“Implementation Measures of Shanghai Ocean University on the Management of Graduate Literature Review”*.

### **3. Proposal Report**

The thesis proposal report is generally carried out in the third semester, graduate students should conduct a comprehensive scientific demonstration of the proposed topic under the guidance of the supervisor, determine the research content and scope, design and formulate implementation plans, technical routes, highlight innovative points, and should have a good research foundation, the writing and assessment requirements are detailed in the *“Implementation Rules for the Graduate Dissertation Proposal Report of Shanghai Ocean University”*, doctoral students must carry out the “opening review” procedure (for details, please refer to the *“Regulations on the Proposal Review of Doctoral Dissertations of Shanghai Ocean University”*), Only those who pass the review can make a public report.

Only those who pass the proposal can enter the dissertation stage; Those who fail to pass should be revised according to the opinions of the review group and re-opened the thesis, and those who still fail should terminate the training and be treated as withdrawal.

### **4. Mid-term Assessment and Mid-term Report**

In the fourth semester after enrollment, according to the postgraduate training plan and its personal training plan, graduate students will be evaluated in terms of political ideology and morality, course study, scientific research practice ability, dissertation progress, physical and mental condition, etc. For specific requirements, please refer to the *“Implementation Measures for the Mid-term Assessment of Graduate Students of Shanghai Ocean University”*.

In addition to the mid-term assessment, doctoral students should also make a mid-term report to the steering group or the expert group of the college, report the stage results and existing problems of scientific research work, fill in the *“Shanghai Ocean University Doctoral Interim Report Form”*, implement the assessment system, and the assessment results are graded according to five levels: excellent, good, medium, pass and fail.

### **5. Academic Activities**

Academic activities must run through the whole process of postgraduate training, mainly in the form of participation in academic reports (lectures), academic seminars and special reports, etc., the specific

requirements are detailed in the Regulations of Shanghai Ocean University on Postgraduate Participation in Academic Activities.

## **6. Degree Foreign Language**

Doctoral students must pass the doctoral degree foreign language course examination during the period of study before the degree can be awarded. For all international student, students who are taught in English must pass HSK-3 Chinese proficiency test before graduation; students who are taught in Chinese must pass HSK-5 Chinese proficiency test and finish the dissertation in Chinese.

The requirements for degree foreign language exemption are detailed in *the “Regulations of Shanghai Ocean University on the Exemption from Examination for Postgraduate Degree Foreign Language Courses”*.

## **7. Thesis Writing and Defense**

All graduate students must complete a dissertation that meets the degree requirements under the supervision of a supervisor. The doctoral dissertation should demonstrate that the author has the ability to independently engage in scientific research and to produce creative results in science or technical expertise. The basic requirements for a doctoral dissertation include:

- (1) The dissertation should be completed independently under the guidance of the supervisor (group).
- (2) All relevant contents of the paper should be analyzed and studied with a rigorous scientific attitude.
- (3) The research purpose of the dissertation is clear, the experimental design or investigation method is reasonable, the data is true, the analysis method is correct, and the conclusion is reliable.
- (4) The dissertation has clear logic, smooth writing, and the writing is in line with *the “Shanghai Ocean University Graduate Dissertation Writing Specification”*.
- (5) The paper should have innovative results or have important theoretical significance.
- (6) The dissertation shall be reviewed by experts and publicly defended, and the procedures and measures for applying for the defense of doctoral dissertation shall be carried out in accordance with the relevant provisions of *the “Rules for the Conferment of Master’s and Doctoral Degrees by Shanghai Ocean University”*, and shall be subject to random inspection of doctoral dissertations by the competent authority at a higher level (post-award sampling inspection).

## **8. Degree Awarding**

For details of the academic achievement requirements for postgraduate applicants for degrees, please refer to *the “Rules for the Conferment of Master’s and Doctoral Degrees at Shanghai Ocean University”*. The college (discipline) shall, in light of the actual situation and on the basis of not less than the requirements of the detailed rules, formulate the academic achievement requirements for graduate students of the college (discipline) to apply for degrees, and submit them to the degree evaluation committee for the record after being examined and approved by the degree evaluation subcommittee.

