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College of Fisheries and Life Science

1. Doctoral 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. Students 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 and independent; have potentials to make break-through achievements in certain fields of science and technology.

III. Research Directions（研究方向）

This major has four research fields: aquatic germplasm resources and genetic breeding, aquatic animal nutrition and feed science, aquatic animal medicine, and aquaculture technology and engineering.

1. Aquatic Germplasm Resources and Genetic Breeding: This field focuses on studying the genetic laws and regulatory mechanisms of important economic traits in aquatic animals and plants, such as sex, body shape, body color, growth rate, meat quality, fecundity, and stress resistance. Methods such as genomics, transcriptomics, and proteomics are used to analyze the molecular genetic basis of these economic traits. The genetic structure and economic traits of aquatic animals and plants are modified through artificial directional hybridization, selective breeding, chromosome manipulation, sex control, nuclear transfer, genome mutagenesis, molecular marker-assisted breeding, and gene editing. The goal is to cultivate new varieties of aquatic animals and plants suitable for large-scale aquaculture and ornamental purposes. Research also includes large-scale propagation techniques of aquatic animal and plant seedlings to provide a large number of healthy seedlings for aquaculture.
2. Aquatic Animal Nutrition and Feed: This field mainly studies the laws and regulatory mechanisms of energy and nutrient digestion, absorption, metabolism, and transport in aquatic animals, as well as their nutrient requirements. It also evaluates the nutritional value of feed and feed raw materials for aquaculture animals and develops methods for their assessment. Other areas of focus include the development and utilization of feed raw materials and additives, feed formulation and processing technology, cultivation and nutritional regulation technology of biological feed, and the relationships between nutrition and environment, reproduction, and immunity. These theories and technologies help us understand the nutritional and physiological mechanisms of aquaculture animals, providing a theoretical basis and technical support for developing high-efficiency, low-cost aquaculture feeds, thereby promoting the sustainable development of the aquaculture industry.
3. Aquatic Animal Medicine: This field primarily studies the occurrence, etiology, and pathology

of diseases in aquatic animals and plants, including fish, shrimp, crabs, shellfish, algae, amphibians, and reptiles. Research includes the immune defense mechanisms of hosts in response to pathogens, the genetic basis of disease resistance, the interactions between hosts and pathogens, and the origin and evolution of the immune system. Aquatic animal medicine combines basic theory with industrial technology and plays an important role in the development of the aquaculture industry.

4. Aquaculture Technology and Engineering: This field focuses on the reproductive biology of aquaculture animals, seedling breeding technology, aquaculture management technology, aquaculture ecology, aquaculture models, and water environment regulation. Research aims to establish seedling breeding technology, ecological breeding models, and water environment control technology to ensure the green, efficient, and sustainable development of aquaculture.

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. General Requirements (总体要求)

During the four academic years (8 semesters), at least 22 credits are demanded to acquire the degree, which includes at least 18 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	22	12	4	2	2	2

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Public Degree Courses (12Credits)	0852401	Comprehensive Chinese A	4	64	1
	0852402	Comprehensive Chinese B	4	64	2
	1142204	China Panorama A	2	32	1
	2330002	Practical Academic English	2	32	1
Major Degree Courses (4 Credits)	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)	0111903	Team Seminars	1	16	2
	0141611	Aquatic Ecology	2	32	1
	0111803	Molecular Immunology	2	32	1

VII. Basic Requirements for Training Procedures (培养环节)

1. Personal Training Plan (制定培养计划)

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 college.

2. Literature Review (文献综述)

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 (开题报告)

The thesis proposal 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, and 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 "proposal 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 proceed to the dissertation stage. Those who fail to pass should revise their proposal according to the opinions of the review group and resubmit it. If they fail again, their training will be terminated, and they will be considered withdrawn.

4. Mid-term Assessment and Mid-term Report(中期考核及中期汇报)

In the fourth semester after enrollment, according to the postgraduate training plan and their personal training plan, graduate students will be evaluated in terms of the understanding and knowledge of China, 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 advisory committee or the expert group of the college, reporting the stage results and existing problems of scientific research work. They should fill in the *"Shanghai Ocean University Doctoral Interim Report Form"* as the University implements the assessment system. The assessment results are graded on a five-level scale: excellent, good, medium, pass and fail.

5. Academic Activities(学术活动)

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. HSK Requirements（HSK要求）

Students who are taught in English must pass HSK3 before graduation.

Students who are taught in Chinese must pass HSK5 and finish the dissertation in Chinese.

7. Thesis Writing and Defense(学位论文与答辩)

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

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

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. 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(学位授予)

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.

学位点负责人：吴旭干

2. 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. Research Directions（研究方向）

This major has four research fields: aquatic germplasm resources and genetic breeding, aquatic animal nutrition and feed science, aquatic animal medicine, and aquaculture technology and engineering.

1. Aquatic Germplasm Resources and Genetic Breeding: This direction primarily studies the genetic laws and regulatory mechanisms of important economic traits in aquatic animals and plants, such as sex, body shape, body color, growth rate, meat quality, fecundity, stress resistance, etc. Methods such as genomics, transcriptomics, and proteomics are used to analyze the molecular genetic basis of these economic traits. The genetic structure and economic traits of aquatic animals and plants are modified through artificial directional hybridization, selective breeding, chromosome manipulation, sex control, nuclear transfer, genome mutagenesis, molecular marker-assisted breeding, and gene editing. The goal is to cultivate new varieties of aquatic animals and plants suitable for large-scale aquaculture and ornamental purposes. Research also includes large-scale propagation techniques of aquatic animal and plant seedlings to provide a large number of healthy seedlings for aquaculture.
2. Aquatic Animal Nutrition and Feed Science: This direction mainly studies the laws and regulatory mechanisms of energy and nutrient digestion, absorption, metabolism, and transport in aquatic animals, as well as their nutrient requirements. It also evaluates the nutritional value of feed and feed raw materials for aquaculture animals and develops methods for their assessment. Other areas of focus include the development and utilization of feed raw materials and additives, feed formulation and processing technology, cultivation and nutritional regulation technology of biological feed, and the relationships between nutrition and environment, reproduction, and immunity. These theories and technologies help us understand the nutritional and physiological mechanisms of aquaculture animals, providing a theoretical basis and technical support for developing high-efficiency, low-cost aquaculture feeds, thereby promoting the sustainable development of the aquaculture industry.
3. Aquatic Animal Medicine: This direction primarily studies the occurrence, etiology, and pathology of diseases in aquatic animals and plants, including fish, shrimp, crabs, shellfish, algae, amphibians, and reptiles. Research includes the immune defense mechanisms of hosts in

response to pathogens, the genetic basis of disease resistance, the interactions between hosts and pathogens, and the origin and evolution of the immune system. Aquatic animal medicine combines basic theory with industrial technology and plays an important role in the development of the aquaculture industry.

