

# Graduate School of Bioresources

## FOREIGN STUDENTS' GUIDELINES

For the Completion of the

**MASTER'S PROGRAM**

and the

**DOCTORAL PROGRAM**

(starting from April 2017)

**MIE UNIVERSITY**

Since 1874

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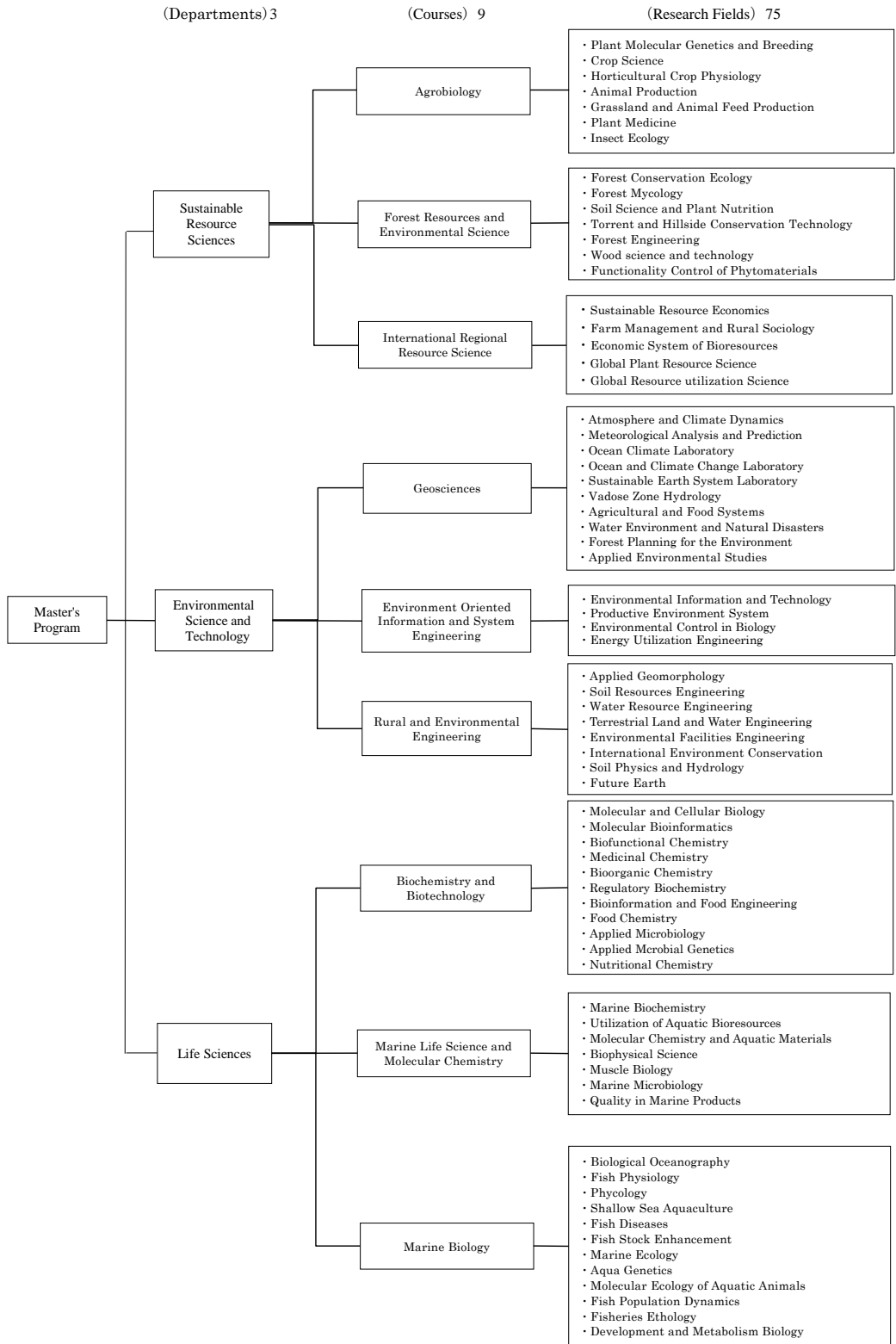
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# **OVERVIEW OF THE MASTER'S PROGRAM**

# I . Organization of the Master's Program

This Graduate School Consists of 3 Departments, 9 Courses and 75 Research Fields.



## **Outline of Departments and Courses**

### **Department of Sustainable Resource Sciences**

In Department of Sustainable Resource Sciences, we aim to educate people who can develop technology and research for the cyclic use of bioresources through efficient, environmentally-friendly methods and design a new society, building a harmonious recycling society.

To that end, we carry out research and education on the sustainable use of bioresources through a study of biological life systems, the environment they live in, and biodiversity. The department is made up of three courses: Agrobiology, which mainly conducts research and education on the use of bioresources such as food and useful materials, Forest Resources and Environmental Science, which mainly conducts research and education on methods for using forest resources and their diverse functions sustainably, and International Regional Resource Science, which conducts research and education on the use of bioresources from economic, management, social, and policy points of view. The details of the education and research provided by each course are as follows.

#### **Agrobiology Course**

Agriculture is a vital activity for humans, and plays an important role in supplying safe and high-valued food to humans, protecting the global environment, and conserving bioresources for sustainable use. We aim to develop efficient and environmentally-friendly agricultural techniques. The techniques include those for protecting crops from insect pests and diseases. Moreover, to develop the above techniques, we try to discover possibly useful functions equipped in living beings at levels of genes, cells, organs, organisms, populations, communities, and ecosystems by using various approaches based on genetics, physiology, systematics, and ecology.

#### **Forest Resources and Environmental Science Course**

Covering 30% of the earth's surface, forests are a massive collection of biological life that accounts for 90% of all life on land. This is why forests both play a large role in sustaining the global environment and are important as a renewable resource. In addition, not only do they function to adjust the environment through land conservation, water resource cultivation, and climate mitigation, forests contribute a great deal to our lifestyles by, for example, providing us with green spaces to gain mental relaxation. In this course, we seek to understand the features of forests, with their multifaceted functions, and find methods for using these resources and diverse functions sustainably while maintaining harmony with the natural environment. We do this through lectures, seminars, and practical training in the university's forest. Topics covered include ecology, botany, microbiology, soil science, chemistry, physics, and information science.

### **International Regional Resource Science Course**

We carry out research and education to use unique local assets appropriately in rural villages around Japan and the world, with the aim of creating sustainable socio-economic development. Specifically, we emphasize fieldwork, providing education and research on socio-economic fields with the aim of constructing a social system to achieve sustainable use of local resources. We also carry out education and research related to practical utilization technology for regional resources targeted at developing nations in particular, on a foundation of biology.

## **Department of Environmental Science and Technology**

In Department of Environmental Science and Technology, we aim for the construction of a sustainable biological production system in which human activities and biological systems are in harmony while preserving and restoring, and understanding, the environment of the global biosphere which is made up of all the diverse ecologies on Mother Earth. To that end, we carry out research and education, rooted in basic science, in fields such as meteorology, environmental science, and ecology, covering the whole scale of sizes, from microflora to the earth itself, looking at global ecological systems with its complex interactions among the land, sea, and sky. This department is made up of three courses: Geosciences, which looks at the basic science fields of geoscience, soil science, and plant physiological ecology, as well as food system science, a field of applied science; Environment Oriented Information and System Engineering, which uses instrumentation, control and systems engineering of environmental information, with a core of information processing technology based on knowledge of bioecology, as its methods; and Rural and Environmental Engineering, which is designed for the protection of rural villages and farmland where humans are directly connected with the workings of nature as well as their sustainable use as sound, healthy places for material circulation. The details of the education and research provided by each course are as follows.

### **Geosciences Course**

Changes in the earth's environment such as climate changes and abnormal weather work in concert with ecological environmental systems and earth systems that are made up of the atmosphere, the oceans, the soils, plants, the hydrosphere, the ecosphere, and the activities of humans and other animals. We conduct research on the basic structures, change processes, symbiotic relationships, and interactions that make up these systems, such as the evolution of the earth, climate and terroir, conservation of the global environment, the physiological ecology and ecological harmonization of flora and fauna, and human activities, all with reference to observation, measurement, experimentation, investigation, remote sensing, and numerical analysis. We provide education and research to train people who can use the new scientific knowledge gained from this research and the thinking and practical skills learned through research to contribute to the creation of the next-generation culture and construct a sustainable society.

### **Environment Oriented Information and System Engineering Course**

In order to allow humans to develop sustainably while coexisting with other organisms and preserving the environment, our course uses systems engineering as a method for education and research related to complex systems, the control of production systems, and the measurement of environmental information with a core of information processing technology, building on knowledge of bioecology. In other words, we offer research and education on symbiotic technology and plants that are related to environmental improvement. In addition, we carry out research and education on applied technology such as the production and processing of bioresources using low environmental load technologies through precise management.

### **Rural and Environmental Engineering Course**

In our course, we provide education and research with the goal of creating a rich rural environment as place for sound, healthy material circulation, preserving the rural regions where agriculture is practiced. Specifically, we carry out research and education on the appropriate and sustainable use of water, soil, and space in rural areas where the workings of nature and humans directly interact, planning and conservation for rural environments, development and management of rural areas and facilities, the effective use of regional resources, the theories and technologies required for preventing or mitigating natural disasters and recovering from them, explanations of topographical formation processes through long-term changes in the substratum, investigation and analysis of overland and subsurface flows, and explanations and forecasts for the flow of water, chemicals, heat, and gas in rural areas.



## **Department of Life Sciences**

Department of Life Sciences aims to build the basic scientific theories related to the life sciences overall as well as a field of study related to the development, conservation, and management of marine bioresources, and to instruct the students through the practical education. Therefore, in this department, we carry out research and education in order to allow individual students to learn the research skills required for research in the life sciences, as well as to understand basic theory related to the life phenomena of bioresources at the ecosystem, community, population, individual, organ, cell, and molecular levels. The department is made up of three courses: Biochemistry and Biotechnology, which seeks to clarify the structure and functions of the systems and molecules of life phenomena through research strategies related to bioscience and biotechnology, and apply them to the development of functional molecules and foods, or to environmental technologies; Marine Biotechnology, which aims to explain the marine biological functions of marine life on a chemical level and contribute to the effective use of marine bioresources, and Marine Biology, which seeks to understand life in the hydrosphere, including fresh water areas, and the workings of these life forms on a range of scales, from molecular to ecological. The details of the education and research provided by each course are as follows.

### **Biochemistry and Biotechnology Course**

Our goal is the effective use of bioresources over a wide area that includes foods, health, drugs, lifestyle, and the environment. Using the strategy of bioscience and biotechnology, we look at the diverse systems of life phenomena, whether animal, plant, or microorganism, as well as their molecular structures and functions of the materials that these organisms produce. Our aim is to establish theories and skills for applying these results to the development of new functional molecules and foods, and environmental technologies. To that end, we carry out specialist research and education from the perspectives of chemistry, biochemistry, molecular biology, and bioengineering, with a focus on research into structures and functions of new functional materials, the genetic expression mechanisms of animals and microorganisms, bio-information sensing and processing technologies, and the development of technologies for using unutilized bioresources.