# 应用经济学硕士研究生（国际学生）培养方案

（专业代码：020200）

## 一、学科简介

经济学是研究人类社会在各个发展阶段上的各种经济活动和各种相应的经济关系，及其运行、发展规律的科学，分为理论经济学和应用经济学两个分支学科，经济学的核心思想是资源的优化配置与优化再生。应用经济学是经济学的其中一个分支学科，它主要运用经济学的基本原理和分析方法，研究经济活动各相关领域的理论、运行机制和规律、或对非经济活动领域的经济效益和社会效益进行分析和评价的学科，具有理论联系实际、应用性强、直接服务于经济建设的特点。它将经济学的一般原理和相关领域特有的经济学基础理论转化为经济政策或经济管理制度，直接服务于社会经济建设和经济发展。

## 二、培养目标

本学科致力于培养具有严谨求实的学术作风，具备全面、扎实的经济学基础理论和专业知识，掌握本专业领域的基础研究成果，具备学术研究的基本能力，能够针对现实经济问题进行调查研究、设计方案、构建模型、实证检验，并具有继续学习、创新和提高的基础和能力，能够比较熟练地掌握中文与英文并能熟练地阅读本专业的中文与英文文献，可承担本学科的教学、科研工作中高层次的经济管理工作，具有健康的心理和体魄的高级专门人才。

具体要求如下：

1. 具有系统的经济学及管理学的基本理论素养。
2. 具有扎实的应用经济学理论基础和专业知识，把握本学科的理论前沿及发展动态。
3. 掌握现代经济学的研究方法，了解本学科的发展现状和发展趋势，具备在本学科某一方向从事调查、研究、分析及决策的能力。
4. 具有较强的语言与文字表达、人际沟通和解决实际经济问题的能力。
5. 掌握计算机技术和中文，能够阅读专业外文资料，熟练进行专业文献检索。
6. 具有创新意识和精神，能够独立从事科学研究工作，具备较强的科学研究能力。

## 三、研究方向

根据上海海洋大学的学科特色和学科优势，本学位点设立产业经济学、国际贸易学、区域经济学和金融学四个二级学科方向。

### 1. 产业经济学

主要对接国家现代渔业建设和国家海洋战略需求，以渔业经济、海洋产业经济为主要研究

领域，重点研究近海及内陆渔业资源与生态环境保护、远洋渔业资源的国际合作、海洋产业与生态环境、长三角海洋产业协同发展等。

## 2. 金融学

主要围绕中国金融体制改革和金融市场创新的现实发展，以资产定价和风险管理为基础，聚焦中国的金融创新，重点研究海洋产业和企业投融资的新问题和新现象。

## 3. 国际贸易学

主要围绕强国海洋战略、极地战略和“一带一路”倡议，重点研究全球水产品贸易格局与政策措施、中国与“一带一路”沿线国家贸易与产能合作、中国与北极理事会成员国的国际合作等。

## 4. 区域经济学

主要结合“海陆统筹”国家战略，以涉海区域经济与政策、海岸带开发与利用为主要研究领域，重点研究海陆经济联动和协调发展、公海区域海洋生物资源管理与国际合作、海岸带开发与管理等。

# 四、学习年限（研究生院统一确定内容）

硕士研究生的学制为3年，如不能按期完成学业的，可申请延期毕业。硕士生在校最长学习年限（含休学和保留学籍）不超过5年。

联合培养研究生的基础课程一般在上海海洋大学完成，学位论文工作在联合培养单位进行。

# 五、总体要求（研究生院统一确定内容）

硕士研究生在学期间应至少完成22学分的课程学习以及必修环节（文献综述和学术活动各2学分，合计4学分），共计26学分，并通过学位论文开题报告、中期考核、学位论文答辩等规定的培养环节后方可毕业；符合毕业条件、通过研究生学位外语课程考试并取得授予硕士学位的科研成果等条件者可申请学位，经校学位评定委员会批准，可获硕士学位。

# 六、课程设置与学分基本要求

课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	考核方式	备注
一、公共学位课 硕士≥10学分	1142204	中国概况 A	2	1	必修	考查	
	1142205	中国概况 B	2	2	必修	考查	
	1142206	实践汉语	2	1	必修	考查	
	1142203	中国文化	2	1	必修	考查	
	0810018	第一外语 A（实用学术英语）	2	2	必修	考试	

