Doctor Degree Program

Organic Agriculture Management and Innovative Agricultural Products

(International Program) (New curriculum, 2019)

Institution: Maejo University

Campus / Faculty: International College

Doctor of Philosophy Program in Organic Agriculture Management (International Program)

Full name: Doctor of Philosophy (Organic Agriculture Management and Innovative Agricultural Products)

Abbreviation: Ph.D. (Organic Agriculture Management)

Total numbers of credits studies throughout the curriculum

Plan A Type 1 48 credits

Plan A Type 2 48 credits

Format of the curriculum

The doctoral degree program is a 3 years study program or graduate within 6 semester and not more than 6 academic calendar.

Language used

All learning and teaching activities are taught in English

1. Education Management System

1.1 System

The Educational system of the International College, Maejo University uses a binary education system, 1 academic year is divided into 2 regular semesters, 1 regular semester, with a study period of not less than 15 weeks.

1.2 Summer Education Management

There are no learning and teaching activities in the summer.

2. Course operation

2.1 day - time for teaching and learning activities

First Semester June - October

Second Semester November - March

Summer April - May

Or according to the academic calendar of the university announced at that time

2.2 Qualifications of Applicants

Plan A Type 1

1) The Applicant must have graduated from a master's degree program or it's equivalent in the field of agriculture or other related fields from an educational institution recognized and certified by the Office of the Civil Service Commission, or an applicant with full experience in research or related work in the agricultural extension and community development for at least 3 year.

2) The applicant must be qualified according to Maejo University regulations on graduate education, according to related regulations and other announcements of the university, which is enforced at that time.

3) Other cases shall be at the discretion of the committee.

Plan A Type 2

1) The Applicant must have graduated from a master's degree program or it's equivalent in the field of agriculture or other related fields from an educational institution recognized and certified by the Office of the Civil Service Commission.

2) The applicant must be qualified according to Maejo University regulations on graduate education, according to related regulations and other announcements of the university, which is enforced at that time.

3) Other cases shall be at the discretion of the committee.

3. 3.1.1 Structure of the Curriculum

The curriculum structure is divided into subjects that correspond to those specified in the graduate program standards of the Ministry of Education. By dividing the structure into 2 types:

3.1.2.1 Plan A Type 1

1. Non-Credit courses	(12) credits
2. Dissertation	48 credits
Total credits throughout the curriculum	**48 credits**

3.1.2.2 Plan A Type 2

1. Non-credit courses	(12) credits
2. Major compulsory Course	6 credits
3. Major elective courses	6 credits
4. Dissertation	36 credits
Total credits throughout the curriculum	**48 credits**

Note ( ) are non-credit courses and they are evaluated in S or U

3.1.2 Courses in the curriculum

1) Plan A Type 1 **48 credits**

		Credits (Theory-Practical-Self-study)
1) Non-credit courses		**(12) credits**
OM 701	Research Methodology in Advanced Interdisciplinary Organic Agriculture Management	(3) (2–3–5)
OM 702	Organic Inputs for Organic Farming	(3) (2–3–5)
OM 791	Seminar 1	(1) (0–2–1)
OM 792	Seminar 2	(1) (0–2–1)
OM 793	Seminar 3	(1) (0–2–1)
OM 794	Seminar 4	(1) (0–2–1)
OM 795	Seminar 5	(1) (0–2–1)
OM 796	Seminar 6	(1) (0–2–1)

Note ( ) are non-credit courses and they are evaluated in S or U

2) Dissertation		**48 Credits**
OM 891	Dissertation 1	6 (0–12–0)
OM 892	Dissertation 2	6 (0–12–0)
OM 893	Dissertation 3	6 (0–12–0)
OM 894	Dissertation 4	6 (0–12–0)
OM 895	Dissertation 5	12 (0–36–0)
OM 896	Dissertation 6	12 (0–36–0)

Other courses that are non-credit in the curriculum

1. Foreign language courses according to the regulations of graduate school.
2. Course that are not major compulsory courses or major elective courses as approved by the lecturer responsible for the curriculum.
3. Basic courses for student that need to study improve their basic knowledge on the field of study without counting those credits, as approved by the lecturer responsible for the curriculum.