### **Marine Life Science and Molecular Chemistry Course**

Along with providing explanations for the marine biological functions on a chemical level, we also aim to effectively utilize marine bioresources such as seafood, algae, marine microorganisms, etc., and to integrate biological information through analysis and isolation of their components. In addition, we use these as materials to create functional food resources, cosmetics, etc. through biochemical and genetic engineering techniques. In our course, we provide research and education on biochemistry, molecular biology, and the analytical techniques. Furthermore, we carry out research and education so that students can learn and master abilities to handle these techniques into practice.

### **Marine Biology Course**

In our course, we research marine life on a range of scales, from cellular and individual to biotic communities and ecosystems. Our research fields cover all marine environments, including fresh water, but with an emphasis on the oceans. The subject of research consists of different biology with plankton, algae, crustaceans, shellfish, finfish, and marine mammals. We conduct research and education on understanding the workings of each of these life forms at the genetic, cellular, individual, and community levels, as well as on methods for preserving ecosystems and biodiversity and on the sustainable use of marine life. We also aim to enrich human life through the appropriate management of marine life as resources, and effective increase and farming methods for them.

## II. How to Enroll for Subjects

### 1 Course name

The names of each department and course are shown in V.

### 2 Credit standards

Lectures (incl. advanced courses, advanced lectures, etc.)	15 hours	1 credit
Seminars	30 hours	1 credit
Labs (practical training, including internships)	45 hours	1 credit
Advanced research	45 hours	1 credit

### 3 How to enroll

(1) A minimum of 30 credits needs to be obtained from a combination of compulsory subjects (as specified by the department or course the student is a member of) and required elective subjects from those currently offered.

Advanced research	10 credits	(Compulsory)
Lectures and seminars	At least 20 credits	(Combination of compulsory and required electives)
Total	At least 30 credits	

(2) However, subjects in other departments or graduate schools that the instructor in charge has deemed necessary to take may be included in these 30 credits to a maximum of 10 credits.

(3) “Internships” in the joint subjects for each department cannot be included in the graduation requirements.

### **III. Graduation Requirements and Degrees**

#### 1 Graduation requirements

Students are required to spend at least two years in this graduate school (the Master's course) and obtain at least 30 credits from instruction by faculty members; in addition, they are required to have undertaken the necessary research guidance and to pass the examination for their graduate thesis and final defense conducted by this graduate school. However, students with especially meritorious performance may be permitted to graduate after only one year.

#### 2 Types of degrees

The degree awarded shall be the degree of Master (Bioresources).

### **IV. Thesis Research Plan and Screening Criteria**

#### 1 Thesis research plan

Instruction for the graduate thesis shall be given in accordance with the following plan, based on the Mie University Graduate School Regulations.

##### (1) Research theme for graduate thesis

Students shall discuss their research themes and direction with their supervising professor when entering the Graduate School.

##### (2) Graduate thesis

The thesis will be reviewed by an examination committee composed of the student's supervising professor (full professor) serving as chief examiner as well as at least two faculty members (professor, associate professor, lecturer) connected with the thesis serving as associate examiners. In addition, the examination committee shall require the student to submit to a written or oral defense of the thesis topic and other related subjects.

##### (3) Examination

The examination will take place with the following schedule. (Note that the actual dates will differ by year, so check the listings on the Graduate School website.)

Examination procedure	Examination schedule for student intending to graduate in March	Examination schedule for student intending to graduate in September
- The supervising professor will instruct the student to submit the Application for Examination of Graduate Thesis.	Late November	Mid-May
- Submission of the Application for Examination of Graduate Thesis (to Student Affairs Office) - Submission of graduate thesis (to chief examiner) - The Graduate School Faculty Committee makes the decision to establish the Graduate Thesis Examination Committee (chief examiner, associate examiners)	Late January to early February	Mid-July to late July
- Examination and final defense of the thesis	Mid-February	Mid-August
- The Graduate School Faculty Committee judges whether the student shall be graduated based on the examination of the thesis and the final defense results.	Early March	Early September
- Degree conferral ceremony	End of March	Mid-September

## 2 Graduate thesis examination standards

The thesis will be assessed through the thesis examination and final defense (written or oral) on the following points, after which the decision on whether to pass it will be made through a comprehensive evaluation of these results.

### Examination points

- (1) Has the student mastered sufficient basic and specialist knowledge for a Master's degree in the relevant field?
- (2) In the submitted thesis, have the background, position, and purpose of the research in the relevant field been clearly noted and are they appropriate for a graduate thesis?
- (3) Have appropriate research methods and/or experiment plans been prepared for the set research theme, and have valid analysis and considerations been made regarding the obtained results?
- (4) Are the contents of the thesis (main body, figures, tables, cited literature, etc.) both sufficient and appropriate, and is there a consistent logical structure throughout that leads to the conclusion?

(5) From a theoretical or empirical point of view of the relevant research field, does the thesis have any novelty or value as a graduate thesis?

(6) Does the mastery of foreign languages related to the comprehension of the literature required in order to carry out the research reach a sufficient level?

## V. Subjects per Departments and Courses

### 1. Department of Sustainable Resource Sciences

Course	Field of Research	Class	Credits		
			Mandatory	Optional mandatory	
Agrobiology	Plant Molecular Genetics and Breeding	Advanced Molecular Genetics and Breeding		2	
		Seminar on Molecular Genetics and Breeding		2	
	Crop Science	Advanced Crop Science		2	
		Seminar on Crop Science		2	
	Horticultural Crop Physiology	Advanced Horticulture Crop Physiology		2	
		Seminar on Horticulture Crop Physiology		2	
	Animal Production	Advanced Animal Production		2	
		Seminar on Animal Production		2	
	Grassland and Animal Feed Production	Advanced Grassland and Feed Science		2	
		Seminar on Grassland and Feed Science		2	
	Plant Medicine	Advanced Plant Pathology		2	
		Seminar on Plant Pathology		2	
	Insect Ecology	Advanced Insect Ecology		2	
		Seminar on Insect Ecology		2	
	Vegetable Genomics and Breeding	Advanced Vegetable Genomics and Breeding		2	
		Seminar on Vegetable Genomics and Breeding		2	
	Common classes	Thesis Research in Agricultural Biology I		4	
		Thesis Research in Agricultural Biology II		6	
		Advanced Crop Ecology and Physiology			2
		Seminar on Crop Ecology and physiology			2
Advanced Molecular Engineering				2	
Seminar on Agricultural Biology				2	

## 1. Department of Sustainable Resource Sciences

Course	Field of Research	Class	Credits		
			Mandatory	Optional mandatory	
Forest Resources and Environmental Science	Forest Conservation Ecology	Advanced Forest Conservation Ecology		2	
		Seminar on Forest Conservation Ecology		2	
	Forest Mycology	Advanced Forest Mycology		2	
		Seminar on Forest Mycology		2	
	Soil Science and Plant Nutrition	Advanced Soil and Environmental Sciences		2	
		Seminar on Soil Science and Plant Nutrition		2	
	Torrent and Hillside Conservation Technology	Advanced Technology of Torrent and Hillside Conservation		2	
		Seminar on Technology of Torrent and Hillside Conservation		2	
	Forest Engineering	Advanced Environmental Forest Engineering		2	
		Seminar on Environmental Forest Engineering		2	
	Wood science and technology	Advanced Wood and Timber Engineering		2	
		Seminar on Advanced Wood and Timber Engineering		2	
	Functionality Control of Phytomaterials	Advanced Control Technology of Phytomaterials		2	
		Seminar on Control Technology of Phytomaterials		2	
	Common classes	Thesis Research in Forest Resources and Environment I		4	
		Thesis Research in Forest Resources and Environment II		6	
		Advanced Technology of Forest Management			2
		Seminar on Forest Management			2
		Advanced Forest Resources and Environmental Science			2



## 1. Department of Sustainable Resource Sciences

Course	Field of Research	Class	Credits	
			Mandatory	Optional mandatory
International Regional Resource Science	Sustainable Resource Economics	Advanced Food and Agricultural Economics		2
		Seminar on Food and Agricultural Economics		2
	Farm Management and Rural Sociology	Advanced Sustainable Farm Management and Rural Sociology		2
		Seminar on Advanced Sustainable Farm Management and Rural Sociology		2
	Economic System of Bioresources	Advanced Marine Bioresources Economics		2
		Seminar on Marine Bioresources Economics		2
	Global Plant Resource Science	Advanced Global Plant Resource Science		2
		Seminar on Global Plant Resource Science		2
	Global Resource Utilization Science	Advanced Feed Resource Science		2
		Seminar on Feed Resource Science		2
	Common classes	Thesis Research in International Rural Resource I	4	
		Thesis Research in International Rural Resource II	6	
		Special Lecture on International Rural Resource I		1
		Special Lecture on International Rural Resource II		1
Classes common in the Department	Advanced Sustainable Bioresource Sciences	2		
	Special Lecture on Sustainable Bioresource Sciences		2	
	Introduction to Sustainable Bioresource Sciences I		2	
	Introduction to Sustainable Bioresource Sciences II		2	
	Internship		90h	
	Long Term Internship		135h	

Regarding the Lecture of Research Ethics:

You need to attend the lecture of research ethics by e-learning system and so on during your study in the Faculty of Bioresources. This is a supplementary lecture to the main curriculum above.

(上記カリキュラム以外の補足事項として、在学期間中に e-learning 等で必ず研究倫理教育を受講するものとする。)

## 2. Department of Environmental Science and Technology

Course	Field of Research	Class	Credits	
			Mandatory	Optional mandatory
Geosciences	Atmosphere and Climate Dynamics	Advanced Atmosphere and Climate Dynamics		2
		Seminar on Atmosphere and Climate Dynamics		2
	Meteorological Analysis and Prediction	Advanced Meteorological Analysis and Prediction		2
		Seminar on Meteorological Analysis and Prediction		2
	Ocean Climate Laboratory	Advanced Ocean Climate Laboratory		2
		Seminar on Ocean Climate Laboratory		2
	Ocean and Climate Change Laboratory	Advanced atmospheric and oceanic fluid dynamics		2
		Seminar on atmospheric and oceanic fluid dynamics		2
	Sustainable Earth System Laboratory	Advanced Sustainable Earth System Laboratory		2
		Seminar on Sustainable Earth System Laboratory		2
	Vadose Zone Hydrology	Advanced Vadose Zone Hydrology		2
		Seminar on Vadose Zone Hydrology		2
	Agricultural and Food Systems	Advanced Agricultural and Food Systems		2
		Seminar on Agricultural and Food Systems		2
	Water Environment and Natural Disasters	Advanced Water Environment and Natural Disasters		2
		Seminar on Water Environment and Natural Disasters		2
	Forest Planning for the Environment	Advanced Forest Planning for the Environment		2
		Seminar on Forest Planning for the Environment		2
	Applied Environmental Studies	Advanced Environmental Analysis		2
		Seminar on Environmental Analysis		2
	Nature and Coexistence	Advanced Nature and Coexistence		2
		Seminar on Nature and Coexistence		2
	Common classes	Thesis Research in Geosciences I	4	
		Thesis Research in Geosciences II	6	