课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	考核方式	备注
二、专业学位课 硕士≥8 学分	产业经济学						
	0410027	中级微观经济学	2	1	必修	报告	
	0410028	中级宏观经济学	2	2	必修	考试	
	0410029	中级计量经济学	2	2	必修	考试	
	0511901	论文写作与学术规范（经济管理学院）	1	2	必修	论文	
	0411402	现代产业经济学	2	1	必修	论文	
	金融学						
	0410027	中级微观经济学	2	1	必修	报告	
	0410028	中级宏观经济学	2	2	必修	考试	
	0410029	中级计量经济学	2	2	必修	考试	
	0511901	论文写作与学术规范（经济管理学院）	1	2	必修	论文	
	0411411	金融理论与政策	2	1	必修	考试	
	国际贸易学						
	0410027	中级微观经济学	2	1	必修	报告	
	0410028	中级宏观经济学	2	2	必修	考试	
	0410029	中级计量经济学	2	2	必修	考试	
	0511901	论文写作与学术规范（经济管理学院）	1	2	必修	论文	
	0410022	国际贸易理论与政策	2	2	必修	考试	
	区域经济学						
	0410027	中级微观经济学	2	1	必修	报告	
	0410028	中级宏观经济学	2	2	必修	考试	
	0410029	中级计量经济学	2	2	必修	考试	
	0511901	论文写作与学术规范（经济管理学院）	1	2	必修	论文	
	0511920	区域经济理论与政策	2	2	必修	论文	
三、前沿课程 硕士≥2 学分	0420005	经济学基础前沿课程（基）	2	2	必修	论文	
	0420006	管理学基础前沿课程（基）	1	2	选修	论文	
	0532301	水产品可持续发展全球展望（一）	1	1	选修	报告	全英文授课
	0532303	水产品可持续发展全球展望（二）	1	2	选修	报告	全英文授课
	0522201	海洋经济前沿专题	2	2	选修	论文	
	0511904	学科研究进展课程（导师）	1	2	选修	考查/报告	各方向导师

课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	考核方式	备注
四、选修课 硕士≥2学分	0511905	专业导师研讨课	1	1	选修	报告	各方向导师
	0512202	中级渔业资源与环境经济学	2	2	选修	论文	
	0511908	国际经济合作	2	2	选修	论文	
	0511912	公司金融	2	2	选修	论文	
	0512101	国际金融	2	1	选修	论文	
	0512102	国际物流（双语）	1	2	选修	考试	
	0411407	中级应用统计分析	2	1	选修	论文	
	0410003	博弈论与信息经济学	2	2	选修	论文	
	0812306	国际海洋法	2	1	选修	论文	
	0441704	发展经济学	2	1	选修	论文	
	0410021	渔业文化与历史	1	2	选修	论文	
	0410039	农村金融专题	1	1	选修	论文	
	0411405	区域经济学专题	1	2	选修	论文	
	0411406	人力资源开发与管理	1	2	选修	论文	
	0411412	市场调研方法与应用	1	1	选修	考查/报告	
	0411414	公司战略与资本运营	1	2	选修	论文	
	0411415	供应链管理与建模	1	2	选修	考查	
	0411416	经济与管理分析软件应用	1	1	选修	论文	
	0411417	组织行为学	1	2	选修	评论报告	
	0411418	公共经济学	2	1	选修	论文	
	0411419	城镇发展战略与区域开发专题	1	1	选修	论文	
	0511902	财务报表分析	1	1	选修	考查/报告	
	0511903	农产品电子商务	1	2	选修	论文	
	0511915	农村社会学专题	1	2	选修	论文	
	0511922	应用经济学研究方法论	1	1	选修	论文	
	0512002	农业政策学	2	1	选修	论文	
	0512201	数据模型与决策	1	1	选修	论文	
	0010002	现代科技信息的电子检索	1	1	选修	论文	
	0810005	第二外语（日语）	2	2	选修	报告	
	0532302	金融市场前沿专题	1	2	选修	论文	



课程类别	课程编号	课程中文名称	学分	开课学期	是否必修	考核方式	备注
五、补修课程 (任选2门)	随本科生	微观经济学	3	随本科生	选修	考试	
	随本科生	宏观经济学	3	随本科生	选修	考试	
	随本科生	计量经济学	3	随本科生	选修	考试	
	随本科生	应用统计学	3	随本科生	选修	考试	