3.1.3 Plan A Type 2 **48 Credits**

Credit (Theory-Practical-Self-Study)

1) Non-credit courses **(12)** Credits

OM 701	Research Methodology in Advanced Interdisciplinary Organic Agriculture Management	(3) (2–3–5)
OM 702	Organic Inputs for Organic Farming	(3) (2–3–5)
OM 791	Seminar 1	(1) (0–2–1)
OM 792	Seminar 2	(1) (0–2–1)
OM 793	Seminar 3	(1) (0–2–1)
OM 794	Seminar 4	(1) (0–2–1)
OM 795	Seminar 5	(1) (0–2–1)
OM 796	Seminar 6	(1) (0–2–1)

Note ( ) are non-credit courses and they are evaluated in S or U

2) Major compulsory course **6 credits**

OM 703	Organic Farming and Processing Technology	3 (2–2–5)
OM 704	Innovative and High Precision Agriculture	3 (2–2–5)

3) Major elective course **6 credits**

Choose from major elective courses that corresponds to the dissertation In accordance with the approval of the lecturer responsible for the curriculum and it should not be less than 6 credits, however, they can be chosen across the course group

Credit (Theory-Practical-Self-Study)

<u>Technology courses</u>

OM 711	Organic Agriculture and Standard Regulation	3 (2–2–5)
OM 712	Innovation of Natural Products	3 (2–2–5)
OM 713	Agricultural Products, Agricultural Processing Products and Cosmetic Analysis	3 (2–2–5)
OM 714	Beekeeping in Organic Farming Management	3 (2–2–5)
OM 715	Advanced Cannabis Science	3 (2–2–5)

Business and entrepreneurship

OM 721	Modern Farm Business Management	3 (2–2–5)
OM 722	Startup Organic Agribusiness and Risk Management	3 (2–2–5)
OM 723	Techniques in Value Chain Creation of Organic Agricultural Products	3 (2–2–5)
OM 724	Entrepreneurial Management Strategy for Organic Agribusiness	3 (2–2–5)
OM 725	Digital Logistics Technology for Organic Agribusiness	3 (2–2–5)

4) Dissertation **48 Credits**

OM 891	Dissertation 1	6 (0–12–0)
OM 892	Dissertation 2	6 (0–12–0)
OM 893	Dissertation 3	6 (0–12–0)
OM 894	Dissertation 4	6 (0–12–0)
OM 895	Dissertation 5	12 (0–36–0)

Other courses that are non-credit in the curriculum

1. Foreign language courses according to the regulations of graduate school.
2. Course that are not major compulsory courses or major elective courses as approved by the lecturer responsible for the curriculum.
3. Basic courses for student that need to study improve their basic knowledge on the field of study without counting those credits, as approved by the lecturer responsible for the curriculum.

3.1.4 Study Plan

1) Plan A Type 1

First year/first semester

Code	Course	Credits	Theory	Practice	Self-study

OM 701	Research Methodology in Advanced Interdisciplinary Organic Agriculture Management	(3)	2	3	5
OM 791	Seminar 1	(1)	0	2	1
OM 891	Dissertation 1	6	0	12	0
Total		**6**	**2**	**17**	**6**

First year/second semester					
Code	**Course**	**Credits**	**Theory**	**Practice**	**Self-study**
OM 702	Organic Inputs for Organic Farming	(3)	2	3	5
OM 792	Seminar 2	(1)	0	2	1
OM 892	Dissertation 2	6	0	12	0
Total		**6**	**2**	**17**	**6**

Second year / first semester

Code	Course	Credits	Theory	Practice	Self-study
OM 793	Seminar 3	(1)	0	2	1
OM 893	Dissertation 3	6	0	12	0
Total		**6**	**0**	**14**	**1**

Second year / second semester

Code	Course	Credits	Theory	Practice	Self-study
OM 794	Seminar 4	(1)	0	2	1
OM 894	Dissertation 4	6	0	12	0
Total		**6**	**0**	**14**	**1**

Third year/ first semester

Code	Course	Credits	Theory	Practice	Self-study

OM 795	Seminar 5	(1)	0	2	1
OM 895	Dissertation 5	12	0	36	0
Total		**12**	**0**	**38**	**1**

Third year / second semester

Code	Course	Credits	Theory	Practice	Self-study
OM 796	Seminar 6	(1)	0	2	1
OM 896	Dissertation 6	12	0	36	0
Total		**12**	**0**	**38**	**0**