## 2. Department of Environmental Science and Technology

Course	Field of Research	Class	Credits		
			Mandatory	Optional mandatory	
Environment Oriented Information and System Engineering	Environmental Information and Technology	Advanced Theory of Environmental Information and Technology		2	
		Seminar on Environmental Information and Technology		2	
	Productive Environment System	Advanced Theory of Productive Environment System		2	
		Seminar on Productive Environment System		2	
	Environmental Control in Biology	Advanced Theory of Environmental Control in Biology		2	
		Seminar on Advanced Theory of Environmental Control in Biology		2	
	Energy Utilization Engineering	Advanced Theory of Energy Utilization Engineering		2	
		Seminar on Energy Utilization Engineering		2	
	Common classes	Thesis Research in Environment Oriented Information and System I		4	
		Thesis Research in Environment Oriented Information and System II		6	
		Advanced Theory of Control Engineering			2
		Advanced Theory of Applied Systems Engineering			2
		Advanced Theory of Natural Energy Engineering			2

2. Department of Environmental Science and Technology

Course	Field of Research	Class	Credits		
			Mandatory	Optional mandatory	
Rural and Environmental Engineering	Applied Geomorphology	Advanced Applied Geomorphology		2	
		Seminar on Applied Geomorphology		2	
	Soil Resources Engineering	Advanced Soil Resources Engineering		2	
		Seminar on Soil Resources Engineering		2	
	Water Resource Engineering	Advanced Water Resource Engineering		2	
		Seminar on Water Resource Engineering		2	
	Terrestrial Land and Water Engineering	Advanced Terrestrial Land and Water Engineering		2	
		Seminar on Terrestrial Land and Water Engineering		2	
	Environmental Facilities Engineering	Advanced Environmental Facilities Engineering		2	
		Seminar on Environmental Facilities Engineering		2	
	International Environment Conservation	Advanced International Environment Conservation		2	
		Seminar on International Environment Conservation		2	
	Soil Physics and Hydrology	Advanced Soil Physics and Hydrology		2	
		Seminar on Environmental Soil Physics		2	
	Future Earth	Advanced Future Earth		2	
		Seminar on Future Earth		2	
	Common classes	Thesis Research in Rural and Environmental Engineering I		4	
		Thesis Research in Rural and Environmental Engineering II		6	
		Advanced Regional Environmental Engineering			2

## 2. Department of Environmental Science and Technology

Course	Field of Research	Class	Credits	
			Mandatory	Optional mandatory
Classes common in the Department		Advanced Environmental Science and Technology	2	
		Special Lecture on Environmental Science and Technology I		1
		Special Lecture on Environmental Science and Technology II		1
		Special Lecture on Environmental Science and Technology III		1
		Special Lecture on Environmental Science and Technology IV		1
		Special Lecture on Environmental Science and Technology V		1
		Special Lecture on Environmental Science and Technology VI		1
		Special Lecture on Environmental Science and Technology VII		1
		Special Lecture on Environmental Science and Technology VIII		1
		Internship		90h
		Long Term Internship		135h

Regarding the Lecture of Research Ethics:

You need to attend the lecture of research ethics by e-learning system and so on during your study in the Faculty of Bioresources. This is a supplementary lecture to the main curriculum above.

### 3. Department of Life Sciences

Course	Field of Research	Class	Credits	
			Mandatory	Optional mandatory
Biochemistry and Biotechnology	Molecular and Cellular Biology	Advanced Molecular and Cellular Biology		2
		Seminar on Molecular and Cellular Biology		2
	Molecular Bioinformatics	Advanced Molecular Bioinformatics		2
		Seminar on Molecular Bioinformatics		2
	Biofunctional Chemistry Medicinal Chemistry	Advanced Biofunctional Chemistry		2
		Seminar on Biofunctional Chemistry		2
	Bioorganic Chemistry	Advanced Bioorganic Chemistry		2
		Seminar on Bioorganic Chemistry		2
	Regulatory Biochemistry	Advanced Regulatory Biochemistry		2
		Seminar on Regulatory Biochemistry		2
	Bioinformation and Food Engineering	Advanced Bioinformation and Food Engineering		2
		Seminar on Bioinformation and Food Engineering		2
	Food Chemistry	Advanced Food Chemistry		2
		Seminar on Food Chemistry		2
	Applied Microbiology	Applied Microbiology		2
		Seminar on Applied Microbiology		2
	Applied Microbial Genetics	Advanced Microbial Genetics and Biotechnology		2
		Seminar on Microbial Genetics		2
	Nutritional Chemistry	Advanced Nutritional Chemistry		2
		Seminar on Nutritional Chemistry		2
	Fermentation Biology	Advanced Microbiology in Food Production		2
		Seminar on Fermentation Biology		2
	Common classes	Thesis Research in Biochemistry and Biotechnology I	4	
		Thesis Research in Biochemistry and Biotechnology II	6	
		Advanced Biochemistry and Biotechnology I	2	
		Advanced Biochemistry and Biotechnology II	2	

### 3. Department of Life Sciences

Course	Field of Research	Class	Credits	
			Mandatory	Optional mandatory
Marine Life Science and Molecular Chemistry	Marine Biochemistry	Advanced Biochemistry of Marine Resources		2
		Seminar on Biochemistry of Marine Resources		2
	Utilization of Aquatic Bioresources Molecular Chemistry and Aquatic Materials	Advanced Utilization for Aquatic Bioresources		2
		Seminar on Utilization for Aquatic Bioresources		2
	Biophysical Science	Advanced Biopolymer Science		2
		Seminar on Biopolymer Science		2
	Muscle Biology	Advanced Structural Analysis of Biological Macromolecules		2
		Seminar on Structural Analysis of Biological Macromolecules		2
	Marine Microbiology	Advanced Biochemistry of Marine Microbiology		2
		Seminar on Microbiology of Marine Resources		2
	Quality in Marine Products	Advanced Quality of Marine Products		2
		Seminar on Quality of Marine Products		2
	Marine Food Chemistry	Advanced Marine Food Chemistry		2
		Seminar on Marine Food Chemistry		2
	Common classes	Special Research of Marine Life Science and Molecular Chemistry I	4	
		Special Research of Marine Life Science and Molecular Chemistry II	6	
		Advanced Marine Life Science and Molecular Chemistry	2	

### 3. Department of Life Sciences

Course	Field of Research	Class	Credits		
			Mandatory	Optional mandatory	
Marine Biology	Biological Oceanography	Advanced Biological Oceanography		2	
		Seminar on Biological Oceanography		2	
	Fish Physiology	Advanced Physiology of Aquatic Animals		2	
		Seminar on Physiology of Aquatic Animals		2	
	Phycology	Advanced Phycology		2	
		Seminar on Phycology		2	
	Shallow Sea Aquaculture	Advanced Study in Shallow Sea Aquaculture		2	
		Seminar on Shallow Sea Aquaculture		2	
	Fish Diseases	Advanced Study in Fish Diseases		2	
		Seminar on Fish Diseases		2	
	Fish Stock Enhancement	Advanced Fish Culture		2	
		Seminar on Advanced Fish Culture		2	
	Marine Ecology	Advanced Marine Ecology		2	
		Seminar on Marine Ecology		2	
	Aqua Genetics	Advanced Fisheries Biology		2	
		Seminar on Fisheries Biology		2	
	Molecular Ecology of Aquatic Animals	Advanced Molecular Ecology of Aquatic Animals		2	
		Seminar on Molecular Ecology of Aquatic Animals		2	
	Fish Population Dynamics	Advanced Fish Population Dynamics		2	
		Seminar on Fish Population Dynamics		2	
	Fisheries Ethology	Advanced Fisheries Ethology		2	
		Seminar on Fisheries Ethology		2	
	Development and Metabolism Biology	Advanced fisheries Developmental and Metabolism Biology		2	
		Seminar on Fisheries Developmental and Metabolism Biology		2	
	Common classes	Thesis Research in Marine Biology I		4	
		Thesis Research in Marine Biology II		6	
		Advanced Aquatic Biology			2
		Seminar on Ichthyology			2
Advanced Marine Biology			2		
Classes common in the Department	Special Lecture on Life Science I			2	
	Special Lecture on Life Science II			2	
	Internship			90h	
	Long Term Internship			135h	

Regarding the Lecture of Research Ethics:

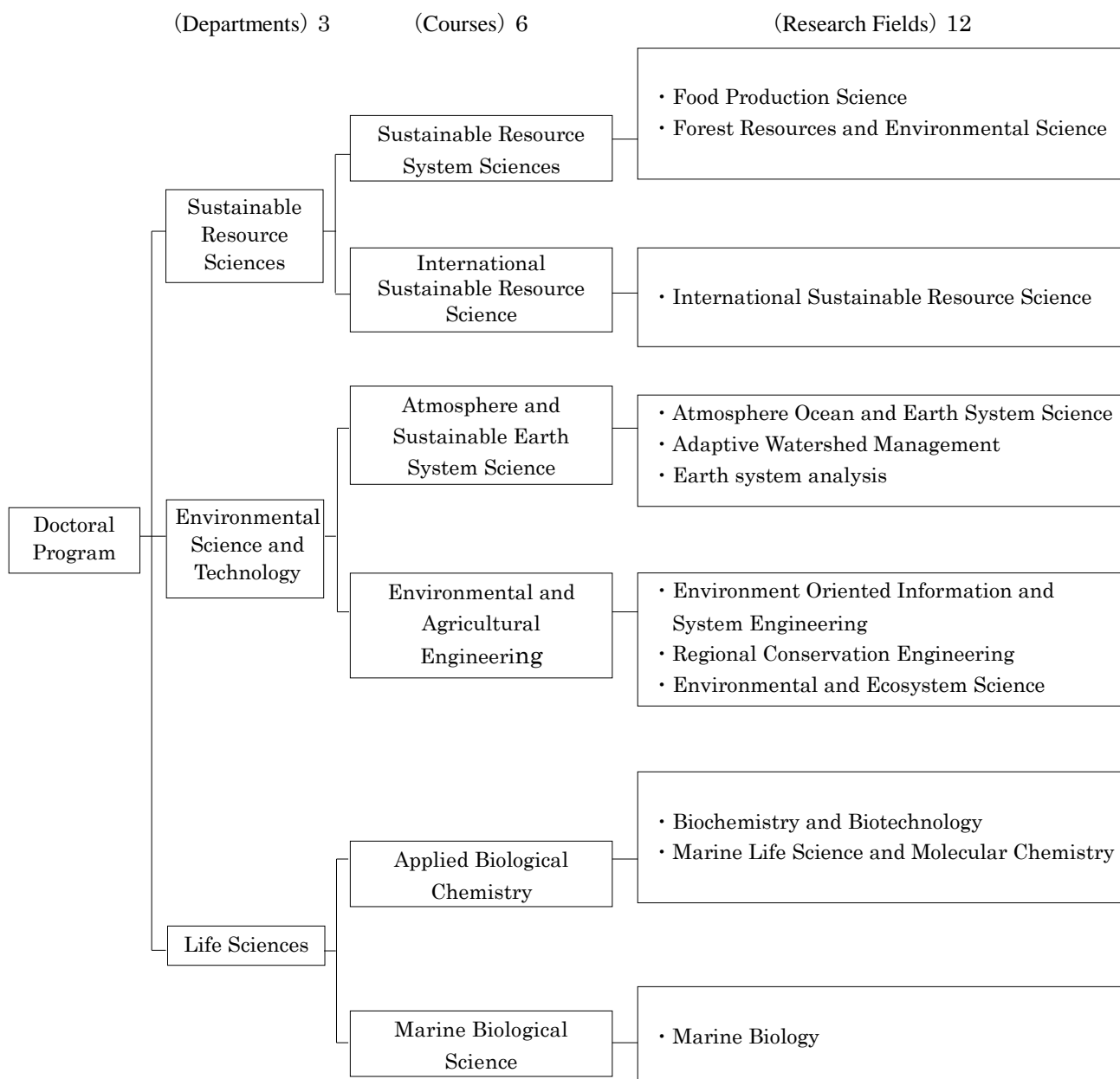
You need to attend the lecture of research ethics by e-learning system and so on during your study in the Faculty of Bioresources. This is a supplementary lecture to the main curriculum above.