## 七、培养环节和学分基本要求（研究生院统一确定内容）

### 1. 个人培养计划

研究生入学三个月内，导师（组）按照培养方案的要求，根据因材施教的原则，指导研究生制订个人培养计划，对所学课程、必修环节、内容要求、学位论文计划等做出具体规定，经学院同意后，报研究生院备案。

### 2. 文献综述

在学位论文开题之前，研究生应在导师指导下，结合学位论文的选题和研究方向，查阅相关领域的国内外研究进展，撰写文献综述，并进行公开报告。文献综述撰写的具体要求详见《上海海洋大学关于研究生文献综述管理实施办法》。

### 3. 开题报告

开题报告一般在第三学期进行。硕士生在导师指导下，对拟选的课题进行全面的科学论证，确定研究内容和范围，设计和制定实施方案、技术路线，挖掘创新点，撰写《硕士研究生毕业论文工作计划》，并进行公开报告，由专家评议小组进行考核，具体考核要求详见《上海海洋大学研究生学位论文开题报告实施细则》。

### 4. 中期考核

研究生入学后第四学期，依据研究生培养方案及其个人培养计划，对研究生在政治思想品德、课程学习、科研实践能力、学位论文进展情况、身心状况等方面进行考核。具体考核要求详见《上海海洋大学研究生中期考核实施办法》。

### 5. 学术活动

学术活动须贯穿于学术学位研究生培养全过程，主要形式有参加学术报告（讲座）、学术研讨会和作专题报告等，具体要求详见《上海海洋大学关于研究生参加学术活动的规定》。

### 6. 学位外语

学术学位研究生在读期间须通过硕士生学位外语课程考试方可授予学位，学位外语免考要

求详见《上海海洋大学关于研究生学位外语课程考试免试的规定》

## 7. 论文撰写及答辩

所有研究生必须在导师指导下完成一篇达到学位要求的学位论文。硕士学位论文要反映硕士研究生在本学科领域研究中达到的学术水平，表明本人较好地掌握了本学科的基础理论、专门知识和基本技能，具有从事本学科或相关学科科学研究或独立担负门技术工作的能力。硕士研究生学位论文的基本要求包括：

- ①应在导师（组）指导下，独立完成学位论文。
- ②对论文所有相关的内容要以严谨的科学态度进行分析研究。
- ③学位论文的研究目的明确、实验设计或调查方法合理、数据资料真实、分析方法正确、结论可靠。
- ④学位论文逻辑清晰、文笔流畅，撰写符合《上海海洋大学研究生学位论文写作规范》。
- ⑤论文应具有一定的创新性、应用价值或学术参考价值。
- ⑥学位论文须经过专家评阅和公开的答辩，关于申请硕士学位论文答辩程序及办法按照《上海海洋大学硕士、博士学位授予工作细则》有关规定进行，并接受上级主管部门博士/硕士学位论文抽检（授学位后抽检）。

## 八.学位授予

研究生申请学位的学术成果要求详见《上海海洋大学硕士、博士学位授予工作细则》。学院（学科）应结合实际，在不低于细则要求的基础上，制定本学院（学科）研究生申请学位学术成果要求，经学位评定分委员会审定后报校学位评定委员会备案。

# **Master Program in Machinery for International Students**

**(Discipline Code:085500)**

## **1. Introduction ( 专业介绍 )**

The master's degree of machinery was developed on the basis of the specialty of fishery machinery established in 1958. The Master's Program is supported by Fishery Energy Conservation Research Institute, Marine Engineering Research Institute, and Shanghai Electric Lingang Heavy Equipment Manufacturing Base, SAIC Motor Corporation, etc. and is oriented to marine engineering and equipment, aquaculture engineering, food processing machinery, marine renewable energy, modern logistics, automotive engineering, and other engineering fields.

## **2. Educational Objectives ( 培养目标 )**

The master in Machinery aims to foster interdisciplinary high-level professionals with an innovative and entrepreneurial spirit, good comprehensive quality, and global-minded international perspective for the society. Meantime, with broad and solid engineering basic knowledge, machinery expertise, and background of marine-related knowledge, they will be able to engage in mechanical related technology development, scientific research and application, and producing organization management, etc.

## **3.Educational Method ( 培养方式 )**

The credit system management is implemented during the training process of postgraduates. In the training process, the educational method including scours study, practical teaching, and degree thesis.

## **4. Duration ( 学习年限 )**

3 years, and no more than 5 years for the maximum length of schooling.