2) Plan A Type 2

First year / first semester

Code	Course	Credits	Theory	Practice	Self-study
OM 701	Research Methodology in Advanced Interdisciplinary Organic Agriculture Management	(3)	2	3	5
OM 702	Organic Inputs for Organic Farming	(3)	2	3	5
OM 703	Organic Farming and Processing Technology	3	2	2	5
OM 791	Seminar 1	(1)	0	2	1
Total		**3**	**6**	**11**	**16**

First year / second semester

Code	Course	Credits	Theory	Practice	Self-study
OM 704	Innovative and High Precision Agriculture	3	2	2	5
.....	Elective course	3	.....	.....	.....
OM 891	Dissertation 1	6	0	12	0
OM 792	Seminar 2	(1)	0	2	1
Total		**6**	.....	.....	.....

Second year / first semester

Code	Course	Credits	Theory	Practice	Self-study
OM.....	Elective course	3	.....	.....	.....
OM 793	Seminar 3	(1)	0	2	1
OM 892	Dissertation 2	6	0	12	0
Total		**9**	.....	.....	.....

Second year / second semester

Code	Course	Credits	Theory	Practice	Self-study
OM 794	Seminar 4	(1)	0	2	1
OM 893	Dissertation 3	6	0	12	0
Total		**6**	**0**	**14**	**1**

Third year / first semester

Code	Course	Credits	Theory	Practice	Self-study
OM 795	Seminar 5	(1)	0	2	1
OM 894	Dissertation 4	6	0	12	0
Total		6	0	14	1

Third year / second semester

Code	Course	Credits	Theory	Practice	Self-study
OM 796	Seminar 6	(1)	0	2	1
OM 895	Dissertation 5	12	0	36	0
Total		**12**	**0**	**38**	**1**

Dissertation Preparation Plan

1. Submit the dissertation topic within the 3rd semester of October 2024.
2. Take your dissertation proposal examination within the 3rd semester of October 2024
3. Schedule your dissertation defense examination within the 4th semester of March 2024.

*** Note: The said date and time shall be under Maejo University's announcement regarding the Graduate Studies Calendar.

Course Content and Course Description

1) Non-credit Basic compulsory courses /required courses

OM 701 Research Methodology in Advanced Organic Agriculture (3) (2-3-5)
Management

Prerequisite: As approved by program committee

Importance of research in advanced interdisciplinary organic agriculture management, step in research method, causes and selection of research topics, search and review of literatures related to a research, writing of a research proposal, experimental design and statistics, data collection and data analysis by statistic computer program, result presentation and interpretation and preparation of research presentation in the symposium and publication of research article in scientific journals.

(Lecture 2 hours, Practice 3 hours, Self Study 5 hours/week)

OM 702 Organic Inputs for Organic Production (3) (2-3-5)

Prerequisite: None

Concept, scope, importance, and innovation on animal and plant pest management, soil fertility management, application of biotechnology and utilization of beneficial microorganisms for promote organic plant, livestock and aquatic animal growth.

(Lecture 2 hours, Practice 3 hours, Self Study 5 hours/week)

OM 791 Seminar 1 (1) (0-2-1)

Prerequisite: None

Literature review, presentation and discussion of recent advances in various topics in organic agriculture management and related fields.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

OM 792 Seminar 2 (1) (0-2-1)

Prerequisite: None

Literature review, presentation and discussion of recent advances in various topics in organic agriculture management and related fields which are related to graduate student dissertation.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

OM 793 Seminar 3 (1) (0-2-1)

Prerequisite: None

Presentations of dissertation framework, dissertation progress. Discussion and reports on research study.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

OM 794 Seminar 4 (1) (0-2-1)

Prerequisite: None

Presentation and dissertation progress and discussion on research problems.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

OM 795 Seminar 5 (1) (0-2-1)

Prerequisite: None

Presentations of dissertation progress, discussion and report of research problems. Publication report concerning the recent research works.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

OM 796 Seminar 6 (1) (0-2-1)

Prerequisite: None

Presentations of dissertation progress, discussion and report of research problems. Publication report concerning the recent research works.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

OM 797 Seminar 7 (1) (0-2-1)

Prerequisite: None

Presentations of dissertation progress, discussion and report of research problems. Publication report concerning the recent research works.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

OM 798 Seminar 8 (1) (0-2-1)

Prerequisite: None

Presentations of dissertation progress, discussion and report of research problems. Publication report concerning the recent research works.