# **OVERVIEW OF THE DOCTORAL PROGRAM**

# I . Organization of the Doctoral Program

This Graduate School consists of 3 Departments, 6 Courses and 12 Research Fields



## **Outline of Departments and Courses**

### **Department of Sustainable Resource Sciences**

Our lifestyles, which are based on the mass production, mass consumption, and mass disposal of foods and things we use that are made from oil energy, which have expanded greatly in the second half of the twentieth century, may be convenient and comfortable, but on the other hand, they are causing severe issue with global warming and food shortages. This department is composed of the following two courses, which provide a research and education system to foster both comprehensive and applied abilities. To do this, we use a foundation of instruction in the basics, especially food production, the effective use of bioresources, and the construction of social systems. Our aim is to tackle solutions to 21st century food and environmental issues, and bring about a recycling society.

### **Sustainable Resource System Sciences Course**

As the world's population continues to increase, humanity will be required to use the planet's limited resources sustainably. Maintaining the sustainability of food production in particular will not be limited to supplying us with fresh, tasty food; it will play a major role in the conservation of the global environment and the reuse of bioresources. In addition, forests contain roughly 90% of terrestrial bioresources, so we need sustainable use of bioresources such as wood and molecular materials produced from forests, as well as the conservation of the biodiversity and habitat of the life within them. In this course, we shall examine sustainable resource system sciences, which have developed from a basis in agrobiolgy and forest resources and environmental science, from a range of new perspectives. We shall seek out ways to solve global food issues, sustainably use bioresources that include the multifaceted functions of forests, and to help sustain forest ecologies that are formed through a rich, diverse range of life.

### **International Sustainable Resource Science Course**

We carry out research and education to use unique local assets appropriately in rural villages around Japan and the world, with the aim of creating sustainable socio-economic development. Specifically, we emphasize fieldwork, providing education and research on socio-economic fields with the aim of constructing a social system to achieve sustainable use of local resources. We also carry out education and research related to practical utilization technology for regional resources targeted at developing nations in particular, on a foundation of biology.

## **Department of Environmental Science and Technology**

This department aims to understand the earth and its biosphere, made up of all the different ecosystems around the planet and to construct a sustainable life production system which harmonizes human activities and ecosystems. To make this possible, we carry out research and education on comprehensive scientific methods that encompass agriculture, science, and engineering, rooted in meteorology, environmental science, and ecology, looking at global ecosystems with their complex interactions among the land, sea, and air. In addition, we provide the latest in research and education, with reference to fieldwork, in order to understand the systems of environmental change and climate change by comprehending these complex systems mathematically, so we can respond to the various issues faced by humanity and human society that are linked with these.

## **Atmosphere and Sustainable Earth System Science Course**

Changes in the earth's environment such as climate changes and abnormal weather work in concert with ecological environmental systems and earth systems that are made up of the atmosphere, the oceans, the soils, plants, the hydrosphere, the ecosphere, and the activities of humans and other animals. We conduct research on the basic structures, change processes, symbiotic relationships, and interactions that make up these systems, such as weather, the water cycle, the ocean cycle, evolution of the earth, climate and terroir, topography, conservation of the global environment, the physiological ecology and ecological harmonization of flora and fauna, and human activities, all with reference to observation, measurement, experimentation, investigation, remote sensing, and numerical analysis. We provide education and research to train people who can use the new scientific knowledge gained from this research and the thinking and practical skills learned through research to give them perspective on the future of the earth and the human race, allowing them to contribute to the creation of the next-generation culture and construct a sustainable society, and be active around the world, tackling them on a global stage.

### **Environmental and Agricultural Engineering Course**

In this course, aiming for the creation and conservation of a rich environment, we use advanced scientific and engineering methods to solve issues regarding the environment and agricultural and fishery industries, with the goal of contributing to regional development with a global perspective. Environment information science uses the measurement, control, and systems engineering of environmental information, with information processing technology at its core, and building on a foundation of knowledge related to bioecology. Regional Conservation Engineering is designed to create a rich, safe, secure regional environment for rural regions. Ecosystem Recycling Systems Engineering covers the material recycling system and food system of the ecosystems, including the natural environment and human society, as well as environmental conservation technology. In addition, we provide research and education to develop people who can contribute to the growth of sustainable societies that are rooted in the region.

## **Department of Life Sciences**

Department of Life Sciences aims to build the basic scientific theories related to the life sciences overall as well as a field of study related to the development, conservation, and management of marine bioresources, and to instruct the students through the practical education. Therefore, in this department, we carry out research and education in order to allow individual students to learn the research skills required for research in the life sciences, as well as to understand basic theory related to the life phenomena of bioresources at the ecosystem, community, population, individual, organ, cell, and molecular levels. This department is composed of the two courses of Applied Biological Chemistry and Marine Biological Science. The education and research carried out by each is shown below.

### **Applied Biological Chemistry Course**

In this course, we clarify the physiological functions and structures of molecules produced by terrestrial and marine life, including animals, plants, algae, microorganisms, and a wide range of other bioresources using the strategy of bioscience and biotechnology in order to effectively utilize their nutritional component or bioactive substances. Using these results, we aim to establish a new basic and applicable technological system for the development of new functional molecules or foods, or environmental technology. Furthermore, we carry out advanced research and education from the perspectives of chemistry, biochemistry, molecular biology, and bioengineering, with a focus on research into the gene expression mechanisms of animals and microorganisms, the physiological functions of plant and animal cells, bio-information sensing and processing technologies, improvements of food functionality, and the maintenance of health and quality of life, as well as the development of technologies for using unutilized bioresources.

### **Marine Biological Science Course**

In this course, our research field is the hydrosphere, with a focus on the oceans but also including lakes and rivers and other fresh water areas. We also look at everything in them, from plankton to algae, crustaceans, shellfish, fish, and marine mammals. We aim to understand the workings of these diverse life forms at the genetic, cellular, individual, community, and ecosystem levels. The methods we use include genetic analysis, physiological ecological analysis, collective analysis, behavioral analysis, and using marine observation technologies. Moreover, we also carry out research and education on the conservation of marine and freshwater ecosystems and biodiversity, and on methods to sustainably reproduce and effectively utilize marine bioresources such as fish, shellfish, algae and so on. We also aim to enrich human life by the stable use of bioresources through the appropriate management of them as a resource, and effective increase and farming methods for them.

## **II. Features of Our Education and Research**

### **1 Education and research guidance**

This graduate school is noted for education and research guidance that both polishes the students' academic specializations in their specific fields of study, and also cultivates a comprehensiveness that is underpinned by insight founded on wide-ranging, comprehensive science.

- (1) The abilities to carry out specialist research are developed through research into specific topics under the guidance of a research supervisor.
- (2) Relevant specialist knowledge is deepened through lectures on related specialist topics in the course the student belongs to.
- (3) Students learn research skills and experiment techniques in their fields through advanced experiments or seminars in seminar format in courses directly related to their research topic.
- (4) By taking subjects held in other courses or departments oriented to learning interdisciplinary specialist knowledge related to bioresources and the development of thinking and the ability to expand on matters logically, and through taking advanced or general seminars, students are able to improve their overall abilities.
- (5) Comprehensive research and education are ensured through mastering cutting-edge science and technology in the field of bioresources over a wide range, through special advanced investigative research based around fieldwork and observational experiments in education and research facilities attached to the department.
- (6) We are working to improve our capacity to promote research and the expansion and revitalization of research fields through making use of advanced facilities and technology under the research and education guidance provided by affiliated professors and associate professors in our affiliated institutes, the Forestry and Forest Products Research Institute, the NARO Institute of Vegetable and Tea Science, and the National Research Institute of Aquaculture research institutions.

### **2 Course subjects**

#### **(1) Project research and research guidance**

In the doctoral course, the most useful way to improve specialist academic abilities and cultivate creative research abilities is specialist research conducted under the guidance of multiple faculty members on a specified research theme.

For that reason, the research guidance system uses one supervising professor, supplemented by two professors or associate professors, a total of three supervisors, to form a multiple supervisor system, and the supplemental faculty members can also be assigned from other departments or courses.

This allows for deep, detailed, and thorough research guidance on a one-to-one basis, as well as an education from a wider perspective.

#### (2) Advanced seminars

In carrying out research in specialist fields, taking advanced seminars in fields that are directly connected is extremely important in fostering qualitative improvements in unique specializations while avoiding the adverse effects of a loss of perspective or narrowed vision due to overly specialized research.

This is why seminar-style classes worth four credits are required to be taken as the advanced seminars.

#### (3) Advanced experiments

In order to master a wide range of the latest scientific equipment and experimentation technology, regardless of experiments related to direct research issues in the student's specialization, students select and enroll in classes for experiments held using a wide range of affiliated research institutes.

#### (4) Specialist lectures

Each department and course holds classes in subjects in its specialization, but in order to deepen specialist academic knowledge, students are required to select between two and four credits from subjects (Class I) held in the course to which their supervising professor belongs.

In addition, in order to cultivate a wider perspective and the ability to expand and apply this, students are required to select between two and four credits from subjects (Class II) held in other courses within their department or in other departments.

#### (5) Advanced lectures

In the doctoral program of our Graduate School, in order to widen perspectives and increase comprehensive research abilities, subjects in broader fields or interdisciplinary fields, in addition to even more specialist subjects, are held as "advanced lectures," and students are required to select from two to four credits from these.

Advanced lectures include plant molecular and cellular biology, nutrition science for bioresources, sustainable global system theory, and advanced life science.

#### (6) Advanced investigative research

In order to gain the abilities to plan research and learn the methods and technologies for wide-ranging investigative research and set interdisciplinary research themes, students are required to take "Advanced investigative research" using the affiliated Field Science Center of Kii Kuroshio Life Area (Farm Station, Forest Station, Fishery Research Station) and the Seisui Maru training ship.



### III. How to Enroll for Subjects

#### 1 Course name

The names of each department and course are shown in VI.

#### 2 Credit standards

Lectures (specialist lectures, advanced lectures)	15 hours	1 credit
Seminars	30 hours	1 credit
Experimental/investigative research	45 hours	1 credit

#### 3 How to enroll

The course classifications and credits required for graduation are as follows.