4. Aquaculture Technology and Engineering: This direction mainly studies the reproductive biology of aquaculture animals, seedling breeding technology, aquaculture management technology, aquaculture ecology, aquaculture models, and water environment regulation. Research aims to establish seedling breeding technology, ecological breeding models, and water environment control technology to ensure the green, efficient, and sustainable development of aquaculture.

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. General Requirements (总体要求)

During the three academic years (6 semesters), at least 36 credits are requested to acquire the degree, including at least 32credits 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	36	18	10	4	2	2

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Public Degree Courses (18 credits)	0842401	Comprehensive Chinese A	6	96	1
	0842402	Comprehensive Chinese B	6	96	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)	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)	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

VII. Basic Requirements for Training Procedures (培养环节)

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 proposal 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. HSK Requirements (HSK要求)

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

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

7. Paper Writing and Defense（论文撰写及答辩）

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

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

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 they 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.

③The 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.

④The thesis has clear logic and fluent writing, and the writing meets *the "Writing Standards for Graduate Dissertations at Shanghai Ocean University".*

⑤The paper should have certain innovation, application value, or academic reference value.

⑥The 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 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.

学位点负责人：吴旭干

3. 生物学硕士研究生（国际学生）培养方案

（专业代码：071000）

一、学科简介

生物学是研究生物的结构、功能、发生、发展、以及与周围环境关系等的一门自然科学，已形成多学科交叉、多技术应用的综合研究体系。总体发展趋势是微观与宏观结合、部分与整体结合、结构与功能结合, 从分子、细胞、组织、器官、系统、个体、种群、群落及至生态系统等不同层次研究生命的现象和活动规律。当今的生命科学作为自然科学中最为活跃的领域，正处于带有整体性的重大突破前夜。我校的生物学紧紧围绕海洋与淡水生物学问题开展研究，在学术思想、研究内容、技术路线、实验方法和研究成果上具有鲜明的海洋与水产生命特色。

二、培养目标

以服务国家对外开放战略为指引，落实教育国际化发展要求，立足学校特色，面向全球治理与海洋命运共同体建设需要，培养德、智、体全面发展的专门人才。

1. 热爱祖国，遵纪守法，品行端正，诚实守信，具有国际视野和较强的事业心，愿意投身于中外交流与合作事业。

2. 具有“团结协作、勤奋敬业、严谨求实、开拓创新”的科研素养。掌握生物学领域的坚实理论基础、系统专门知识和熟练的实验操作技能，形成较宽广的学术思想和知识结构，能熟练运用现代信息技术和汉语，具备参与国际学术交流与合作的能力。能胜任生物学领域的教学、科研、生产及经营管理工作。

3. 具有健康的体魄、健全的人格和良好的心理素质。

三、研究方向

本专业下设水生生物学、生理学、发育生物学、生物化学与分子生物学等研究方向。

1. 水生生物学方向：主要研究水生生物、鱼类的分类、演化和对环境的适应性进化，以及基于水生生物的水体健康评价和水生态修复。

2. 生理学研究方向：主要研究水生生物的生理特征、适应机制和生理过程，包括呼吸生理、循环生理、渗透调节和盐平衡、生殖生理、行为生理及水生生物对环境变化的适应等。

3. 发育生物学方向：主要开展水生动物发育生物学的研究，利用遗传学、多组学联合等技术揭示鱼类、贝类等水生动物发育过程及调控机制，从发育和进化的角度阐释水生动物多样性产生的机制。

4. 生物化学与分子生物学方向：主要开展基因表达与调控；环境适应与表观遗传学调控机制；糖、脂代谢及调控机制研究。

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。硕士研究生在校最长学习年限（含休学和保留学籍）不超过5年。

五、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、通过汉语水平等级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	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≥8学分	0111902	论文写作与学术规范（生命）	2	1	选修	
	0122611	水产与生命学院生物学前沿进展	2	1	必修	由各团队老师合上
	0122612	生物学分析理论和方法	2	1	必修	由各团队老师合上
	0112102	细胞与发育生物学	2	1	选修	
	0112112	生态系统与保护生物学	2	1	选修	
	0112113	核酸生物学	2	1	选修	
	0112108	生物多样性与进化	2	2	选修	
	0141611	Aquatic Ecology	2	1	选修	
	0141703	Bioinformatics	2	1	选修	
三、前沿课程 硕士≥4学分	0121901	学科研究进展课程（导师）	1	2	选修	
	0112107	酶与蛋白质	2	1	选修	
	0122105	宏观生物学基础前沿课	2	1	选修	
	0122106	微观生物学基础前沿课	2	1	选修	
	0122115	交叉学科基础前沿课	1	1	选修	
	0122301	合成生物学基础前沿课	1	1	选修	
	0122601	长江珍稀濒危鱼类保护与资源修复技术	1	1	选修	联培单位开课
	0122602	南海渔业资源保护与生态养殖	1	1	选修	联培单位开课
	0122605	水产种质创新与未来渔业	1	1	选修	联培单位开课
	0122609	基于生物多样性保护的韧性水产养殖前沿	1	1	选修	联培单位开课
	0122610	水产精准育种与种质创新前沿应用	1	1	选修	联培单位开课

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
四、选修课 硕士**≥4**学分	0111903	导师研讨课程	1	2	选修	
	0112101	实验设计与数据分析	2	1	选修	
	0111236	分子细胞生物学	2	1	选修	
	0112614	生命科学综合实验课程	4	1	选修	
	0111701	比较基因组学	2	1	选修	
	0111243	现代鱼类学	1	1	选修	
	0112139	水产动物分子免疫学	1	2	选修	
	0111241	环境激素	1	2	选修	
	0111242	现代显微技术	1	1	选修	
	0111244	仔稚鱼生态与资源学	1	2	选修	
	0111245	系统发育地理学	1	2	选修	
	0112132	水域生态修复	1	2	选修	
	0111802	鱼类解剖与组织学	1	2	选修	
	0111270	附着生物学	1	2	选修	
	0111801	原生生物学	1	1	选修	
	0111803	Molecular Immunology 分子免疫学	2	1	选修	
	0111278	表观遗传学	1	2	选修	
	0112001	淡水大型底栖动物生态学	2	1	选修	
	0010002	现代科技信息的电子检索	1	1	选修	
	0810005	第二外语（日语）	2	2	选修	

七、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》。文献综述一般在第二学期初进行。

3. 开题报告

开题报告一般在第二学期末进行。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《硕士研究生学位论文工作计划》，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或实践成果开题报告实施细则》。

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. HSK要求

以中文授课的学生须通过HSK5级，并用中文完成论文。

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）。

8. 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。

学位点负责人：李晨虹

College of Marine Living Resource Sciences and Management

1. Doctoral Program in Fishery Resources for International Students (Discipline Code: 090803)

I. Introduction (专业介绍)

Fishery 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, attempting to provide an integrated picture of fisheries. The bioeconomics and fisheries law are also included in FS.