(Lecture 0 hour, Practice 2 hours, Self Study 1 hour/week)

Compulsory Courses

OM 703 Organic Farming and Processing Technology 3 (2-2-5)

Prerequisite: None

Application of agricultural high technologies research in the organic filed for crop production and cultivation, post- harvest technology for the export purpose, innovative technology in food processing, product development process, processing technology application of the prototype product.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 704 Innovative and High Precision Agriculture 3 (2-2-5)

Prerequisite: None

Application of intelligent agricultural information technology in organic agricultural production and management. Remote- sensing technology in surveying

agricultural resources, yield monitoring, computer software for precision agriculture, analysis and interpretation of maps, variable rate input.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 711 Organic Agriculture and Standard Regulation 3 (2-2-5)

Prerequisite: None

This course will provide the fundamentals of organic agriculture and standard regulation. The development from the organic principles to a global network of standards. Common requirement of private standards and regulations; different ways of inspection and certification; overview on most important private standards and labels; equivalence of standards between the big markets and comparison of global private standard IFOAM and the two most important state regulations (USA and EU).

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 712 Innovation of Natural Products 3 (2-2-5)

Prerequisite: None

Types and characteristics of different types of cosmetics, advantages and disadvantages of cosmetics made from chemicals and herbs, health supplements and beauty, cosmetics decided, proper cosmetic storage, adverse effects caused by improper use of cosmetics, advanced technology in cosmetic production, practice in cosmetic development, natural product for cosmetic, evaluation of physical properties, stability and efficiency in active ingredient delivery of cosmetic products.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 713 Agricultural Products, Agricultural Processing Products and Cosmetic Analysis 3 (2-2-5)

Prerequisite: None

Use of laboratory instruments ,basic knowledge for quality control in agricultural products and agricultural processing products, sampling techniques, principles and techniques in analysis, selection of analytical methods, compositional

analysis for agricultural products and agricultural processing products, analysis of food additives and contaminants in comply with food and agricultural product law.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 714 Beekeeping in Organic Farming Management 3 (2-2-5)

Prerequisite: None

Biodiversity of honey bees, bee behavior, colony development, bee enemies, develop and bee propagation, breeding of bees, honey bee production technology, value added of honey bee products, organic beekeeping farming-system, utilization of bee in the pollination of organic agriculture crop, organic honey bee product management and field trip.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 715 Advanced Canabis Science 3 (2-2-5)

Prerequisite: None

Botany of Cannabis, culture, bioactive compound, extraction and analytical techniques for bioactive compounds, processing, marketing and the application of Cannabis in the medicine, cosmetic and pharmaceutical industries.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 721 Modern Farm Business Management 3 (2-2-5)

Prerequisite: None

Role and significance of farm business management, farm management strategy, marketing, investment analysis and resources management, risk analysis and management in farm, role and significance of sustainable farm resources management, selection and management of appropriate agricultural technology for soil, water, energy, environments, residue and waste in farm.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 722 Start up Organic Agribusiness and Risk Management 3 (2-2-5)

Prerequisite: None

Start up business overview, idea discovery, idea transformation to products or services, innovation process and applying with start up, presenting business plan to investors, scaling and becoming mature start up, characteristics of risk and financial loss, strategic risk management, analysis of risk management

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 723 Techniques in Value Chain Creation of Organic Agricultural Products 3 (2-2-5)

Prerequisite: None

The application of value chain analysis on agricultural products from agronomy crops, horticulture crops, vegetables, herbal plants and spices, livestock products, aquaculture products by using techniques of processing, packaging design and marketing.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

OM 724 Entrepreneurial Management Strategy for Organic Agribusiness 3 (2-2-5)

Prerequisite: None

Strategic management for the entrepreneur, organizational plans and development, principles of strategic reasoning, operations management strategy, analysis of competitive ability, methods of competitive advantage development and profit creation, internal organizational management, change management strategy, the role of innovation in the development of management strategy.

(Lecture 3 hours, Practice 0 hour, Self Study 6 hours/week)

OM 725 Digital Logistics Technology for Organic Agribusiness 3 (2-2-5)

Prerequisite: None

Principles of digital logistics technology, digital logistics technology management, digital technology to supporting logistics and supply chain management process.