Classification		Outline	Number of credits
Thesis Research		Research guidance from multiple faculty members	No credits (compulsory)
Special Seminar		Seminar-style classes in fields directly related to the research topic	4 credits (compulsory)
Special Laboratory Works		Experiments in affiliated research institutes, etc.	1 credit (elective)
Specialist Lectures	Class I	Subjects in the course the student is in	Between 2 and 4 credits (required electives)
	Class II	Subjects in other courses within the student's department or in other departments	Between 2 and 4 credits (required electives)
Advanced Lectures		Subjects in wider or interdisciplinary academic fields	Between 2 and 4 credits (required electives)
Special Survey Research		Investigative research in interdisciplinary fields using affiliated research facilities, etc.	1 credit (compulsory)
Total			At least 14 credits

## **IV. Graduation Requirements and Degrees**

### 1 Graduation requirements

#### (1) Through course completion (doctoral degree following course of study)

Students are required to spend at least three years in this graduate school (the Doctoral course) and obtain at least 14 credits from instruction by faculty members; in addition, they are required to have undertaken the necessary research guidance and to pass the examination for their graduate thesis and final defense conducted by this graduate school. However, students with especially meritorious research performance may be permitted to graduate after only one year.

#### (2) Through thesis submission (doctoral degree from thesis alone)

In addition to the previous stipulation, the University regulations permit that the doctoral degree may be awarded to those who have passed the examination of the graduate thesis held by this graduate school and who has been deemed as possessing at least the equivalent academic ability as a person who has completed the course requirements for the doctoral degree at this graduate school.

### 2 Types of degrees

The degree awarded shall be the degree of Doctor of Philosophy.

## **V. Thesis Research Plan and Screening Criteria**

### 1 Thesis research plan

Instruction for the graduate thesis shall be given in accordance with the following plan, based on the Mie University Graduate School Regulations.

#### (1) Research theme for graduate thesis

Students shall discuss their research themes and direction with their supervising professor.

#### (2) Graduate thesis

The thesis will be reviewed by an examination committee composed of the student's supervising professor (full professor) serving as chief examiner as well as at least two faculty members (professor) connected with the thesis serving as associate examiners.

However, when the supervising professor, etc. deems it necessary, full-time associate professors, lecturers, or affiliated instructors in the Graduate School may be included in the examination

committee as associate examiners. In addition, the examination committee shall require the student to submit to a written or oral defense of the thesis topic and other related subjects.

(3) Examination schedule and procedures

Refer to the Examination Schedule for Doctoral Theses and the Examination Procedure Guidelines on the Graduate School website for the schedule and procedures for examination.

2 Graduate thesis examination standards

The thesis will be assessed through the thesis examination and final defense (written or oral) on the following points, after which the decision on whether to pass it will be made through a comprehensive evaluation of these results.

Examination points

(1) Has the student mastered sufficient basic and specialist knowledge for a Doctoral degree in the relevant field?

(2) In the submitted thesis, have the background, position, and purpose of the research in the relevant field been clearly noted and are they appropriate for a graduate thesis?

(3) Have appropriate research methods and/or experiment plans be prepared for the set research theme, and have valid considerations been made regarding the obtained results?

(4) Are the contents of the thesis (main body, figures, tables, cited literature, etc.) both sufficient and appropriate, and is there a consistent logical structure throughout that leads to the conclusion?

(5) From a theoretical or empirical point of view of the relevant research field, does the thesis have any novelty or value as a graduate thesis?

(6) Does the mastery of foreign languages related to the comprehension of the literature required in order to carry out the research reach a sufficient level?

3 Publication through use of the graduate thesis website

With the promulgation of the ministerial ordinance partially amending the degree regulations (MEXT Ministerial Ordinance No. 5 of 2013) on March 11, 2013, and its enforcement as of April 1, 2013, the Mie University Degree Regulations have been amended as follows.

According to this, those who were granted degrees on or after April 1, 2013, are required to publish their doctoral theses in their entirety on the internet through registration in the Mie University Institutional Repository.

However, when unavoidable circumstances prevent the publication of the doctoral thesis, then, with the permission of the University President, a precis of the contents may be published on the internet in place of the whole. In either case, the entirety of the doctoral thesis shall be sent from Mie University to the National Diet Library, where as a rule it shall be available for reading and copying.

Note that even when publication of the precis only is permitted, when the unavoidable circumstances no longer apply, the entirety of the doctoral thesis must be published on the internet.

Reference (Articles 14 & 15, Mie University Degree Regulations)

Publication of the doctoral thesis abstract

Article 14

1. The University shall publish through the use of the website specified by the University an abstract of the contents of the thesis for award of the relevant doctoral degree (hereafter, “the doctoral thesis”) and the results of the examination within three months of the day the relevant doctoral degree was awarded.

Publication of the doctoral thesis

Article 15

1. Those who have been awarded a doctoral degree shall publish the entirety of their doctoral thesis within one year from the date the relevant doctoral degree was awarded. However, this shall not apply to those have published their thesis before award of the relevant doctoral degree.

2. Notwithstanding the provisions in the previous paragraph, those who have been awarded a doctoral degree may, when unavoidable circumstances dictate, and with the permission of the University President, publish a precis of said doctoral thesis instead of its entirety. In this event, the University President shall permit those requiring the entire thesis to read said thesis.

3. The publication stipulated in Paragraph 2 above shall use the website specified by the University.

## VI. Subjects per Departments and Courses

### 1. Department of Sustainable Resource Sciences

Course	Class	Credits	
		Mandatory	Optional mandatory
Sustainable Resource System Sciences	• Analytical Science of Genetic Information		2
	• Crop Production Science		2
	• Physiology on Fruit Growth and Development		2
	• Stress Physiology for Horticultural Crops		2
	• Animal Nutrition and Physiology		2
	• Applied Grass and Feed Science		2
	• Systematic and evolutionary mycology		2
	• Functional ecology of insects		2
	• Comparative Vegetable Genomics		2
	• Forest Dynamics and Management		2
	• Forest Microbial Ecology		2
	• Plant Physiology		2
	• Torrent and Hillside Dynamics and Conservation		2
	• Forest Engineering and Information		2
• Chemical Conversion of Phytomaterials		2	
• Material Science of Wood and Lignocellulosic Polymers		2	
International Sustainable Resource Science	• Economics and Sociology for Agriculture and Resources		2
	• Resource Management and Sociology		2
	• Theory of the Development Economics of Bioresources		2
	• Ecophysiology of Economic Plants		2
	• Plant Biology		2
	• Special Lecture Plant Molecular and Cellular Biology		2
	Nutrition Science for Bioresources		2
	Sustainable earth system		2
	Advanced Life Science		2
	• Thesis Research		—
	• Special Seminar	4	
	• Special Laboratory Works		1
	• Special Survey Research	1	

Regarding the Lecture of Research Ethics:

You need to attend the lecture of research ethics by e-learning system and so on during your study in the Faculty of Bioresources. This is a supplementary lecture to the main curriculum above.

## 2. Department of Environmental Science and Technology

Course	Class	Credits	
		Mandatory	Optional mandatory
Atmosphere and Sustainable Earth System Science	• Ocean Circulation Theory		2
	• Advanced Theory of Forest Environmental Policy		2
	• Bio-Environmental Conservation in Estuarine Coastal Area		2
	• Use of Field and Weather Informations for Agricultural Structures		2
	• Applied Lecture on Nature and Coexistence		2
	• Solid-earth Science		2
	• Landscape Assessing and Managing		2
Environmental and Agricultural Engineering	• Utilization of Biomass		2
	• System Design Engineering		2
	• Biomaterial Process Engineering		2
	• Applied Energy Engineering		2
	• Soil Resources Development and Conservation		2
	• Bio-Environmental Soil		2
	• Design and Planning of Facilities for Agricultural Production		2
	• International Environmental Conservation Engineering		2
	• Biological and Food Process Engineering		2
	• Soil Physics and Hydrology		2
	• Special Lecture		
	Plant Molecular and Cellular Biology		2
	Nutrition Science for Bioresources		2
	Sustainable earth system		2
	Advanced Life Science		2
	• Thesis Research		—
	• Special Seminar	4	
	• Special Laboratory Works		1
• Special Survey Research	1		

Regarding the Lecture of Research Ethics:

You need to attend the lecture of research ethics by e-learning system and so on during your study in the Faculty of Bioresources. This is a supplementary lecture to the main curriculum above.

### 3. Department of Life Sciences

Course	Class	Credits	
		Mandatory	Optional mandatory
Applied Biological Chemistry	• Molecular Life Sciences		2
	• Physical Biochemistry		2
	• Reaction Mechanism of Bioactive Compound		2
	• Applied Natural Products Chemistry		2
	• Molecular Structure and Function		2
	• Biochemical and Food Engineering		2
	• Applied Carbohydrate Chemistry		2
	• Microbial Biotechnology		2
	• Applied Protein Chemistry and Engineering		2
	• Microbiology in Food Production		2
	• Functional Biochemistry of Marine Resources		2
	• Analytics of Biofunctional Substances		2
	• Modification of Food Consistency		2
	• Functional Analysis of Biological Macromolecules		2
	• Functional Marine Microbiology		2
	• Applied Chemistry of Microorganisms and Microbiological Chemistry		2
• Biofunctional Glycotechnology		2	
• Physiological Function of Food		2	
Marine Biological Science	• Aquatic Primary Production		2
	• Physiology and Behavior of Fish		2
	• Sensory Biology of Aquatic Animals		2
	• Fish Infectious Pathology		2
	• Seaweed Ecology		2
	• Seed Production Technology		2
	• Reproductive Biology of Aquatic Animals		2
	• Fish Stock Enhancement Ecology		2
	• Aquatic Ecology		2
	• Aquatic Zoology		2
	• Molecular Ecology in Aquaculture		2
	• Fish Population Dynamics		2
	• Fishing Technology and Systems		2
	• Fish Biology		2
• Developmental and Metabolism Biology of Aquatic Organism		2	

Course	Class	Credits	
		Mandatory	Optional mandatory
	<ul style="list-style-type: none"> <li>• Special Lecture</li> <li style="padding-left: 20px;">Plant Molecular and Cellular Biology</li> <li style="padding-left: 20px;">Nutrition Science for Bioresources</li> <li style="padding-left: 20px;">Sustainable earth system</li> <li style="padding-left: 20px;">Advanced Life Science</li> <li>• Thesis Research</li> <li>• Special Seminar</li> <li>• Special Laboratory Works</li> <li>• Special Survey Research</li> </ul>	      4   1	  2 2 2 2 —  1

Regarding the Lecture of Research Ethics:

You need to attend the lecture of research ethics by e-learning system and so on during your study in the Faculty of Bioresources. This is a supplementary lecture to the main curriculum above.



# **RELATED PROVISIONS**

# **I. Regulations of the Graduate School of Bioresources**

## REGULATIONS OF THE GRADUATE SCHOOL OF BIORESOURCES, MIE UNIVERSITY

(Enacted April 1, 2004)

### Purpose

Article 1 Matters related to the Graduate School of Bioresources, Mie University (hereafter, “the Graduate School”) are, in addition to those stipulated in the Mie University Graduate School Regulations and the Mie University Degree Regulations, as stipulated in these Regulations.

### Purpose of the Graduate School

Article 1-2 The Graduate School is designed to cultivate advanced, high-level engineers and researchers with deep specialist knowledge, goal-achieving abilities, and interdisciplinary and creative perspectives through the development of research and education that considers harmony with nature as it tackles its main issues of the production and use of bioresources connected with food, housing, and clothing, as well as the conservation and restoration of the environment, and to actively return these academic and technological results back to community while establishing and developing bioresources science.