## **5. Educational Procedures ( 培养环节 )**

### **( 1 ) Develop Educational Program ( 制定培养计划 )**

The tutor responsibility system is implemented during the training process of postgraduates. The tutor should develop a training plan for each postgraduate student based on the requirements of the training program in accordance with their ability. The tutor should fully care about the growth of the postgraduate students and pay attention to both course study and scientific research in the process of training. The systematic postgraduate study must be conducted in the school and the scientific research dissertation work is generally carried out in the school; the applied research dissertation should be carried out in the school or in the student's proposed employment company according to the actual situation, but it is subject to consultation by the school, tutor, student, and the factory and the company before proceeding.

## ( 2 ) Literature Review ( 文献综述 )

The postgraduate student should write a literature review and make a public report based on the direction of the research and combined with the selection work of the dissertation under the guidance of the supervisor.

## ( 3 ) Thesis Proposal ( 开题报告 )

The opening report is an important part of the postgraduate graduate thesis work. It refers to the special written report for expounding, reviewing and determining the thesis title. It is a forward-looking plan and basis for the postgraduate students to implement the thesis research, and it is to supervise and guarantee the quality of the thesis. The content of the opening report generally includes: the title, the basis of the argument (the purpose and significance of the topic of the thesis, the research status in domestic and foreign), the research plan (the research objectives, content, methods, process, the key issues to be solved, and the innovation points), condition analysis (instrument equipment, cooperation units and division of labor, and staffing). The postgraduate's thesis is generally held in the third semester. The opening report evaluation team composed of 3-5 experts comprehensively reviewed the opening report of the master's thesis, and if the evaluation is unqualified, the student must reopen the question within three months.

## ( 4 ) Medium-term Examination ( 中期考核 )

To ensure that the postgraduate students complete their studies on time and do well, establish a postgraduate's degree study and mid-term assessment system. The mid-term assessment includes: the study of postgraduate courses, the performance of scientific research, the situation of the writing and publication of academic papers, the progress of the research work of the dissertation, the staged results obtained, the work plan and research content of the next step, and the abstracts and thesis of the dissertation, thesis framework, etc. The mid-term assessment of master students is generally completed at the end of the fourth semester.

## ( 5 ) Practical Education ( 实践教学 )

Graduate training colleges or supervisors can choose practical projects based on the training objectives and requirements of the relevant professional degree categories (professional fields) and the actual situation of graduate students, which include teaching practice, production practice, scientific research practice, engineering practice, product design, process research, artistic creation, practical feasibility research and activity organization (including participating in the "National Graduate Innovation Series" theme events and other national events at the same level), etc.

## ( 6 ) Academic Dissertation ( 学位论文 )

The dissertation should be completed independently by the postgraduate student under the guidance

of the supervisor. Each process of the dissertation work (opening report, mid-term inspection, paper submission and revision, thesis defense and revision, etc.) should be implemented on the basis of the relevant regulations of the university. From the date of submission of the qualified opening report to the defense of the thesis, the time for the dissertation should not be less than one year.

Postgraduate students must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits. The postgraduate's thesis is generally more than 30,000 words, and the literature review cited no less than 60 theses. Students who taught in Chinese must finish the dissertation in Chinese and students who taught in English will write the dissertation abstract in Chinese.

#### ( 7 ) HSK Requirements ( HSK要求 )

Students who taught in English at least pass HSK-3 before graduation, and students who taught in Chinese at least pass HSK-5 and finish the dissertation in Chinese.

### 6. General Requirements ( 总体要求 )

Students are taught in English. There are five modules in the curriculum.

Requirements		Degree Courses		Basic Frontier Courses	Elective Courses	Practice
		Public	Major			
The least credits	32	10	8	4	4	6

### 7. Curriculum

#### Public Degree Courses (10 credits)

Course Number	Course Name	Credit	Class Hour	Semester
1142201	Comprehensive Chinese A	2	32	1
1142202	Comprehensive Chinese B	2	32	2
1142204	China Panorama A	2	32	1
1142203	China Culture	2	32	1
0810018	Practical Academic English	2	32	2

#### Major Degree Courses (8 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0641701	Principles of Automatic Control	2	32	1
0641703	Micro-nano Fabrication Technologies	2	32	2
0641901	Heat Transfer	1	16	1
0642302	Ocean Engineering Equipment	2	32	1
0641903	Design and Practice of Mechanical System	1	16	1