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 Chinese to complete the study and research tasks of the discipline and major, and have the ability to use Chinese 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. Research Directions（研究方向）

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

1. Fishery Resources and Management (FRM):This area 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.

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

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. General Requirements (总体要求)

A minimum of 22 credits are required for graduation, including at least 18 credits for courses study (including 12credits 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 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	22	12	2	2	2	2	2

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Public Degree Courses (12 credits)	0852401	Comprehensive Chinese A	4	64	1
	0852402	Comprehensive Chinese B	4	64	2
	1142204	China Panorama A	2	32	1
	2330002	Practical Academic English	2	32	1
Major Degree Courses (2 credits)	0220301	Fishery Biology	2	32	1
	0220310	Fishery Oceanography	2	32	1
	0242401	Fishery Stock Assessment	2	32	2
Basic Frontier Courses (2 credits)	0242404	Frontier in Marine Fishery Resources	1.5	24	1
	0242405	Frontier in Fishing Gears and Fishing Technology	1.5	24	1
	0222501	Frontier in Marine Ecosystem and Fishery Basic	1	16	1/2
	0222502	Frontier in Ecology of Marine Biological Resources	1	16	1/2

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Elective Courses (2 credits)	0220302	Stable isotope Ecology	2	32	2
	0220309	International Fisheries Management	2	32	1

VII. Basic Requirements for Training 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 on a five-level scale: excellent, good, medium, pass and fail.

3. Thesis Proposal (开题报告)

The thesis proposal 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' thesis proposal is generally held in the third semester. The topic selection of the dissertation of the PhD candidate's thesis proposal 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 proposal and undergo *the "proposal 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 thesis proposal can proceed the dissertation stage; those who fail, should revise their proposal based on the opinions of the review team, and re-submit 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 (中期考核及中期汇报)

To ensure that the PhD candidates complete their studies on time and do well, the University has established a doctoral degree study and mid-term assessment system. The mid-term assessment includes an evaluation of the following contents: 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 candidate 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, or 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 while 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 are taught in English 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 are taught in English must pass HSK3 before graduation.

Students who are taught in Chinese must pass HSK5 and finish the dissertation in Chinese.

8. Degree Awarding(学位授予)

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.

学位点负责人：李纲

2. Master Program in Fishery Resources for International Students (Discipline Code: 090803)

I. Introduction (专业介绍)

Fishery 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.The study of fishery resources mainly focuses on the biology of fishery resources, the monitoring and investigation of fishery resources, the mechanism of fishery resources change, the mechanism of fishery formation and fisheries management, etc. It mainly provides theoretical basis and decision-making basis for sustainable exploitation, conservation and management of fishery resources.

II. 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 and management. 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 Chinese to complete the study and research tasks of the discipline and major, and have the ability to use Chinese 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. Research Directions（研究方向）

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

1. Fishery Biology and Ecology (FBE): This field explore the population structure, age growth, reproductive characteristics, feeding and migration routes of fishery resources through experimental methods, comprehensively analyzing their life history changes, infers 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 analyzes their ecological significance, so as to understand human exploitation of marine resources and current major marine environmental issues.

2. Fishery Resources and Management (FRM): This field is to study fishery biology, fishery population dynamics and fishery resource management regime, tools and measures, and to further provide the theoretical basis and decision references for sustainable exploitation and utilization, management and conservation of fishery resources, and fisheries monitoring, compliance, enforcement and surveillance.
3. Distant-water Fisheries Remote Sensing (DFRS):This field 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.

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). Early graduation is allowed, but extension can only be applied for once.

V. General Requirements (总体要求)

During the three academic years (6 semesters), at least 38 credits are demanded to acquire the degree, which includes at least 34 credits for Courses (including 18 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, 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	38	18	8	4	4	2	2

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Public Degree Courses (18 credits)	0842401	Comprehensive Chinese A	6	96	1
	0842402	Comprehensive Chinese B	6	96	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)	0220301	Fishery Biology	2	32	1
	0220310	Fishery Oceanography	2	32	1
	0242403	Tutor Guidance Section	2	32	1

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
	0242401	Fisheries Stock Assessement	2	32	2
Basic Frontier Courses（4 credits）	0242404	Frontier in Marine Fishery Resources	1.5	24	1
	0242405	Frontier in Fishing Gears and Fishing Technology	1.5	24	1
	0222501	Frontier in Marine Ecosystem and Fishery Basic	1	16	1/2
	0222502	Frontier in Ecology of Marine Biological Resources	1	16	1/2
Elective Courses（4 credits)	0220302	Stable Isotope Ecology	2	32	2
	0220309	International Fisheries Management	2	32	1
	0242402	Global Fisheries Government	1	16	2

VII. Basic Requirements for Training Procedures (培养环节)

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 proposal 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. HSK Requirements (HSK要求)

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

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

7. Paper Writing and Defense（论文撰写及答辩）

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

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

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 they 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 appropriate, and the conclusion is reliable.

④The thesis has clear logic and fluent writing, and the writing meets the standard of *the "Writing Standards for Graduate Dissertations at Shanghai Ocean University".*

⑤The paper should have certain innovation, application value, or academic reference value.

⑥The 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 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.

学位点负责人：李纲

3. 渔业资源硕士研究生（国际学生）培养方案

（专业代码：090803）

I. 专业介绍

渔业资源（Fishery Science, FS）是一门应用基础性学科。作为渔业资源的重要组成部分，海洋渔业涉及海洋学、生物学、统计学、力学、航海学、工程技术、管理学及信息技术等多个领域。渔业资源研究主要围绕渔业资源生物学、渔业资源监测与调查、渔业资源变动机制、渔况形成机理及渔业管理等方向展开，旨在为渔业资源的可持续开发、养护和管理提供理论依据和决策支撑。

II. 培养目标

本专业旨在培养具有海洋学背景、系统掌握渔业科学知识的全面发展型专业人才。掌握渔业科学与管理的基本方法和技能，能够在私营部门、学术研究机构及公共部门中胜任渔业、海洋学、生物学和生态学等相关领域的专业工作。熟悉中国历史、地理、社会、经济等国情及中国文化基础知识。培养能够熟练运用汉语完成本学科学习和研究任务的能力，具备使用汉语从事本专业相关工作的能力；汉语水平至少达到HSK五级。

培养国际学生的文化多样性意识、知识、态度和技能，使其能够接纳、认知并适应文化差异，在促进不同民族、社会和国家的相互尊重、理解与团结方面发挥重要作用；具备良好的学科国际视野，能够在多国实际环境中应用和发展本学科的知识、技能与方法，具有参与国际事务和国际竞争的能力。