### Purpose of the Master’s Course

Article 1-31. The Master’s Course is designed to educate students in advanced theory and techniques for fields related to bioresources science, such as food production, the conservation and restoration of the natural environment, humans living in harmony with nature, biomass energy, and the utilization of the life functions of bioresources, training specialist technicians with a rich academic knowledge and broad perspectives. In addition, with the aim of cultivating people with the basic abilities of researchers, the aims of each department are as stipulated in Paragraphs 2 to 4 below.

2. Sustainable Resource Sciences is designed to cultivate specialist technicians who can contribute to overall judgment, anticipatory insight, policy planning, and management through integrating natural science and social science information and knowledge, contributing to the construction of local symbiotic systems between nature and humanity, and effective, safe, secure recycling systems to allow human lives, culture, and lifestyles to be maintained sustainably.

3. Environmental Science and Technology is designed to cultivate advanced specialist technicians who can respond to environmental issues on all levels, from the global to the local, contributing to the development of bioresource production sites and the sustainable use of said bioresources with a view to appropriate coexistence between human activities and the natural environment, and the furtherance of advanced scientific principles and technology related to the conservation of the

natural environment.

4. Life Sciences is designed to cultivate specialist technicians with the ability to gain insight into the various issues regarding life sciences from a broad perspective as well as the practical abilities required to solve problems with the aim of investigating issues such as the development and management of bioresources, use of various biotic functions and functional biocomponents, and environmental response of organisms. It is also designed to contribute to the development of applied technologies and the quest for basic scientific theories related to the life sciences.

#### Purpose of the Doctoral Course

Article 1-41. The Doctoral Course is designed to cultivate researchers and technicians who will investigate theories and technologies of bioresource science, including the development of bioresources, the conservation and restoration of the biosphere and the environment, and the application of production functions, and have advanced, leading-edge specialist abilities, a deep academic knowledge, and a broad perspective. To that end, the aims of each department are as specified in Paragraphs 2 to 4 below.

2. Sustainable Resource Sciences is designed to cultivate specialist researchers and technicians with advanced specialist abilities and a broad academic knowledge through the basic and related information and knowledge of an interdisciplinary melding of the sciences and humanities related to sustainable resources, contributing to the construction of local symbiotic systems between nature and humanity, and effective, safe, secure recycling systems using bioresources.

3. Environmental Science and Technology is designed to cultivate specialist researchers and technicians with a broad perspective and rich creativity who can contribute to the creation of new technologies and advanced scientific theories, and contribute to the development of technology and the establishment of advanced and practical theories in order to preserve or restore the environment at a range of levels, aiming for harmony between human activities and the natural environment in regard to the production and use of bioresources.

4. Life Sciences is designed to cultivate advanced specialist researchers and technicians who can play an active role in bioscience fields such as the effective use of bioresources and their functions or the preservation of habitats, contributing to the development of cutting-edge techniques and the construction of advanced scientific theories on bioresource life phenomena such as the structure and function of biological organs, biomolecules, and genes as well as the physiological/ecological and molecular biological biocharacteristics of bioresources.

#### Selection of Students

Article 21. The selection of students for the Master's Course or the Doctoral Course is to be done comprehensively through academic testing, grade certificates, and so on.

2. The selection methods, timing, etc. for the previous paragraph will be determined by the Graduate School Faculty Committee.

#### Supervising Professors

Article 31. Supervising professors will be appointed to provide guidance for education, research, and thesis creation in the Graduate School.

2. The supervising professors shall be full professors responsible for the Graduate School. However, if needed, associate professors may also be appointed.

#### Subjects and Credits

Article 4 The subjects and credits in each department in this Graduate School are specified in Attached Table 1 for the Master's Course and Attached Table 2 for the Doctoral Course.

#### Enrollment Method

Article 51. Students will follow the guidance of the supervising professor for subjects in each department, and must obtain at least 30 credits in the Master's Course in accordance with the methods stipulated in Attached Table 1 or at least 14 credits in the Doctoral course in accordance with the methods stipulated in Attached Table 2.

2. When the supervising professor deems it necessary, students can be required to take classes in other departments or graduate schools.

3. Credits obtained through the regulation in the previous paragraph can be included in the required number of credits.

4. Special cases related to the taking of courses by students in the Master's Course are stipulated separately.

#### Submission of Class Enrollment

Article 6 Students must submit the subjects/classes they wish to enroll in to the Graduate School Dean by the specified deadline.

#### Certification of Credit Acquisition

Article 7 Certification of credits for each subject shall be done by the faculty member in charge of each subject through examination or research reports.

#### Examinations

Article 8 Examinations will be carried out at the end of the semester in which the subject is offered, and will be either written or oral. However, examinations may be carried out at the appropriate time

for each subject.

#### Make-up Examinations

Article 9 When students are unable to take the regular examination for unavoidable reasons such as illnesses, etc., they may take a make-up examination upon request.

#### Grades

Article 10 Grades for each subject taken will be assessed using the letter AA, A, B, C, or D, with AA, A, B, and C being considered as passing grades.

#### Qualifications for Submission of the Graduate Thesis

Article 11. Students in the Master's Course and who have obtained or are expected to obtain the 30 course credits stipulated in Attached Table 1 may submit a graduate thesis by the specified date.

2. Students in the Doctoral Course and who have obtained or are expected to obtain the 14 course credits stipulated in Attached Table 2 may submit a graduate thesis by the specified date.

3. Notwithstanding the provisions in the previous paragraphs, those who apply for conferral of the degree in accordance with Article 45 of the Mie University Graduate School Regulations may submit a graduate thesis.

4. The qualifications, etc., for those in the previous paragraph are stipulated separately.

#### Final Examination

Article 12. The final examination for the Master's Course and the Doctoral Course will be held for those who have submitted a graduate thesis having obtained the required credits and the required research guidance.

2. The final examination will be done in each department, focused on the graduate thesis, and be either written or oral.

#### Readmission and Transference

Article 13 Selection of students seeking readmission or transference will be done by the Graduate School Faculty Committee in accordance with the Mie University Graduate School Regulations.

#### Additional Regulations

Article 14 In addition to these Regulations, any necessary matters related to the Graduate School shall be determined by the Graduate School Faculty Committee.

#### Supplementary Provision

1 These Regulations shall come into force from April 1, 2004.

2 The provisions then in force shall remain applicable for those entering the graduate school in or prior to 2003 in regard to the prescriptions in Article 4 and Article 5 of the Regulations.

Supplementary Provision (regulated April 1, 2005)

1 These Regulations shall come into force from April 1, 2005.

2 The provisions then in force shall remain applicable for those entering the graduate school in or prior to 2004 regardless of the prescriptions in Attached Table 1 of the Regulations post-revision.

Supplementary Provision (regulated March 27, 2006)

1 These Regulations shall come into force from April 1, 2006.

Supplementary Provision (regulated March 30, 2007)

1 These Regulations shall come into force from April 1, 2007.

2 The provisions then in force shall remain applicable for those entering the graduate school in or prior to 2006 regardless of the prescriptions in Article 10 of the Regulations post-revision.

Supplementary Provision (regulated April 1, 2008)

1 These Regulations shall come into force from April 1, 2008.

2 The provisions then in force shall remain applicable for those entering the graduate school in or prior to 2007 regardless of the prescriptions in Attached Table 1 of the Regulations post-revision.

## **II. Bylaws for Degree Examination in the Master's Course at the Graduate School of Bioresources**

Bylaws for degree examination in the Master's Course at the Graduate School of Bioresources at Mie University.

(Enacted December 12, 2007)

### **Purpose**

Article 1 Matters related to the examinations for the degree in the Regulations for the Master's Course in the Graduate School of Bioresources at Mie University (hereafter, "the Master's Course Regulations") are, in addition to the Mie University Graduate School Regulations (hereafter, "the Graduate School Regulations"), the Mie University Degree Regulations and the Mie University Graduate School of Bioresources Regulations, regulated in these Bylaws.

### **Qualification Requirements for Submission of the Graduate Thesis**

Article 2 Those who wish to undergo the examination for the graduate thesis (hereafter, "prospective graduates") are limited to those who have obtained the required number of credits or are definitely expected to do so, and who have also undergone the required research guidance.

### **Period for Submission of the Graduate Thesis**

Article 31. The graduate thesis is to be submitted while the student is enrolled at the University, and shall be by the specified date in January of the second year for those who enrolled in April and by the specified deadline in July of the second year for those who enrolled in October. However, those who have remained in the University beyond the standard number of years or those who have shown meritorious grades as regulated in the provision in Paragraph 1, Article 36 of the Graduate School Regulations and are expected to graduate early (hereafter, "meritorious students") may submit at any point.

2. Those who are scheduled to take a leave of absence or who are taking a leave of absence are not able to submit a graduate thesis.

### **Meritorious Students**

Article 41. Meritorious students refers to those who have been enrolled in their course for one or more years and are definitely expected to obtain the required credits, and who have meritorious grade results during their time at the University, and who also are acknowledged by the department heads committee as having achieved research results at or above the standard of the Master's degree.

2. Those who are expected to complete the graduation requirements for a Special Education Program

recognized by the Graduate School as being beneficial for education may be treated as meritorious students based on their research results, etc., during their enrollment as well as their performance in the Special Education Program subjects.

#### Procedures for Submission of the Graduate Thesis

Article 5 Prospective graduates shall submit the following documents to the Dean of the Graduate School following approval by their supervising professor.

1. Graduate Thesis Application (including the thesis contents list, thesis abstract). 1 copy
2. Graduate thesis (3 copies)

#### Examination Committee

Article 61. The Graduate School Faculty Committee shall establish an examination committee for each prospective graduate.

2. The examination committee will be organized as a committee with one chief examiner and two or more associate examiners.
3. The chief examiner shall be the supervising professor of the prospective graduate in question.
4. The associate examiners shall be assigned from the professors, associate professors, or lecturers responsible for the Master's Course related to the relevant graduate thesis, or faculty from affiliated graduate schools.
5. In addition to the regulations in the previous paragraph, it shall be possible to include faculty members from other graduate schools or research institutions or from other graduate schools within Mie University.
6. When examiners other than those from this Graduate School are included in accordance with the previous paragraph, qualifications shall be examined at the relevant department.

#### Examination and Final Defense of the Thesis

Article 71. The examination committee will determine whether the thesis passes or fails following an examination of the submitted graduate thesis and a final defense.

2. The final defense shall require the student to submit to a written or oral defense of the thesis topic and other related subjects.
3. The examination criteria for the thesis examination and the final defense shall be as specified separately.
4. The examination committee must complete the thesis examination and final defense by the specified date, and the chief examiner must report the results of the thesis examination and final defense to the Graduate School Dean, accompanied by an outline of the examination of the thesis.



#### Public Presentation of the Thesis

Article 81. The Graduate School Dean shall cause the prospective graduates to make a public presentation (hereafter, “public presentation of the thesis”) of their graduate thesis in the Graduate School.

2. The public presentation of the thesis shall be carried out by each department and shall be through an oral presentation as a rule.

#### Publication, Storage, and Binding of the Master’s Thesis

Article 91. Prospective graduates must submit their Master’s thesis along with their written agreement to its publication after the examination is completed to the Graduate School Dean by the specified date.

