The example of process of completion of Disease Mechanism Course (Master's Program)

- **Disease Mechanism Course (Master's Program)　Conferred academic degree: Master of Disease Mechanism**

The advanced professionals in the fields of medical sciences and medical care who contribute to prevention and treatment of diseases.
Expected places of employment.　Companies: pharmaceuticals , medical devices , health care , clinical development. Public servants : Ministry of Health, Labour and Welfare, Ministry of Education, Culture, Sports, Science and Technology, Ministry of Economy, Trade and Industry , local public servants, independent administrative agencies.

A study model for the students with the aims of becoming advanced professionals in exploration division at pharmaceutical companies.

The students will study common subjects including medicine and drug discovery, specialized basic knowledge on the law important in commercialization and specialized basic knowledge of the other related fields toward innovation as well as specialized knowledge on the basic medical sciences including molecular and cellular biology of the disease. The students will acquire skills in finding and solving problems, experimental techniques and report writing through molecular and cellular biological approaches using animals and cells.

	Subjects	Required credits	Year 1 Spring	Year 1 Fall	Year 2 Spring	Year 2 Fall
A degree: Master of Disease Mechanism	Common subjects	15	• Introduction to Medicine (1) • Introduction to Drug Discovery (1) • Regulatory Science (1) • Introduction to Natural History (1) • Practices in Life Science Innovation (1.5) • CITI：Research Ethics (e-learning) (1)	• Introduction to Food Science (1) • Introduction to Bioresource (1) • Intellectual Property Management (1) • Team Learning in Life Science Innovation (1.5) • Life Science Innovation Seminar (1)	• Business Development in Pharmaceuticals and Food (1) • Bioinformatics (1) • Internships I (1)	-
	Graduate General Education Courses Program (required [elective])	3	Applied Ethics (1), Research Management Skills (1), English Presentations (1)		-	-
	Specialized subjects (required)	12	Life Science Innovation Master's Special Seminar I (2) Life Science Innovation Master's Special Research I (4)		Life Science Innovation Master's Special Seminar II (2) Life Science Innovation Master's Special Research II (4)	
	Specialized subjects (required [elective])	5	• Advances in Cellular Regulation (1) • Basic Bone Biology (1) • Molecular & Cellular Biology of disease I (1)	• Prominent Discoveries in Neuroscience (1)	• Molecular & Cellular Biology of disease II (1)	-
	Total	More than 35	9.5	15.5	4	6
			Determination of supervising faculty (~Jul)	Submission of research proposal（Oct） Mid-term presentation 1 and evaluation of level of achievement（Jan）	Mid-term presentation 2 and evaluation of level of achievement（Jul）	Submission of master thesis（Jan） Final examination (Feb) The conferment of degree (Mar)

The example of process of completion of Drug Discovery Course (Master's Program)

- **Drug Discovery Course (Master's Program). Conferred academic degree: Master of Medical Science**

The advanced professionals in the fields of drug discovery who contribute to development of innovative pharmaceuticals.
Expected places of employment. Companies: pharmaceuticals , medical devices, clinical development, cosmetics. Public servants : Ministry of Health, Labour and Welfare, Ministry of Education, Culture, Sports, Science and Technology, Ministry of Economy, Trade and Industry , local public servants, independent administrative agencies.

A study model for the students with the aims of becoming advanced professionals in division of medicinal chemistry at pharmaceutical companies.

The students will study common subjects including medicine and drug discovery, specialized basic knowledge on the law important in commercialization and specialized basic knowledge of the other related fields toward innovation as well as specialized knowledge on the drug discovery sciences including medicinal chemistry and organic chemistry. The students will acquire skills in finding and solving problems, experimental techniques and report writing through experiments of synthesis of low molecular weight compounds based on structural analysis of the disease target molecules.

	Subjects	Required credits	Year 1 Spring	Year 1 Fall	Year 2 Spring	Year 2 Fall
A degree: Master of Medical Science	Common subjects	15	• Introduction to Medicine (1) • Introduction to Drug Discovery (1) • Regulatory Science (1) • Introduction to Natural History (1) • Practices in Life Science Innovation (1.5) • CITI：Research Ethics (e-learning) (1)	• Introduction to Food Science (1) • Introduction to Bioresource (1) • Intellectual Property Management (1) • Team Learning in Life Science Innovation (1.5) • Life Science Innovation Seminar (1)	• Business Development in Pharmaceuticals and Food (1) • Bioinformatics (1) • Internships I (1)	-
	Graduate General Education Courses Program (required [elective])	3	Applied Ethics (1), Research Management Skills (1), English Presentations (1)		-	-
	Specialized subjects (required)	12	Life Science Innovation Master's Special Seminar I (2) Life Science Innovation Master's Special Research I (4)		Life Science Innovation Master's Special Seminar II (2) Life Science Innovation Master's Special Research II (4)	
	Specialized subjects (required [elective])	5	• Medicinal chemistry/Pharmacology (1) • Organic Chemistry/Chemical Biology (1)	• Drug Design Engineering (1)	• Translational Science in Drug Discovery (1) • Drug Discovery Research & Project Management (1)	-
	Total	More than 35	8.5	15.5	5	6
			Determination of supervising faculty (~Jul)	Submission of research proposal（Oct) Mid-term presentation 1 and evaluation of level of achievement（Jan）	Mid-term presentation 2 and evaluation of level of achievement（Jul)	Submission of master thesis（Jan) Final examination (Feb) The conferment of degree (Mar)

The example of process of completion of Food Innovation Course (Master's Program)

- **Food Innovation Course (Master's Program). Conferred academic degree: Master of Food Innovation**

The advanced professionals in the fields of food science who contribute to human health through development of innovative functional foods. Expected places of employment. Companies: pharmaceuticals , cosmetics, food, chemical/bio industries. Public servants : Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, local public servants, independent administrative agencies.