(Lecture 2 hours, Practice 2 hours, Self Study 5 hours/week)

Dissertation

OM 891 Dissertation 1 6 (0-12-0)

Prerequisite: None

A comprehensive review of the research literature related to designated themes and a general topic of research interest, with a focus on literature review of the anticipated dissertation topic. Regularly discussions and reports by doctoral student with advisory committee on research problems. pic of research interest, with a focus on literature review of the anticipated dissertation topic. Regularly discussions and reports by doctoral student with advisory committee on research problems.

(Lecture 0 hour, Practice 12 hours, Self Study 0 hour/week)

OM 892 Dissertation 2 6 (0-12-0)

Prerequisite: OM 891 Dissertation 1

Directed research and study of specific and advanced level problems in various topics in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problem. Students will complete the integrative literature review and begin framing research questions for further pursuit.

(Lecture 0 hour, Practice 12 hours, Self Study 0 hour/week)

OM 893 Dissertation 3 6 (0-12-0)

Prerequisite: OM 892 Dissertation 2

Directed research and study of specific and advanced level problems in various topics in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problems. Students receive direction and guidance needed to develop dissertation research proposals. At the end of the course, students are required to submit a revised proposal to the graduate school.

(Lecture 0 hour, Practice 12 hours, Self Study 0 hour/week)

OM 894 Dissertation 4 6 (0-12-0)

Prerequisite: OM 893 Dissertation 3

Directed research and study of specific and advanced level problems in various topics in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problem. Preparation of a dissertation or scientific papers required to earn a Ph. D. degree.

(Lecture 0 hour, Practice 18 hours, Self Study 0 hour/week)

OM 895 Dissertation 5 12 (0-36-0)

Prerequisite: OM 894 Dissertation 4

Directed research and study of specific and advanced level problems in various topics in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problem.

For Plans 1.1 Students will be expected to present a draft of scientific paper(s), a draft of literature review, and method sections of their dissertations by the end of this course.

For Plan 1.2 Student will continuously conduct research with creativity involving theories and principle together with data collection and analysis.

For Plan 2. 1 Students will be expected to writing up a complete dissertation and scientific paper(s) required to earn a Ph.D. degree.

(Lecture 0 hour, Practice 36 hours, Self Study 0 hour/week)

OM 896 Dissertation 6 12 (0-36-0)

Prerequisite: OM 895 Dissertation 5

Directed research and study of specific and advanced level problems in various topics in respective branches of sustainable and organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problem.

For Plan 1.2 Student will continuously conduct research with creativity involving theories and principle together with data collection and analysis. Students will be expected to writing up scientific paper(s) for publish in scientific journal.

For Plans 1.1 and 2.1 Students will be expected to writing up a complete dissertation and scientific paper(s) required to earn a Ph.D. degree.

(Lecture 0 hour, Practice 36 hours, Self Study 0 hour/week)

OM 897 Dissertation 7 6 (0-12-0)

Prerequisite: OM 896 Dissertation 6

Directed research and study of specific and advanced level problems in various topics in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problem. Preparation of a dissertation or scientific paper(s) required to earn a Ph.D. degree.

(Lecture 0 hour, Practice 12 hours, Self Study 0 hour/week)

OM 898 Dissertation 8 6 (0-12-0)

Prerequisite: OM 897 Dissertation 7

Directed research and study of specific and advanced level problems in various topics in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problem. Preparation of a dissertation or scientific paper(s) required to earn a Ph.D. degree.

(Lecture 0 hour, Practice 12 hours, Self Study 0 hour/week)

OM 899 Dissertation 9 6 (0-12-0)

Prerequisite: OM 898 Dissertation 8

Directed research and study of specific and advanced level problems in various topic in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research

problem. Preparation of a dissertation or scientific paper(s) required to earn a Ph.D. degree.

(Lecture 0 hour, Practice 12 hours, Self Study 0 hour/week)

OM 900 Dissertation 10 6 (0-12-0)

Prerequisite: OM 899 Dissertation 9

Directed research and study of specific and advanced level problems in various topic in respective branches of organic agriculture management. Regularly reports and discussions by doctoral student with advisory committee on research problem. Preparation of a dissertation or scientific paper(s) required to earn a Ph.D. degree. Student will remain continuously enrolled until the dissertation is complete. If additional time is required.

(Lecture 0 hour, Practice 12 hours, Self Study 0 hour/week)