### Basic Frontier Courses (4 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0641906	The Frontiers of Machinery I	1	16	1
0641907	The Frontiers of Machinery II	1	16	1
0641908	The Frontiers of Machinery III	1	16	2
0641909	The Frontiers of Machinery IV	1	16	2

### Elective Courses (4 credits)

Course Number	Course Name	Credit	Class Hour	Semester
0642301	Control Technology of Ship Information System	2	32	1
0641706	Plate and Shell Theory of Offshore Structures	1	16	1
0641904	Advanced Manufacturing Technology	1	16	1
0641902	Coating Technology	1	16	2
0641707	Introduction of New Energy	1	16	2
0641704	Intelligent Control	1	16	2

## 8. Basic requirement for Compulsory Procedures

### ( 1 ) Educational Method ( 培养方式 )

Graduation requirements for students majoring in Machinery must meet the following conditions at the same time:

a) Successful completion of a minimum of 32 credits during the study period, including 18 credits of degree courses, 4 credits of basic frontier courses, 4 credits of elective courses and 6 credits of practice courses.

b) Through the HSK-3 and degree course examination, opening report, mid-term assessments, and dissertations, etc.

### ( 2 ) Develop Educational Program ( 制定培养计划 )

The systematic postgraduate study must be conducted in the school and the scientific research dissertation work is generally carried out in the school; the applied research dissertation should be carried out in the school or in the student's proposed employment company according to the actual situation, but it is subject to consultation by the school, tutor, student, and the factory and the company before proceeding.

### ( 3 ) Literature Review ( 文献综述 )

The literature review should include title, abstract, keyword, introduction, the basic research status of related field at home and abroad, conclusion, and references. The report of the literature review is no less than 5,000 words and there are no less than 30 references. The literature review was graded according

to excellent, good, medium, pass and fail grades. 2 credits will be given if the literature review is qualified or above. The literature review is generally completed at the end of the second semester. The detailed requirements could be found in 《上海海洋大学关于研究生文献综述管理实施办法》.

#### ( 4 ) Thesis Proposal ( 开题报告 )

The content of the opening report generally includes: the title, the basis of the argument (the purpose and significance of the topic of the thesis, the research status in domestic and foreign), the research plan (the research objectives, content, methods, process, the key issues to be solved, and the innovation points), condition analysis (instrument equipment, cooperation units and division of labor, and staffing). The postgraduate's thesis is generally held in the third semester. The student must reopen the question within three months if the evaluation is unqualified.

#### ( 5 ) Medium-term Examination ( 中期考核 )

The mid-term assessment includes: the study of postgraduate courses, the performance of scientific research, the situation of the writing and publication of academic papers, the progress of the research work of the dissertation, the staged results obtained, the work plan and research content of the next step, and the abstracts and thesis of the dissertation, thesis framework, etc. The mid-term assessment of master students is generally completed at the end of the fourth semester.

#### ( 6 ) Practical Education ( 实践教学 )

Graduate training colleges or supervisors can choose practical projects based on the training objectives and requirements of the relevant professional degree categories (professional fields) and the actual situation of graduate students, which include teaching practice, production practice, scientific research practice, engineering practice, product design, process research, artistic creation, practical feasibility research and activity organization (including participating in the "National Graduate Innovation Series" theme events and other national events at the same level), etc.

#### ( 7 ) Academic Dissertation ( 学位论文 )

Postgraduate students must complete all the course learning and training sessions specified in this training program and obtain the minimum required total credits. The postgraduate's thesis is generally more than 30,000 words, and the literature review cited no less than 60 theses. Students who taught in Chinese must finish the dissertation in Chinese and students who taught in English will write the dissertation abstract in Chinese. The review and defense work of postgraduate thesis should be in accordance with 《上海海洋大学外国留学生硕士、博士学位授予工作细则（试行）》.

#### (8) HSK Requirements ( HSK要求 )

Students who taught in English must pass HSK-3 before graduation, and students who taught in Chinese must pass HSK-5 and finish the dissertation in Chinese.