III. 研究方向

结合上海海洋大学海洋渔业学科的办学特色，本学科设以下三个研究方向：渔业生物学与生态学、渔业资源与管理、远洋渔业遥感。

渔业生物学与生态学（FBE）：本方向通过实验方法探究渔业资源的种群结构、年龄与生长、繁殖特性、摄食习性和洄游路线，综合分析其生活史变化，推断渔业资源变动等重要特征；认识海洋生物多样性特征及不同海洋生物类群与其栖息环境之间的相互作用，并分析其生态学意义，进而理解人类对海洋资源的开发利用及当前主要海洋环境问题。

渔业资源与管理（FRM）：本方向研究渔业生物学、渔业种群动力学以及渔业资源管理体制、工具与措施，进一步为渔业资源的可持续开发利用、管理与养护，以及渔业监测、合规、执法与监管提供理论依据和决策参考。

远洋渔业遥感（DFRS）：本方向将现代遥感技术和地理信息系统（GIS）技术应用于渔业研究，提升对渔业资源种群动态机制的认识，探索渔场形成机理，发展渔情预报技术，最终为远洋渔业提供科技支撑。

IV. 学习年限

硕士研究生学制为3年，最长不超过5年（含休学）。允许提前毕业，但延期仅可申请一次。

V. 总体要求

在三个学年（6个学期）内，至少需修满30学分方可申请学位，其中课程学分不少于26学分（含公共学位课10学分、专业学位课8学分、基础前沿课4学分、选修课4学分），文献综述2学分，学术活动2学分。学生须通过论文开题、中期考核、汉语水平等级考试及论文答辩方可申请毕业。只有达到规定要求并取得足够科研成果（如发表论文或出版专著等）的学生，方具备申请硕士学位的资格。

要求		学位课		前沿课	选修课	文献综述	学术活动
		公共学位课	专业学位课				
最低学分要求	30	10	8	4	4	2	2

VI. 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	课时	开课学期
公共学位课 (10 学分)	1142204	中国概况 A	2	32	1
	1142205	中国概况 B	2	32	2
	1142206	实践汉语	2	32	1
	1142203	中国文化	2	32	1
	0810018	第一外语 A（实用学术英语）	2	32	2
专业学位课 (8学分）	0211912	鱼类行为学	2	32	1
	0211933	计算流体力学基础	2	32	1
	0211940	论文写作与学术规范（资源、捕捞）	2	32	1
	0232109	渔场学	2	32	1
	0310010	渔业资源种群动力学	2	32	1
	0310023	渔业地理信息系统	2	32	1
	0310043	渔具力学	2	32	1
	0311402	渔业海洋学	2	32	1
	0311415	高等生物海洋学	2	32	1
	0712102	渔业法规与管理	2	32	1
	0211920	国际海洋渔业法	2	32	2
	0232107	渔业统计学	2	32	2
	0310031	渔业行政监督执法	2	32	2
	0311409	设施渔业与工程	2	32	2
前沿课 (4学分）	0321402	海洋捕捞基础前沿2（基）	1	16	1/2
	0221905	设施渔业工程技术前沿	1	16	1/2
	0221904	渔业管理基础前沿	1	16	1/2
	0321401	海洋渔业资源基础前沿1（基）	1	16	1/2
	0222501	海洋生态系统与渔业基础前沿	1	16	1/2
	0722104	海洋法前沿	1	16	2
	0722105	渔业法规前沿	1	16	2
选修课 (4学分)	0211913	渔业声学	2	32	1
	0211915	现代渔船与渔业装备	2	32	1
	0211921	渔业大数据及机器学习	2	32	1
	0211922	海洋数据分析与挖掘	2	32	1
	0211924	海上安全技术与船员心理学	2	32	1

课程类别	课程编号	课程中文名称	学分	课时	开课学期
	0212205	海上科考调查实践	2	32	1/2
	0232601	海洋生物实验室安全知识	1	16	1
	0310005	渔具渔法选择性	2	32	1
	0211911	渔具测试	2	32	2
	0211914	鱼类仿生学	2	32	2
	0211916	工程力学	2	32	2
	0211919	海洋牧场原理	2	32	2
	0211925	渔业资源与气候变化	2	32	2
	0211926	鱼类硬组织信息分析	2	32	2
	0211927	现代海洋生物技术原理与应用	2	32	2
	0211928	生物气候学	2	32	2
	0212104	渔业资源评估模型与软件	2	32	2
	0212105	生态混合建模	2	32	2
	0310022	渔情预报技术	2	32	2
	0310024	渔业资源经济学	2	32	2
	0310029	海洋保护生物学	2	32	2
	0310032	环境法	2	32	2
	0311403	海洋渔业遥感	2	32	2
	0311404	学科经典文献导读	2	32	2
	0311405	R语言在渔业中的应用	2	32	2
	0311407	渔具数值模拟	1	16	2
	0311408	渔业调查与采样设计	2	32	2

VII. 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，对研究生在中国的认识和理解方面、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. HSK要求

以中文授课的学生须通过HSK5级，并用中文完成论文。

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）。

8. 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。

学位点负责人：周成

College of Oceanography and Ecological Science

1. Doctoral 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 techno- logical 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. Research Directions（研究方向）

The Marine Science program offers secondary disciplines such as physical oceanography, marine biology, marine geology, marine chemistry, and marine engineering and information.

1. Physical Oceanography: This direction studies the movement and variation of seawater, the distribution and variation of seawater state parameters, and the influence of the ocean on global climate. Secondary disciplines include marine circulation and polar processes, marine ecosystem dynamics, shallow sea dynamics, marine hazards, and environmental safety.
2. Marine Chemistry: This direction focuses on the chemical composition and content of various parts of the ocean, pollutants, chemical processes and their distribution and migration patterns in the ocean, as well as the sustainable development of the ocean. Secondary disciplines include environmental processes and effects of pollutants, marine environmental geochemistry, marine environmental protection, and ecological restoration.
3. Marine Biology: This direction studies the biodiversity of organisms in water bodies and benthic environments, interactions between organisms and between organisms and the marine environment, marine primary productivity, biogeochemical cycles, and the effects of biological changes in the course of Earth's evolution and future climate change on marine organisms. Secondary disciplines include marine biology and biological oceanography, marine invasion biology, marine microbiology, algal biology, and marine ecology.
4. Marine Geology: This direction mainly studies the structure, geological characteristics, genesis, and evolution of continental margins and ocean basins. Key research areas include deep-sea and abyssal carbon cycles, seafloor cold seep activity and geochemical processes, gas hydrate

accumulation, and understanding past global changes through the reconstruction of short-term and long-term shallow and deep-sea circulation patterns.

5. Marine Engineering and Information: This direction involves research on ocean and coastal remote sensing, ocean mapping and information engineering, ocean acoustic technology methods and applications, and the development of ocean detection instruments and equipment. It covers a range of technologies including remote sensing, geographic information systems, marine mapping, pressure-resistant structures and materials, communications, positioning, control, energy, and data processing.