2. The relevant Master’s thesis will be kept in the University Library as a rule. However, if there are special reasons, it shall be kept by the supervising professor.

3. The binding costs for the copy of the Master’s thesis to be stored in the University Library shall be borne by the relevant research and education field.

#### Graduation Approval

Article 10The Graduate School Faculty Committee will determine the graduates following a graduation assessment, based on the report in Paragraph 4, Article 7.

#### Miscellaneous Provisions

Article 11Any necessary matters related to the degree examination that are not stipulated in these Bylaws shall be determined at a meeting of the Graduate School Faculty Committee.

#### Supplementary Provision

These Bylaws shall come into force from April 1, 2005.

#### Supplementary Provision

These Bylaws shall come into force from September 8, 2010.

#### Supplementary Provision

These Bylaws shall come into force from February 13, 2013.

### **III. Bylaws for Degree Examination in the Doctoral Course at the Graduate School of Bioresources**

Bylaws for degree examination in the Doctoral Course at the Graduate School of Bioresources at Mie University.

(Enacted April 1, 2004)

#### Chapter 1 General Provisions

##### Purpose

Article 1 Matters related to the examinations for the degree in the Regulations for the Doctoral Course in the Graduate School of Bioresources at Mie University (hereafter, “the Doctoral Course Regulations”) are, in addition to the Mie University Graduate School Regulations (hereafter, “the Graduate School Regulations”), the Mie University Degree Regulations (hereafter, “the Regulations”) and the Mie University Graduate School of Bioresources Regulations, regulated in these Bylaws.

#### Chapter 2 Degree Examination for Approval of Graduation from the Doctoral Course

##### Qualification Requirements for Submission of the Graduate Thesis

Article 2 Those who wish to undergo the examination for the graduate thesis (hereafter, “prospective graduates”) in order to be approved for graduation from the Doctoral Course in accordance with Paragraph 1, Article 5 of the Regulations are limited to those who have obtained the required number of credits or are definitely expected to do so, and who have also undergone the required research guidance.

##### Period for Submission of the Graduate Thesis

Article 3 The graduate thesis is to be submitted while the student is enrolled at the University, and shall be by the specified date in January of the third year for those who enrolled in April and by the specified deadline in July of the third year for those who enrolled in October.

However, those who have remained in the University beyond the standard number of years or those who have shown meritorious research results as regulated in the provision in Paragraph 2, Article 36 of the Graduate School Regulations may submit at any point.

##### Procedures for Submission of the Graduate Thesis

Article 4 Prospective graduates shall submit the following documents to the Dean of the Graduate School following approval by their principal supervising professor.

- (1) Request for Graduate Thesis Examination      1 copy
- (2) Graduate thesis                                      Number to be submitted (the number of examiners in the examining committee)
- (3) Thesis contents list                                1 copy
- (4) Thesis abstract                                      1 copy
- (5) Curriculum vitae                                    1 copy
- (6) Academic publications, etc.                    (enough for additional increases after the preliminary examination and for increases for the main examination)

Acceptance of the Graduate Thesis

Article 5 When there is a submission of a graduate thesis in accordance with the previous paragraph, the Dean of the Graduate School shall determine whether or not to accept it, following its referral to the Graduate School Faculty Committee, where the decision for acceptance or rejection shall be made following an explanation by the principal supervising professor.

Public Presentation of the Thesis

Article 61. The Graduate School Dean shall cause the prospective graduates to make a public presentation (hereafter, “public presentation of the thesis”) of their graduate thesis in the Graduate School.

- 2. The public presentation of the thesis stipulated in the previous paragraph is stipulated separately.

Examination Committee

Article 71. The Graduate School Faculty Committee shall establish an examination committee for each prospective graduate.

- 2. The examination committee will be organized as a committee with one chief examiner and two or more associate examiners.
- 3. The chief examiner and the associate examiners for the examination committee will be selected from among the members of the Graduate School Faculty Committee. In this event, in principle one of the associate examiners will be selected from the same department as the chief examiner.
- 4. In addition to the regulations in the previous paragraph, it shall be possible to include faculty members from outside the Graduate School Faculty Committee.
- 5. When an external examination committee member is to be included in the thesis examination committee, a review of their qualifications will be done by the departmental heads committee following approval by said department, and, if the qualifications are deemed appropriate, the proposed member shall be included and submission of the following documentation solicited.

- (1) Curriculum vitae (short form), research record, etc.

(2) If for someone in charge of a doctoral course in the Graduate School, the CV should clearly note this fact.

In this event, the research record may be omitted.

(3) The research record should include about ten papers related to the graduate thesis topic, which are arranged by the chief examiner in a list.

(4) There shall be no restrictions on age, as specialist fields may be required, but in principle it is to be preferred to select an examiner who is not retired.

#### Examination and Final Defense of the Thesis

Article 81. The examination committee must complete the thesis examination and final defense while the prospective graduate is enrolled in the University and report the results in writing to the Graduate School Faculty Committee.

2. The final defense shall require the student to submit to a written or oral defense of the thesis topic and other related subjects.

3. The examination criteria for the thesis examination and the final defense shall be as specified separately.

#### Graduation Approval

Article 91. The Graduate School Faculty Committee will deliberate based on the report in Paragraph 1 of the preceding article and determine by vote whether the candidate shall pass or fail.

2. Those who were enrolled in the Doctoral Course for at least three years and have obtained the required credits, and who have left the University following the required research guidance, will be awarded the doctoral degree for completion of the course if they submit their thesis within one year of the date following the date of their departure from the University and pass the thesis examination and final defense within the same period.

#### Conferral of the Degree, etc.

Article 10 The timing for conferral of the degree on those who have passed the graduate thesis examination and final defense, and been approved to graduate, is shown in the following items.

(1) Those who have passed within the standard enrollment period (save for those who passed in accordance with the provision in Paragraph 2 of Article 36 of the Graduate School Regulations):

At the end of the academic year (March for April enrollments, September for October enrollments)

(2) Others: March, July, September, or December (save for special cases)

#### Chapter 3 Degree Examination Through Submission of the Graduate Thesis

### Qualification Requirements for Submission of the Graduate Thesis

Article 111. Those who can apply for conferral of the degree by submitting a graduate thesis in accordance with the provisions of Paragraph 2, Article 5 of the Regulations (hereafter, “candidates”) are those falling under one of the following.

- (1) Those who have been enrolled in the Doctoral Course for at least three years and have obtained the required number of credits.
  - (2) Those who have graduated from a master’s course at a graduate school and have at least four years of research history.
  - (3) Those who have graduated as an undergraduate from a university and have at least seven years of research history.
  - (4) Those who are deemed to have an equivalent research history to any of those above.
2. The research history in the previous paragraph is stipulated separately.

### Procedures for Submission of the Graduate Thesis

Article 121. When a candidate applies for examination of their graduate thesis, the following documents need to be appended and submitted, along with the graduate thesis examination fee, to the University President via the Graduate School Dean following approval from the faculty member recommending the thesis (hereafter, “the recommending professor”). However, the graduate thesis examination fee will be waived for those who have been enrolled in the Doctoral Course for at least the specified length of time and obtained the required credits before leaving the University but who have applied for the degree within a year of leaving.

- |   |  |
|---|--|
| (1) Degree Application Form   | 1 copy   |
| (2) Graduate thesis   | Number to be submitted (the number of examiners in the examining committee)                                    |
| (3) Thesis contents list  | 1 copy   |
| (4) Thesis abstract   | 1 copy   |
| (5) Curriculum vitae  | 1 copy   |
| (6) Academic publications, etc.   | (enough for additional increases after the preliminary examination and for increases for the main examination) |
| (7) Graduation Certificate (or certificate of course completion or of the acquired credits) from the last school attended | 1 copy   |
| (8) Research history certificate  | 1 copy   |

2. The graduation thesis in the previous paragraph is to be submitted within the specified period.

### Qualifications Examination Committee

Article 131. The qualifications examination for candidates submitting theses is done by the

department heads committee from a review of the CV, thesis contents list, research history certificate, final school graduation certificate, and so on.

2. A qualifications examination committee will be formed in the relevant department prior to the qualifications examination in the previous paragraph, consisting of at least three professors, and will report the examination results to the department heads committee following an examination prior to approval of the establishment of the preliminary examination committee.

3. Notwithstanding the provisions in Paragraph 1, this will be waived for those who have been accepted by the Japan Society for the Promotion of Science's Ronpaku (Dissertation PhD) Program.

#### Acceptance of the Graduate Thesis

Article 14 When there is a submission of a graduate thesis in accordance with Article 12, the Dean of the Graduate School shall determine whether or not to accept it, following its referral to the Graduate School Faculty Committee, where the decision for acceptance or rejection shall be made following an explanation by the recommending professor regarding the contents, etc. of the graduation thesis.

#### Public Presentation of the Thesis

Article 15 The Graduate School Dean shall cause the candidate to present the graduate thesis publicly.

#### Examination Committee

Article 16.1. The Graduate School Faculty Committee shall establish an examination committee for each candidate.

2. The examination committee will be organized as a committee with one chief examiner and two or more associate examiners.

3. The chief examiner and the associate examiners for the examination committee will be selected from among the members of the Graduate School Faculty Committee. In this event, in principle one of the associate examiners will be selected from the same department as the chief examiner.

4. In addition to the regulations in the previous paragraph, it shall be possible to include faculty members from outside the Graduate School Faculty Committee.

5. When an external examination committee member is to be included in the thesis examination committee, a review of their qualifications will be done by the departmental heads committee following approval by said department, and, if the qualifications are deemed appropriate, the proposed member shall be included and submission of the following documentation solicited.

(1) Curriculum vitae (short form), research record, etc.

(2) If for someone in charge of a doctoral course in the Graduate School, the CV should clearly note this fact.

In this event, the research record may be omitted.

(3) The research record should include about ten papers related to the graduate thesis topic, which are arranged by the chief examiner in a list.

(4) There shall be no restrictions on age, as specialist fields may be required, but in principle it is to be preferred to select an examiner who is not retired.

#### Examination of the Thesis and Confirmation of Academic Ability

Article 171. The examination committee must complete the thesis examination and confirmation of academic ability within one year of the date the graduate thesis is received, and report the results in writing to the Graduate School Faculty Committee.

2. The confirmation of academic ability is a confirmation that the candidate possesses the academic knowledge and research ability, in regard to their field of research, of or above the level of those who were granted the degree through completion of the Doctoral Course.

(1) An examination of the thesis topic and other related subjects will be carried out either in writing or orally. In this event, two foreign languages will be required in principle.

(2) A foreign language examination committee (hereafter, “the examination committee”) will be established in each department for each candidate.

(3) The examination committee will be composed of, in principle, the department head, the department deputy head, and the chief examiner.

(4) The examination committee will determine the types of foreign language and examination method, and report the results of the examination to the Graduate School Dean.

3. Notwithstanding the provisions in the previous paragraph, those falling under Paragraph 1 (1) in Article 11 shall take an examination that complies with the final defense as regulated in Paragraph 2 of Article 8 in place of the questioning when the graduate thesis is submitted within three years from the date of leaving the University.

4. The examination criteria for the thesis examination and the confirmation of academic ability shall be as specified separately.