# **PhD Program of Marine Science (Marine Engineering and Information) for International Students**

**(Discipline Code: 070700)**

## **1. Applicable Discipline**

Discipline: Marine Science (Marine Engineering and Information) Discipline Code: 070700

## **2. Discipline Introduction**

Doctoral students cultivated in Marine Science (Marine Engineering and Information Direction) should have a solid foundation in mathematics and physics, possess basic knowledge of marine science, master basic skills and information processing technology of modern ocean exploration technology such as ocean engineering and ocean information, aiming to cultivate the ability to be competent in ocean science research, ocean exploration technology research and development, ocean environmental monitoring, ocean resource protection, and ocean information services .

## **3. Program Objective**

The degree recipients should be able to master the solid and broad theory and knowledge of the discipline systematically, deeply investigating the state-of-the-art, developing trends and international research front of the discipline; be able to undertake research work independently and obtain creative achievements in academic or practical research work, can read international materials proficiently, and have certain writing ability and international academic communication ability; being qualified for teaching, researching, engineering technical or scientific management works in the college and university; have the talents to be top end in Marine Engineering and Information.

## **4. Cultivation Mode and Study Duration**

Full-time study with mentoring training type is adopted in this program, with the standard schooling being 4 years. For the doctoral students who would fail to complete their studies on time maximum 2 school years could be extended to.

## **5. Main Research Field**

- 1) Ocean exploration and environmental monitoring technology
- 2) Theory and Method of Design and Manufacture for Marine Engineering Structures
- 3) Mechanics of Naval Architecture and Ocean Engineering
- 4) Deep-sea Equipment and Key Technology
- 5) Technology of Intelligent Unmanned Marine Vehicles
- 6) Design and Application Technology of New Materials
- 7) Marine renewable energy development and utilization technology
- 8) Marine Information Technology
- 9) Ocean Internet of Things Technology



## 6. Credit and Doctoral Degree Acquisition Requirement

1) Students should achieve at least 12 credits of course learning, as well as 2 credits of literature review and academic activities during the semester, totaling 16 credits.

2) Students can only graduate after passing the prescribed training stages such as thesis proposal report, mid-term assessment, and thesis defense. Those who meet the graduation requirements and have obtained scientific research achievements to confer a doctoral degree can apply for a degree. With the approval of the university's degree evaluation committee, they can obtain a doctoral degree.

3) Students should pass the doctoral foreign language degree course exam during the semester.

## 7. Curriculum

Category	Code	Course	Credit	Semester	Course Type	Evaluation
General Compulsory courses $\geq 6$ credits	1142204	China Panorama A	2	1	Compulsory	Examination
	1142203	China Culture	2	1	Compulsory	Examination
	2330002	Practical Academic English	2	1	Compulsory	Examination
Professional Compulsory Courses $\geq 2$ credits	0612305	Marine Renewable Energy Power Generation Technology	1	1	Compulsory	Research Report
	0632201	Reliability Theory	1	2	Compulsory	Research Report
Frontier courses $\geq 2$ credits	0631904	Progress in Disciplinary Research	1	2	Compulsory	Research Report
	0611903	Research Seminar	1	2	Compulsory	Research Report
Optional Courses $\geq 2$ credits	0622105	Frontier Course in Ocean Engineering and Information Fundamentals (Bilingual)	1	1	Optional	Research Report
	0611904/0612129	Paper Writing and Academic Norms (College of Engineering Science and Technology)	1	1/2	Optional	Research Report
	0612209	Analysis and Design of Ship and Ocean Engineering Structures	2	1	Optional	Research Report
Supplementary Courses	0611907	Computational Fluid Dynamics	1	1		Research Report
	0611909	Ocean Internet of Things Engineering	1	1		Research Report
Remark	Supplementary courses: Doctoral students who have obtained cross disciplinary or equivalent academic qualifications should, under the guidance of their supervisor, take 2-3 master's major core courses in their respective discipline. Those who do not have supplementary courses or fail the supplementary course exam are not allowed to enter the thesis defense. The credits for supplementary courses cannot replace the prescribed credits mentioned above.					