IV. Duration (学习年限)

The 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. General Requirements (总体要求)

During the three academic years (8 semesters), at least 22 credits are demanded to acquire the degree, which includes at least 18 credits for Courses (including 12 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	22	12	2	2	2	2	2

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

Category	Course Number	Course Name	Credit	Class Hour	Semester
Public Degree Courses (12 credits)	0852401	Comprehensive Chinese A	4	64	1
	0852402	Comprehensive Chinese B	4	64	2
	1142204	China Panorama A	2	32	1
	2330002	Practical Academic English	2	32	1
Major Degree Courses (2 credits)	Physical Oceanography Direction				
	0311424	Acquisition and Analysis of Ocean Data	2	32	1
	Marine Biology Direction				
	0310054	Marine Biogeochemistry	2	32	1
	0311416	Advanced Marine Geology	2	32	1
	0211905	Microbial Oceanography	2	32	1
	Marine Chemistry Direction				
	0310054	Marine Biogeochemistry	2	32	1
	0311416	Advanced Marine Geology	2	32	1
	0212303	Advanced Chromatograph/Mass Spectrometry Analysis Techniques	2	32	1
	0212304	Advanced Stable Isotope Geochemical Analysis Methods	2	32	2
	Marine Geology Direction				
	0311416	Advanced Marine Geology	2	32	1
	0310054	Marine Biogeochemistry	2	32	1
	0212303	Advanced Chromatograph/Mass Spectrometry Analysis Techniques	2	32	1

Category	Course Number	Course Name	Credit	Class Hour	Semester
	0212304	Advanced Stable Isotope Geochemical Analysis Methods	2	32	2
	Marine Technology Direction				
	0212001	Modern Marine Surveying and Mapping	2	32	1
	0212203	Marine Eco-acoustics	2	32	1
	0212306	Unmanned Aerial Vehicle Mapping and Marine Application	2	32	1
Basic Frontier Courses (2 credits)	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
	0321410	Frontier in Marine Science II (basic)	1	16	1
	0221902	Frontier in Marine Science III (basic)	1	16	1
Elective Courses (2credits)	0311419	Principles and Techniques of Marine Spatial Database	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
	0332601	Advances and Frontiers in Marine Geology	2	32	2

VII. Basic Requirements for Training Procedures (培养环节)

1. Personal Training Plan (制定培养计划)

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 college

2. Literature Review(文献综述)

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(开题报告)

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, and 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 "proposal 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 revise their proposal according to the opinions of the review group and re-submit it. If they still fail again, their training will be terminated and they will be considered withdrawn.

4. Mid-term Assessment and Mid-term Report(中期考核及中期汇报)

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 the understanding and knowledge of China,, 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 advisory committee or the expert group of the college, report the stage results and existing problems of scientific research work. They should fill in *the "Shanghai Ocean University Doctoral Interim Report Form",* as the University implement the assessment system, and the assessment results are graded on a five-level scale: excellent, good, medium, pass and fail.

5. Academic Activities(学术活动)

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 t*he Regulations of Shanghai Ocean University on Postgraduate Participation in Academic Activities.*

6. HSK Requirements（HSK要求）

Students who are taught in English must pass HSK3 before graduation.

Students who are taught in Chinese must pass HSK5 and finish the dissertation in Chinese.

7. Thesis Writing and Defense(学位论文与答辩)

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

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

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 should be 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. 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(学位授予)

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.

学位点负责人：许云平

2. 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. Research Directions（研究方向）

The degree in marine science includes secondary disciplines such as physical oceanography, marine biology, marine geology, marine chemistry, and marine technology.

1. Physical Oceanography: This direction focuses on numerical simulation techniques for global ocean multi-scale processes, ocean-atmosphere interactions and climate systems, polar ocean dynamic processes, shelf ocean dynamics, and marine ecological dynamics. It also includes studies on shallow sea dynamics, marine disasters, and environmental safety, supporting the development of oceanography through interdisciplinary approaches.
2. Marine Biology: This direction includes studies in marine biology and biological oceanography, marine invasion biology, marine microbiology, algal biology, and marine ecology. It focuses on the marine environment and marine primary productivity, polar marine ecosystems, particularly the life processes of typical polar species and their relationship with the environment and marine processes, mechanisms by which polar biological resources respond to climate change, and the relationship between deep-sea biological and genetic resources and the environment. It also investigates the molecular regulation mechanisms of biological processes and physiological ecology in the deep sea.
3. Marine Chemistry: This direction studies the chemical composition and content of various parts of the ocean, revealing various chemical processes and the laws of distribution and migration in the ocean. It also engages in the development and utilization of marine chemical resources. Characteristic areas include chemical cycling in the extreme environment of abyssal trenches, and the environmental behavior and impact mechanisms of natural and anthropogenic chemicals in estuarine and offshore waters.
4. Marine Geology: This direction mainly studies the structure, geological characteristics, genesis, and evolution of continental margins and ocean basins. Key research areas include deep-sea and

abyssal carbon cycles, seafloor cold seep activity and geochemical processes, gas hydrate accumulation, and understanding past global changes through the reconstruction of short-term and long-term shallow-sea and deep-sea circulation patterns.

5. Marine Technology: This direction involves research in marine mapping, marine acoustic techniques and methods, marine artificial intelligence, marine remote sensing and marine information technology and its applications, and the development of marine detection instruments and equipment. It covers technologies related to marine mapping, remote sensing, geographic information systems, artificial intelligence, and computer technology, as well as various general/specialized technologies such as pressure-resistant structures and materials, communication, positioning, control, energy, and data processing.

IV. Duration (学习年限)

The 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. General Requirements (总体要求)

During the three academic years (6 semesters), at least 38 credits are demanded to acquire the degree, which includes at least 34 credits for Courses (including 18 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	38	18	8	4	4	2	2

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Public Degree Courses (18 credits)	0842401	Comprehensive Chinese A	6	96	1
	0842402	Comprehensive Chinese B	6	96	2
	1142204	China Panorama A	2	32	1
	1142203	China Culture	2	32	1
	0810018	Practical Academic English	2	32	2
Major Degree Courses (8credits)	Physical Oceanography Direction				
	0311424	Acquisition and Analysis of Ocean Data	2	32	1
	Marine Biology Direction				
	0310054	Marine Biogeochemistry	2	32	1
	0311416	Advanced Marine Geology	2	32	1
	0211905	Microbial Oceanography	2	32	1
	Marine Chemistry Direction				
	0310054	Marine Biogeochemistry	2	32	1
	0311416	Advanced Marine Geology	2	32	1
	0212303	Advanced Chromatograph/Mass Spectrometry Analysis Techniques	2	32	1
	0212304	Advanced Stable Isotope Geochemical Analysis Methods	2	32	2

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Major Degree Courses (8credits)	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				
	0311416	Advanced Marine Geology	2	32	1
	0310054	Marine Biogeochemistry	2	32	1
	0212303	Advanced Chromatograph/Mass Spectrometry Analysis Techniques	2	32	1
	0212304	Advanced Stable Isotope Geochemical Analysis Methods	2	32	2
Basic Frontier Courses (4 credits)	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
	0221903	Disciplinary Research Progress (Tutor)	1	16	1
Elective Courses (4 credits)	0311419	Principles and Techniques of Marine Spatial Database	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

VII. Basic Requirements for Training Procedures (培养环节)

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 proposal 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. HSK Requirements (HSK要求)

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

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

7. Paper Writing and Defense（论文撰写及答辩）

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

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

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 they 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.