#### Determining Conferral of Degree

Article 181. The Graduate School Faculty Committee will deliberate based on the report in Paragraph 1 of the preceding article and determine by vote whether the candidate shall be awarded the degree.

#### Timing for Conferral of Degree

Article 19 The timing for the conferral of the degree for those who have passed the examination of their graduate thesis and had their academic ability confirmed shall be, save for special cases, March,

July, September, or December.

#### Chapter 4 Miscellaneous Provisions

##### Supplemental Rules

Article 20 The matters required for implementation of these Bylaws shall be separately stipulated.

##### Supplementary Provision

These Bylaws shall come into force from April 1, 2004.

##### Supplementary Provision

These Bylaws shall come into force from April 1, 2006.

##### Supplementary Provision

These Bylaws shall come into force from July 11, 2007.

##### Supplementary Provision

These Bylaws shall come into force from April 1, 2009.

##### Supplementary Provision

These Bylaws shall come into force from April 1, 2015.

##### Supplementary Provision

These Bylaws shall come into force from June 8, 2016.



## **IV. Arrangements for Degree Examination in the Doctoral Course at the Graduate School of Bioresources**

Graduate School of Bioresources, Mie University  
Arrangements for Degree Examination in the Doctoral Course

(Enacted April 1, 2004)

### Preliminary Examination

Article 11. Those submitting a graduation thesis under the provisions of Article 4 and Article 12 of the bylaws for degree examination in the Doctoral course at the Graduate School of Bioresources at Mie University (hereafter, “the Bylaws”) must undergo a preliminary examination of their thesis’s suitability.

2. Those hoping to undergo the preliminary examination (hereafter, “the preliminary exam candidates”) must submit the following documents to their principal supervising professor or recommending professor (hereafter, “principal supervising professor, etc.”).

(1) Preliminary Examination Application (Form 1, provided separately). No.: [Number of preliminary examination committee members] + 1

(2) Thesis for preliminary examination (A4 size, portrait format, horizontal writing). No.: [Number of preliminary examination committee members]

(3) Thesis Contents List (Form 2, provided separately). No.: [Number of preliminary examination committee members] + 1

(4) These abstract (not more than 1,000 words) No.: [Number of preliminary examination committee members] + 1

(5) Academic papers, etc. No.: [Number of preliminary examination committee members] + 1

3. Recommending professors according to the provisions in Article 12 of the Bylaws and in the preceding paragraph shall be professors responsible for education in the Doctoral Course.

4. The thesis for preliminary examination in Paragraph 2.(2) shall be the thesis for the conferral of the degree or the thesis draft.

5. The department head shall establish a preliminary examination committee (hereafter, “the committee”) for each preliminary exam candidate following consultation with the principal supervising professor, etc.

6. The committee shall be made up of the principal supervising professor, etc. and two other professors for a total of at least three members. However, when the supervising professor, etc. deems it necessary, full-time associate professors or lecturers in the Graduate School, or affiliated instructors in affiliated graduate schools, may be included in the committee.

7. The committee shall have a chair, who shall be the principal supervising professor, etc.
8. The results from Paragraph 1 must be reported by the chair to the Graduate School Dean via the department head in the form of the preliminary examination report (Form 3, provided separately) and a summary of the results of the preliminary examination (Form 4, provided separately).
9. On receipt of the report in the previous paragraph, the Graduate School Dean shall, notwithstanding the provisions of Articles 5 and 14 of the Bylaws, assign this to the department heads committee where the decision to accept the thesis will be made and then the permission of the Graduate School Faculty Committee obtained.
10. Those who are scheduled to take a leave of absence or who are taking a leave of absence are not able to submit a graduate thesis or undergo the examination.

#### Students With Meritorious Research Achievements

Article 2 Those who have meritorious research results in accordance with the provisions of Paragraph 2, Article 36 of the Mie University Graduate School Regulations are those who have especially meritorious grades during their enrollment and possess advanced research capabilities and a rich academic knowledge, and fall under the following.

- (1) The contents of their graduate thesis must include papers which have been published (or accepted for publication) in major international Western academic journals. However, if the paper in question is a jointly authored paper, then the candidate must be the first author and the written agreements of the other authors for the paper to be the candidate's graduate thesis must be attached.
- (2) The student must have at least three published papers.
- (3) There must be a recommendation from the principal supervising professor.

#### Graduate Thesis and Other Matters

Article 3 The appropriateness as a graduate thesis done in order to certify completion of the course shall be that at least two academic papers which form its contents have been published or accepted for publication in peer-reviewed academic journals or academic journals of an equivalent standing. If the thesis has been submitted within three years from the time the candidate has completed the course requirements and gained the necessary credits then left the university, the acceptance certificate shall be recognized when submitted for the full examination as well.

2. The appropriateness as a graduate thesis done through submission of a thesis shall be that at least three academic papers which form its contents have been published or accepted for publication in peer-reviewed academic journals or academic journals of an equivalent standing. The acceptance certificate must be attached when applying for the preliminary examination.
2. If the paper in Paragraph 2 above is jointly authored, then the candidate must be the first author and the written agreements of the other authors must be attached as a rule. However, if a joint author

has died or cannot be located and the written agreement not provided, the matter shall be dealt with on the responsibility of the principal supervising professor.

4. When the papers in Paragraph 3 are joint papers with multiple persons being treated as the first author and the academic journals or equivalent publications that the paper is published in clearly indicate that, then for one only, it is possible to include this in the number of papers that need to have been published or accepted. However, it must be able to be confirmed that the other multiple authors are not incorporating that same paper as their main paper for application for the degree.

5. The decision on whether it applies to the academic journals as stipulated in Paragraphs 1 and 2 must be evaluated by the preliminary examination committee and the results reported to the department heads committee.

6. Notwithstanding Paragraph 2, when a person who left the Graduate School after obtaining the required number of credits submits a graduate thesis within three years, Paragraph 1 shall apply.

7. The graduate thesis abstract is to be in Japanese if the author is a Japanese national. (This applies even if the thesis itself is written in a foreign language.) International students may write this in English.

8. The thesis contents list must include the academic papers only for which the candidate was the first author in order of their publication, and papers being submitted or prepared to be submitted may not be included. (Oral presentations are not admissible.)

9. The binding costs for graduate theses to be stored in the University Library shall be, for course candidates, borne by the relevant research and education field, and for those using thesis submission alone, borne by the candidate.

#### Public Presentation of the Thesis

Article 41. The public presentation of the thesis as stipulated in Paragraph 2, Article 6, and Article 15 of the Bylaws must be done before the examination of the graduate thesis is completed.

2. The Graduate School Dean shall confer with the principal supervising professor, etc. with regard to the implementation of the public presentation of the thesis in the previous paragraph.

#### Research History

Article 5 The research history as stipulated in Paragraph 2, Article 11 of the Bylaws should be those items listed below, and when the applicant is other than a full-time faculty member at this University, and who has been given sufficient guidance and advice by the recommending professor, it is preferable for them to be enrolled as a research student, etc.

(1) The period while engaged in research as a full-time faculty member at a university or graduate school.

(2) The period while engaged in research as a research student at a university or graduate school.

- (3) The period while enrolled as a graduate student.
- (4) The period while engaged in research as a researcher for a government ministry or agency, or private company, etc.
- (5) Other periods as approved by the department heads committee.

#### Handling When the Full Examination is Incomplete

Article 6 When the full examination process for those stipulated in Articles 4 and 12 of the Bylaws will not be completed in whole or part by the time scheduled for the conferment of the degree due to unexpected accidents, etc., and the relevant thesis examination committee deems it unavoidable, the matter shall be handled as follows.

1. Continue the examination for the unexamined portion in line with the next date of degree conferral. However, no changes will be permitted to the thesis in this event.

2. The periods until the completion of the ongoing examination are as follows.

(1) Those as stipulated in Article 4 of the Bylaws:

While enrolled or within one year after they left the University having obtained the necessary credits.

(2) Those as stipulated in Article 12 of the Bylaws:

Within one year of the date on which the thesis was accepted for the full examination.

3. The results of the examination shall be, in principle, given as “Pass,” “Fail,” or “Examination Incomplete.”

#### Appendix

These arrangements shall be implemented from April 1, 2004.

#### Appendix

These arrangements shall be implemented from April 1, 2006.

#### Appendix

These arrangements shall come into force from December 6, 2006, and implemented from April 1, 2006.

#### Appendix

These arrangements shall be implemented from January 10, 2007.

#### Appendix

These arrangements shall be implemented from February 13, 2013.

## V. Graduate School Grade Assessment Guidelines

### Mie University Graduate School Grade Assessment Guidelines

#### 1. Premise of the grade assessment guidelines

The Mie University Graduate School grade assessment guidelines are designed to ensure the standards and substantiation as graduate school education through the stipulation of grade assessment standards, assessment methods, etc. to use as guidelines.

#### 2. Grade assessment, marks, assessment details standards

Grade assessment, marks, and assessment details standards are set as follows.

Judgment	Mark	Score	Judgment	Assessment standard	Listing in grades report	Listing in grades transcript
Pass	95-100 points	10	AA	Has mastered the subject contents and achieved the targets with merit.	Listed	Listed
	90-94	9				
	80-89	8	A	Has learned the subject contents and adequately achieved the targets.	Listed	Listed
	70-79	7	B	Has learned the subject contents and generally achieved the targets.	Listed	Listed
	60-69	6	C	Has learned the subject contents and achieved the required minimum targets.	Listed	Listed
Fail	Under 60 points	5 or lower	D	Is not considered to have learned the subject contents and has not achieved the targets.	Listed	Not listed

NB: Subjects where credit approval alone is done will be shown as Pass, Fail, or Approved.

NB: The grade reports will, in principle, list the scores and the grade transcripts the judgments.

### 3. Assessment methods

Grade assessment will be done from selecting as many as possible from among attendance, participation in reports and presentations, study records, reports, exams, and other diverse elements, as suitable for the format, targets, and contents of the individual subjects.

### 4. Reflection of learning outcomes

Efforts will be made to reflect learning outcomes appropriately in grade assessment, such as the appropriate reflection of learning outcomes obtained through lectures or study preparation in order to attend lectures in report project settings and exam contents.

### 5. Ensuring awareness of grade assessment standards and methods

The standards and methods for grade assessment in individual subjects shall be clearly presented in the syllabus as well as explained with regard to the targets to achieve in each class. The relationship between the targets to achieve and the assessments in particular will be explained specifically based on the class contents.

### 6. Assessment of the Graduate Thesis

In accordance with the Graduate Thesis Examination Standards stipulated elsewhere.

### 7. Accountability

Questions and inquiries from students regarding grade assessment shall be responded to appropriately.

### Supplementary Provision

These guidelines shall be implemented from April 1, 2007. However, the assessment categories shall apply to those who enter the graduate school from the 2007 academic year, and the previous four-category assessment shall apply to students who entered prior to that.

## The Sansui Hall



The Sansui Hall which was built in August, 1936 is the oldest building in Kamihama Campus of Mie University. So, it has been registered as a cultural asset.

Once, this building was managed as an accommodation for visiting lecturers and other visitors, and it was supported by donation from the graduates of Mie University (erstwhile Mie Higher Agricultural and Forestry School). It is, currently, being utilized for meetings and other beneficial purposes.

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