## 8. Compulsory Cultivation stages and Requirements

No.	Cultivation stage	Assessment Requirement
1	<b>Personal Development Plan</b>	A supervisor responsibility system is adopted in the cultivation of doctoral students adopts, requiring students to pay equal attention to both learning and scientific research. Within the first three months, the supervisor should develop a cultivation plan for each doctoral student and make specific regulations on compulsory parts, contents requirement, degree thesis plan, and other aspects of the required courses learned. After obtaining approval from the college, the supervisor should report to the Graduate School for record keeping. During the execution of the training plan, if graduate students or their supervisors request to modify the cultivation plan, they must apply to the dean in charge, and after approval, report to the graduate school for filing.
2	<b>Literature Review</b>	Before starting their thesis research, doctoral students should, under the guidance of their supervisor, read relevant domestic and foreign literature in the related field, write a literature review, and make a public report based on their research direction and the topic selection work of the thesis. Please refer to the "Implementation Measures for Graduate Literature Review Management of Shanghai Ocean University" for specific requirements such as the quantity of literature read and the number of words written for literature review. Literature reviews are rated at five levels: excellent, good, medium, pass, and fail. Qualified literature review and above will be counted as 2 credits.
3	<b>Thesis Proposal</b>	The doctoral thesis proposal is usually given in the third semester. The topic selection of doctoral thesis should emphasize the close connection with scientific and technological progress, economic construction and social development, which has important theoretical and practical significance, and should reflect the frontier and progressiveness nature of the discipline. Doctoral students should conduct comprehensive scientific argumentation on the proposed topic under the guidance of their supervisor, determine the research content and scope, design and develop implementation plans and technical routes, highlight innovative points, and have a good research foundation. They should write a standardized "Degree Thesis Work Plan" and go through the "review evaluation" process. Only those who pass the review can make a public report, which will be evaluated by an expert evaluation group. Specifically, it shall be implemented in accordance with the "Regulations on the review Evaluation of doctoral dissertations of Shanghai Ocean University" and the "Implementation Rules for the review Report of Graduate Dissertations of Shanghai Ocean University".
4	<b>Interim Sssessment and Interim Report</b>	To ensure that students complete their studies on time and with high quality, a mid-term assessment system for doctoral studies and work is established. The mid-term assessment is usually completed at the end of the third semester. The assessment content includes: course learning status, scientific research performance, academic paper writing and publication status, progress of degree paper research work, phased achievements achieved, next step work plan and research content, as well as abstract and paper framework directory of the degree paper. After entering the mid-term stage of the thesis, doctoral students should report the achievements and existing problems of their research work to the guidance group or the expert group of the college. The mid-term report focuses on checking the progress of the thesis and implements an assessment system. The assessment results are graded at five levels: excellent, good, medium, pass, and fail.
5	<b>Academic Activities</b>	Academic activities include giving academic reports, attending professional academic conferences at home and abroad, expert academic lectures, and academic seminar activities. Doctoral students should participate in at least 3 graduate academic seminars during the semester, as well as 5 expert academic lectures or professional academic conferences at home and abroad. Graduate students participate in academic activities through an assessment system. Please refer to the "Regulations of Shanghai Ocean University on Graduate Students Participating in Academic Activities" for specific requirements. Qualified academic activity assessment will result in 2 credits.

No.	Cultivation stage	Assessment Requirement
6	<b>Thesis Writing and Defense</b>	<p>The basic requirements for a doctoral thesis are: to independently complete it under the guidance of a supervisor (group); The paper should conduct in-depth and systematic analysis and research on a certain field and related content with a rigorous scientific attitude; The research purpose of the paper is clear, the experimental design or investigation method is scientific and reasonable, the information is detailed, the data is true, the analysis method is correct, the argument is rigorous, and the conclusion is reliable; The writing requirements for the thesis: clear logic, fluent writing, and compliance with standards, please refer to the "Writing Standards for Graduate Dissertations of Shanghai Ocean University"; The research content should be cutting-edge and exploratory in the disciplinary field, and innovative.</p> <p>Graduate students must complete all the course learning and cultivation stages specified in this plan, and obtain the minimum total credits required before applying to participate in the thesis defense. The doctoral thesis must undergo expert review and public defense, and doctoral students must submit their thesis and conduct a pre-defense three months before the final defense. The review and defense of graduate thesis shall be carried out in accordance with the "Detailed Rules for the Granting of Master's and Doctoral Degrees at Shanghai Ocean University".</p>
7	<b>Degree Award</b>	<p>The research results requirements for graduate students when applying for a degree can be found in the "Detailed Rules for the Granting of Master's and Doctoral Degrees at Shanghai Ocean University". The college shall, based on actual conditions and not less than the requirements of the detailed rules, formulate requirements for the research results of its graduate degree, which shall be implemented after being approved by the university's degree evaluation committee.</p>