③The research purpose of the degree thesis is clear. The experimental design or investigation method is reasonable. Tthe data and information are authentic. The analysis method is appropriate, and the conclusion is reliable.

④The thesis has clear logic and fluent writing, and the writing meets the standard of *the "Writing Standards for Graduate Dissertations at Shanghai Ocean University"*.

⑤The paper should have certain innovation, application value, or academic reference value.

⑥The 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.

学位点负责人：许云平

College of Food Sciences &Technology

1. Doctoral 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 Chinese to complete the study and research tasks of the discipline and major, and have the ability to use Chinese to engage in related work of the major. Chinese proficiency should be at least HSK3.
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. Research Directions（研究方向）

1. High-Quality Processing and Utilization of Aquatic Products: This direction primarily researches the characteristics of aquatic food raw materials, the mechanisms of quality changes and regulation, optimizing processing technologies to improve product quality and create high-quality aquatic products. It also involves the separation and preparation of active components from low-value aquatic products and by-products, studying their functional mechanisms, and developing functional products such as collagen and bioactive peptides.
2. Food Cold Chain and Quality Control: This direction explores the biological mechanisms of food quality deterioration under environmental conditions and establishes effective methods for controlling quality deterioration during the cold chain process. It also involves the development, antimicrobial mechanisms, and application of new preservatives for fresh agricultural products, as well as investigating the impact of packaging materials on food quality. The focus is on quality evaluation techniques during the cold chain process of fresh food.
3. Food Safety and Quality Control: This direction applies new methods such as structural biology,

nanotechnology, microfluidics, spectroscopy, and intelligent sensing to conduct high-throughput rapid detection of major hazard factors in food, food safety risk assessment, and nutritional quality evaluation and control. It aims to establish a food safety discipline characterized by the detection, assessment, and control of important hazard factors in food.

4. Marine Biopharmaceutical Research: This direction focuses on marine pharmaceutical chemistry, pharmaceutical process engineering, pharmacology, and pharmaceutical analysis. It targets common diseases, conducting research on the discovery of marine lead compounds and targets, structure identification of bioactive compounds, analysis of compound activity mechanisms, pharmacokinetic evaluation, drug formulation, and drug analysis. The goal is to innovate marine new drugs, enhance the level of marine biopharmaceuticals, and promote public health.
5. New Food Thermal Processing Technologies: This direction primarily studies the application of new dielectric heating technologies in food sterilization, drying, and thawing. Based on electromagnetic field theory, it develops energy-saving and low-carbon dielectric heating equipment and processes, analyzes the rules of food quality changes during thermal processing, and provides technical and equipment support for producing high-quality, nutritious, and safe food.

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. 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 (22 credits) in different sections of training program, pass the following two compulsory steps, namely literature review (2 credits) and academic activities (2 credits). Students are also required to pass dissertation proposal, mid-stage report, mid-term assessment, 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 degrees.

Requirements		Degree Courses		Elective Courses	Literature Review	Academic Activities
		Public	Major			
The least credits	22	12	2	4	2	2

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Public Degree Courses（12 credits）	0852401	Comprehensive Chinese A	4	64	1
	0852401	Comprehensive Chinese B	4	64	2
	1142204	China Panorama A	2	32	1
	2330002	Practical Academic English	2	32	1
Major Degree Courses（2 credits）	0241701	Advanced Food Engineering	2	32	2
	0241703	Advanced Food Nutrition and Hygiene	2	32	2
Elective Courses（4 credits）	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

VII. Basic Requirements for Training Procedures (培养环节)

1. Personal Training Plan (制定培养计划)

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 college.

2. Literature Review(文献综述)

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(开题报告)

The thesis proposal 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, and 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 "proposal 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 proceed to the dissertation stage. Those who fail to pass should revise their proposal according to the opinions of the review group and re-submit it. If they still fail again, their training will be terminated and they will be considered withdrawn.

4. Mid-term Assessment and Mid-term Report(中期考核及中期汇报)

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 the understanding and knowledge of China, 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 advisory committee or the expert group of the college, reporting the stage results and existing problems of scientific research work. They should fill in *the "Shanghai Ocean University Doctoral Interim Report Form",* as the University implements the assessment system. The assessment results are graded on a five-level scale: excellent, good, medium, pass and fail.

5. Academic Activities(学术活动)

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. HSK Requirements（HSK要求）

Students who are taught in English must pass HSK3 before graduation.

Students who are taught in Chinese must pass HSK5 and finish the dissertation in Chinese.

7. Thesis Writing and Defense(学位论文与答辩)

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

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

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. 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(学位授予)

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.

学位点负责人：谢晶

2. 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, studengts will be able to independently engage in food-related technology development, scientific research and application, and producing organization management, etc.

III. Research Directions（研究方向）

1. High-Quality Processing and Utilization of Aquatic Products: This direction primarily researches the characteristics of aquatic food raw materials, the mechanisms of quality changes and regulation, optimizing processing technologies to improve product quality and create high-quality aquatic products. It also involves the separation and preparation of active components from low-value aquatic products and by-products, studying their functional mechanisms, and developing functional products such as collagen and bioactive peptides.
2. Food Cold Chain and Quality Control: This direction explores the biological mechanisms of food quality deterioration under environmental conditions and establishes effective methods for controlling quality deterioration during the cold chain process. It also involves the development, antimicrobial mechanisms, and application of new preservatives for fresh agricultural products, as well as investigating the impact of packaging materials on food quality. The focus is on quality evaluation techniques during the cold chain process of fresh food.
3. Food Safety and Quality Control: This direction applies new methods such as structural biology, nanotechnology, microfluidics, spectroscopy, and intelligent sensing to conduct high-throughput rapid detection of major hazard factors in food, food safety risk assessment, and nutritional quality evaluation and control. It aims to establish a food safety discipline characterized by the detection, assessment, and control of important hazard factors in food.
4. Marine Biopharmaceutical Research: This direction focuses on marine pharmaceutical chemistry, pharmaceutical process engineering, pharmacology, and pharmaceutical analysis. It targets common diseases, conducting research on the discovery of marine lead compounds and targets, structure identification of bioactive compounds, analysis of compound activity mechanisms, pharmacokinetic evaluation, drug formulation, and drug analysis. The goal is to innovate marine new drugs, enhance the level of marine biopharmaceuticals, and promote public health.
5. New Food Thermal Processing Technologies: This direction primarily studies the application of new dielectric heating technologies in food sterilization, drying, and thawing. Based on electromagnetic field theory, it develops energy-saving and low-carbon dielectric heating equipment and processes, analyzes the rules of food quality changes during thermal processing, and provides technical and equipment support for producing high-quality, nutritious, and safe food.