A study model for the students with the aims of becoming advanced professionals in division of functional food development at food companies.

The students will study common subjects including Introduction to Food Science and Introduction to Bioresourse, specialized basic knowledge on the law important in commercialization and specialized basic knowledge of the other related fields toward innovation as well as specialized knowledge on the food sciences including Food Functionality and Food Process Engineering. The students will acquire skills in finding and solving problems, experimental techniques and report writing through molecular and cellular biological research of novel functional ingredients in food using animals and cells.

	Subjects	Required credits	Year 1 Spring	Year 1 Fall	Year 2 Spring	Year 2 Fall
A degree: Master of Food Innovation	Common subjects	15	• Introduction to Medicine (1) • Introduction to Drug Discovery (1) • Regulatory Science (1) • Introduction to Natural History (1) • Practices in Life Science Innovation (1.5) • CITI：Research Ethics (e-learning) (1)	• Introduction to Food Science (1) • Introduction to Bioresource (1) • Intellectual Property Management (1) • Team Learning in Life Science Innovation (1.5) • Life Science Innovation Seminar (1)	• Business Development in Pharmaceuticals and Food (1) • Bioinformatics (1) • Internships I (1)	-
	Graduate General Education Courses Program (required [elective])	3	Applied Ethics (1), Research Management Skills (1), English Presentations (1)		-	-
	Specialized subjects (required)	12	Life Science Innovation Master's Special Seminar I (2) Life Science Innovation Master's Special Research I (4)		Life Science Innovation Master's Special Seminar II (2) Life Science Innovation Master's Special Research II (4)	
	Specialized subjects (required [elective])	5	• Food Business (1) • Nutritional genomics (1)	• Food Functionality (1) • Food Process Engineering (1)	• Food Security (1)	-
	Total	More than 35	8.5	16.5	4	6
			Determination of supervising faculty (~Jul)	Submission of research proposal（Oct） Mid-term presentation 1 and evaluation of level of achievement（Jan）	Mid-term presentation 2 and evaluation of level of achievement（Jul）	Submission of master thesis（Jan） Final examination (Feb) The conferment of degree (Mar)

The example of process of completion of Environmental Management Course (Master's Program)

- **Environmental Management Course (Master's Program). Conferred academic degree: Master of Environmental Management**

The advanced professionals in the fields of environmental science who contribute to solution of the energy and environment problems through development, conservation and management of the innovative environmental resources.

Expected places of employment. Companies: think tank, energy development, manufacturing industries, construction, pharmaceuticals. Public servants : Ministry of the Environment, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, local public servants, independent administrative agencies.

A study model for the students with the aims of becoming advanced professionals in division of new energy at think tank.

The students will study common subjects including Introduction to Natural History and Introduction to Bioresourse, specialized basic knowledge on the law important in commercialization and specialized basic knowledge of the other related fields toward innovation as well as specialized knowledge on the environmental sciences including Environmental Algology and Biomass Science. The students will acquire skills in finding and solving problems, investigation and report writing through fieldworks and internships at the bioenergy industries.

	Subjects	Required credits	Year 1 Spring	Year 1 Fall	Year 2 Spring	Year 2 Fall
A degree: Master of Environmental Management	Common subjects	15	• Introduction to Medicine (1) • Introduction to Drug Discovery (1) • Regulatory Science (1) • Introduction to Natural History (1) • Practices in Life Science Innovation (1.5) • CITI：Research Ethics (e-learning) (1) • Internships I (1)	• Introduction to Food Science (1) • Introduction to Bioresource (1) • Intellectual Property Management (1) • Team Learning in Life Science Innovation (1.5) • Life Science Innovation Seminar (1) • Internships II (1)	• Business Development in Pharmaceuticals and Food (1) • Bioinformatics (1) • Internships III (1) • Internships IV (1)	-
	Graduate General Education Courses Program (required [elective])	3	Applied Ethics (1), Research Management Skills (1), English Presentations (1)		-	-
	Specialized subjects (required)	12	Life Science Innovation Master's Special Seminar I (2) Life Science Innovation Master's Special Research I (4)		Life Science Innovation Master's Special Seminar II (2) Life Science Innovation Master's Special Research II (4)	
	Specialized subjects (required [elective])	5	• Water Environment and Life Science (1) • Habitat and Functional Compound (1)	• Environmental Algology (1) • Biomass Science (1)	• Environmental Medicine (1)	-
	Total	More than 35	9.5	17.5	5	6
			Determination of supervising faculty (~Jul)	Submission of research proposal（Oct） Mid-term presentation 1 and evaluation of level of achievement（Jan）	Mid-term presentation 2 and evaluation of level of achievement（Jul）	Submission of report on specific subject research (Jan) Final examination (Feb) The conferment of degree (Mar)