IV. Duration（学习年限）

Beginning with the mandatory first-year courses, the master program usually consists of 3 years, and no more than 5 years (including temporary leave of absence).

There is only one chance to apply for delaying graduation.

V. General Requirements（总体要求）

During the three academic years (6 semesters), at least 32credits are requested to acquire the degree, including at least 28 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	32	18	4	6	2	2

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Public DegreeCourses（18 credits）	0842401	Comprehensive Chinese A	6	96	1
	0842402	Comprehensive Chinese B	6	96	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）	0241701	Advanced Food Engineering	2	32	2
	0241702	Advanced Food Chemistry and Nutrition	2	32	2
Elective Courses（6credits）	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

VI. Basic Requirements for Training Procedures（培养环节）

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 proposal 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 the understanding and knowledge of China,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. HSK Requirements (HSK要求)

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

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

7. Paper Writing and Defense（论文撰写及答辩）

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

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

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 they 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.

④The thesis has clear logic and fluent writing, and the writing meets *the "Writing Standards for Graduate Dissertations at Shanghai Ocean University".*

⑤The paper should have certain innovation, application value, or academic reference value.

⑥The 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 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.

学位点负责人：谢晶

College of Economics and Management

1. Doctoral 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. Students 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; students 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 development, 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:

1. Fishery Economic Theory and Policy: This direction mainly studies the basic theories of effective allocation and utilization of resources in the fishing and aquaculture industries, fishery industry structure and its adjustment, fishery support and protection, agricultural modernization, and other aspects. It also examines policies on fishery resources and their sustainable utilization, aquatic product production, circulation, processing, trade, market supervision, fiscal support for fishery, and labor transfer in fishing villages.
2. Fishery Resources and Environmental Economy: This direction mainly studies the relationship between fishery economic development and resource and environmental protection, the impact of different productivity layouts on fishery resources and the environment and their economic effects, economic policies for fishery environmental pollution prevention and control, the formulation of scientific and cost-effective fishery environmental standards, and fishery resources and environmental economic policies.

3. Aquatic Product Market and Trade: This direction 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 and the impact of aquatic product trade on resources and the environment.

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 (24 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 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 Review	Academic Activities
		Public	Major				
The least credits	28	12	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: 24 (not include literature review and academic activities)

Including:

1. Core units: a minimum of 12 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 fishery economics and management 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
Public Degree Courses (12Credits)	0852401	Comprehensive Chinese A	4	64	1
	0852402	Comprehensive Chinese B	4	64	2
	1142204	China Panorama A	2	32	1
	2330002	Practical Academic English	2	32	1
Major	0532201	Advanced Microeconomics	2	32	1

Course Type	Course Number	Course Name	Credit	Class Hour	Semester
Degree Courses (5 Credits)	0532202	Advanced Macroeconomics	1	16	2
	0532203	Advanced Econometrics	2	32	2
Basic Frontier Courses (3 Credits)	0511904	Research Progress in Subjects	1	16	2
	0431202	Advanced Fishery Economics and Management	1	16	1
	0532301	Sustainable Development of Aquatic Products（I）	1	16	1
	0532303	Sustainable Development of Aquatic Products（II）	1	16	2
Elective Courses (4 Credits)	0441704	Development Economics	2	32	1
	0511905	Supervisor's Seminar	1	16	1
	0431208	Advanced Sections of Aquatic Product Market and Trade	1	16	2
	0531903	Advanced Food Economics and Management	2	32	3
	0531904	Advanced Environmental and Fishery Resources Economics	2	32	3

VII. Basic Requirements for Training Procedures (培养环节)

1. Personal Training Plan (制定培养计划)

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 college.

2. Literature Review(文献综述)

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(开题报告)

The thesis proposal 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, and 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 "proposal 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 revise their proposal according to the opinions of the review group and re-submit it. If they still fail again, their training will be terminated and they will be considered withdrawan.

4. Mid-term Assessment and Mid-term Report(中期考核及中期汇报)

In the fourth semester after enrollment, according to the postgraduate training plan and their personal training plan, graduate students will be evaluated in terms of the understanding and knowledge of China, 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 advisory committee or the expert group of the college, report the stage results and existing problems of scientific research work. They should fill in *the "Shanghai Ocean University Doctoral Interim Report Form"* as the University implement the assessment system. The assessment results are graded on a five-level scale: excellent, good, medium, pass and fail.

5. Academic Activities(学术活动)

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. HSK Requirements（HSK要求）

Students who are taught in English must pass HSK3 before graduation.

Students who are taught in Chinese must pass HSK5 and finish the dissertation in Chinese.

7. Thesis Writing and Defense(学位论文与答辩)

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

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

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 should be 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. 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(学位授予)

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.

学位点负责人：杨正勇

2. Master Program in Fishery Economics and Management for International Students

(Discipline Code: 0908Z1)

I. Introduction（专业简介）

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 development, 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:

1. Fishery Economic Theory and Policy: This direction mainly studies the basic theories of effective allocation and utilization of resources in the fishing and aquaculture industries, fishery industry structure and its adjustment, fishery support and protection, agricultural modernization, and other aspects. It also examines policies on fishery resources and their sustainable utilization, aquatic product production, circulation, processing, trade, market supervision, fiscal support for fishery, and labor transfer in fishing villages.
2. Fishery Resources and Environmental Economy: This direction mainly studies the relationship between fishery economic development and resource and environmental protection, the impact of different productivity layouts on fishery resources and the environment and their economic effects, economic policies for fishery environmental pollution prevention and control, the formulation of scientific and cost-effective fishery environmental standards, and fishery

resources and environmental economic policies.

3. Aquatic Product Market and Trade: This direction 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 and the impact of aquatic product trade on resources and the 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.

V. General Requirements（总体要求）

Master students must complete 32 credits in total, including at least 28 credits of course study, 2 credits for literature review and 2 credits for academic activities. Students must pass the thesis proposal, the mid-term evaluation, the 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	32	18	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
Public Degree Courses (18 Credits)	0842401	Comprehensive Chinese A	6	96	1
	0842402	Comprehensive Chinese B	6	96	2
	1142204	China Panorama A	2	32	1
	1142203	China Culture	2	32	1
	0810018	Practical Academic English	2	32	2
Major Degree Courses(4 Credits)	0512202	Intermediate Fishery Resources and Environmental Economics	2	32	2
	0410027	Intermediate Microeconomics	2	32	1
Basic Frontier Courses (2 Credits)	0511904	Research Progress in Thesis Subjects	1	16	2
	0431202	Advanced Fishery Economics and Management	1	16	1
	0532301	Sustainable Development of Aquatic Products (1)	1	16	1
	0532303	Sustainable Development of Aquatic Products（2）	1	16	2
Elective Courses (4 Credits)	0441703	Modern Industrial Economics	2	32	1
	0441704	Development Economics	2	32	1
	0441705	International Trade Theory, Policy And Strategy	2	32	2
	0441706	International Financial Theory and Policy	2	32	2
	0431208	Advanced Sections of Aquatic Product Market and Trade	1	16	2
	0511905	Supervisor's Seminar	1	16	1

VII. Basic Requirements for Training Procedures (培养环节)

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 proposal 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. HSK Requirements (HSK要求)

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

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

7. Paper Writing and Defense（论文撰写及答辩）

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

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

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 they 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 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.

学位点负责人：伍大清

3. 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，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、科研工作和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，以涉海区域经济理论与政策、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

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。硕士研究生在校最长学习年限（含休学和保留学籍）不超过5年。

五、总体要求

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、通过汉语水平等级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	
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	

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≥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
	0512503	数字经济	2	2	选修	论文	
	0512502	商业大数据分析	1	1	选修	论文	上机操作课
	0522201	海洋经济前沿专题	1	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
四、选修课 硕士≥2学分	TBD	社会科学研究伦理	1	1	选修	考查/报告	
	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	
	0512516	国际经济政策	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	本科高阶选修课
	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	
	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	
	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	
	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	
	0512501	人工智能营销	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	
	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	

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

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，对研究生在中国的认识和理解方面、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. HSK要求

以中文授课的学生须通过HSK5级，并用中文完成论文。

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）。

8. 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。

学位点负责人：廖泽芳

College of Engineering Science and Technology

1. Doctoral Program in Marine Science (Marine Engineering and Information) for International Students

(Discipline Code: 070700)

I. Introduction (专业介绍)

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 .

II. Objectives (培养目标)

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.

III. Research Direction（研究方向）

The major includes marine and fishery engineering, Marine Technology and equipment.

1. Ocean and fishery engineering: including the optimization design theory of engineering facilities aiming at the exploitation of ocean and fishery resources, the evaluation method of the security of engineering facilities in extreme environment, the health monitoring of engineering facilities based on advanced means such as digital twinning, the green energy supply mode of engineering facilities, and the research of intelligent and low-carbon aquaculture engineering model.

2. Marine technology and equipment: including marine renewable energy development technology and equipment development technology aiming at Marine Resources Exploration, monitoring buoy network communication technology, grid underwater beacon data fusion technology, underwater robot high-precision automatic control and tracking technology, three-dimensional distributed monitoring network construction technology research, etc.

IV. Duration (学习年限)

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.

V. General Requirements (总体要求)

During the four academic years (8 semesters), at least 22 credits are requested to acquire the degree, including at least 18 credits for Courses, 2 credits for Literature Review and 2 credits for Academic Activities.

Requirements		Degree Courses		Basic frontier courses	Elective Courses	Literature Review	Academic Activities
		Public	Major				
The least credits	22	12	2	2	2	2	2

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

Course Type	Code	Course	Credit	Class Hour	Semester	Course Type
Public Degree Courses (12 credits)	0852401	Comprehensive Chinese A	4	64	1	Compulsory
	0852402	Comprehensive Chinese B	4	64	2	Compulsory
	1142204	China Panorama A	2	32	1	Compulsory
	2330002	Practical Academic English	2	32	1	Compulsory
Major Degree Courses（2credits）	0612305	Marine renewable energy power generation technology	1	16	1	Compulsory
	0632201	Reliability Theory	1	16	1	Compulsory
Basic Frontier Courses（2 credits）	0631904	Progress in disciplinary research	1	16	2	Compulsory
	0611903	Research seminar	1	16	2	Compulsory
Elective Courses（2 credits）	0632501	Frontier Course in Ocean Engineering and Information Fundamentals (Bilingual)	1	16	1	Optional
	0611904/0612129	Paper Writing and Academic Norms (College of Engineering Science and Technology)	1	16	1/2	Optional
	0612502	Design and Analysis of Ship and Ocean Engineering Structures	2	32	1	Optional
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.				

VII. Basic Requirements for Training Procedures (培养环节)

1. Personal Training Plan (制定培养计划)

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(文献综述)

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(开题报告)

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 (中期考核及中期汇报)

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(学术活动)

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. HSK Requirements（HSK要求）

Students who taught in English must pass HSK3 before graduation.

Students who taught in Chinese must pass HSK5 and finish the dissertation in Chinese.

7. Thesis Writing and Defense(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 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(学位授予)

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.

学位点负责人：王芳

2. Master Program in Machinery for International Students

(Discipline Code:085500)

I. 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.

II. 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.

III. Research Direction（研究方向）

Mechanical Engineering and industrial engineering are the three research fields of this major.

1. Intelligent Mechanical System Design and Manufacturing: Electromechanical systems and their measurement and control technology, intelligent mechanical design and simulation, intelligent manufacturing and advanced manufacturing technology, modern mechanical design and CAE technology.

2. Marine Engineering Equipment and Robotics Technology: Green development of marine resources, underwater robotics technology, marine information perception, marine engineering and equipment, design and theory of energy conversion equipment, design and application of marine energy equipment, engineering material research and application, etc.

3. Smart Fisheries and Modern Equipment Engineering: Fisheries engineering and equipment, intelligent aquaculture vessel equipment, digitization of fishery resources, reliability and assessment of net boxes, intelligent technology for aquaculture equipment, etc

.IV. Duration（学习年限）

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

V. General Requirements（总体要求）

Students are taught in English, and there are five modules in the curriculum.

During the three academic years (6 semesters), at least 42 credits are requested to acquire the degree, including at least 34 credits for Courses, 2 credits for Literature Review and 6 credits for Practice.

Requirements		Degree Courses		Basic frontier courses	Elective Courses	Literature Review	Practice
		Public	Major				
The least credits	42	18	8	4	4	2	6

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

Course Type	Course Number	Course Name	Credit	Class Hour	Semester	备注
Public Degree Courses（18 credits）	0842401	Comprehensive Chinese A	6	96	1	
	0842402	Comprehensive Chinese B	6	96	2	
	1142204	China Panorama A	2	32	1	
	1142203	China Culture	2	32	1	

Course Type	Course Number	Course Name	Credit	Class Hour	Semester	备注
	0810018	Practical Academic English	2	32	2	
Major Degree Courses（8credits）	0642501	Statics and kinematics of robot	2	32	2	
	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）	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）	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	

VII. Educational Procedures and Basic Requirements for Credits（培养环节）

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. 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. HSK Requirements (HSK要求)

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

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

7. Paper Writing and Defense（论文撰写及答辩）

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 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.

③The 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.

④The thesis has clear logic and fluent writing, and the writing meets *the "Writing Standards for Graduate Dissertations at Shanghai Ocean University"*.

⑤The paper should have certain innovation, application value, or academic reference value.

⑥The 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.

学位点负责人：褚振华