

Graduate Degree Programs

HORTICULTURE

The Institute of Crop Science (ICropS) offers various graduate programs in Horticulture, namely: Master of Science (MS) in Horticulture, Master of Agriculture (MAgr), MS in Plant Breeding, Doctor of Philosophy (PhD) in Horticulture, PhD in Plant Breeding.

Under the MAgr, MS and PhD in Horticulture programs, a student may specialize in any of the following areas of study:

- Crop Physiology
- Crop Breeding
- Crop Production and Management/ Farming Systems
- Propagation and Nursery Management
- Embryology/ Tissue Culture
- Postharvest Horticulture
- Seed Technology (for MS/ MAgr only)

ADMISSION POLICIES

An applicant for admission to a Master's program must be a holder of the Bachelor of Science (BS) in Agriculture or its equivalent. Where the degree is not in agriculture, the applicant must have had at least 6 units of crop science courses.

An applicant for admission to a PhD program must be a holder of MS degree in a biological field. A holder of MS degree in a non-biological field must apply for admission to a master's program.

A duly accomplished admission form must be submitted to the Graduate

School together with a copy of the official transcript of academic records of previous degree(s) earned, letters of references from two former professors, and in the case of an applicant to the PhD program, an additional letter of recommendation from his/her adviser in the MS degree. For an applicant coming from a country where English is not the medium of instruction, a certification of English proficiency from one of his/her former English professors or the Chairman of an English department must be included.

The application form and supporting papers must be received by the University of the Philippines Los Baños (UPLB) Graduate School not later than Jan 30 for First Semester (August) admission, and June 30 for Second Semester (January) admission.

EXAMINATIONS

Qualifying Examination

A student for the PhD degree must take a qualifying examination to be conducted by the advisory committee before the second semester of residence. The result of the examination will be the basis for evaluating the student's ability to pursue doctoral studies and for determining a suitable program of course work.

The student should submit an application for the qualifying examination to the dean of the Graduate School not later than one month before the date of the examination.

If the student fails the qualifying examination, no re-examination shall follow except upon the unanimous approval of his/her advisory committee. If the student fails the re-examination, he/she shall be permanently disqualified from the PhD program.

Written and Oral Departmental Exam

A written departmental examination is given to all PhD students after satisfactorily completing all courses prescribed by his/her committee. The examination is given one month after the first day of classes and is generally composed of questions related to all fields of specialization/disciplines in Horticulture. An integrative oral examination will be given after passing the departmental written examination.

General Comprehensive Examination

MS and MAgr students have to take an oral comprehensive general examination after completing all his/her course work. An application addressed to the Dean of the Graduate School should be filed not later than one month before the date of the examination.

Final Oral Examination

A student in the MS/PhD program is given an oral examination to defend his/her thesis/dissertation once it is completed. The application for the final examination should be submitted to the Graduate School together with the first draft of the thesis/dissertation not later than two weeks before the date of the examination. The advisory committee should also have a copy of the draft at this time.

COURSE REQUIREMENTS

The following are the core courses to be included in the program of study of students admitted to MAgr, MS and PhD programs in Horticulture:

| Area of Specialization | MS/ MAgr | PhD |
|------------------------------------|-----------|----------|
| Propagation and Nursery Management | CHEM 160 | DM 210 |
| | HORT 220/ | PPTH 202 |
| | 230/ | BOT 210 |
| | 240 | HORT 231 |
| | HORT 232 | |
| Crop Production and Management | CHEM 160 | DM 210 |
| | HORT 220/ | PPTH 202 |
| | 230/ | ENT 170 |
| | 240 | HORT 231 |
| | SOIL 260 | |

| Area of Specialization | MS/ MAgr | PhD |
|-------------------------------|----------------|--------------------------------|
| Crop Physiology | CHEM 160 | DM 210 |
| | CHEM 160.1 | BOT 220 |
| | HORT 220/ | HORT 220/ |
| | 230/ | 230/ |
| | 240 | 240 |
| Postharvest Physiology | HORT 232 | HORT 231 |
| | CHEM 160 | DM 210 |
| | HORT 209 | CHEM 102 |
| | FST 219 | CHEM 260 |
| | | BOT 210 |
| Embryology and Tissue Culture | CHEM 160 | DM 210 |
| | HORT 220/ | PPTH 202 |
| | 230/ | ENT 170 |
| | 240 | HORT 231 |
| | HORT 232 | |
| Seed Technology | CHEM 160 | Not ready to offer PhD program |
| | HORT 220/ | |
| | 230/ | |
| | 240 | |
| | HORT 234 | |
| Crop Breeding | HORT 123/125 | AGR 255 |
| | HORT 220/ 230/ | AGR 256 |
| | 234/ 240 | AGR 253 |
| | BIO 130a | |
| | BIO 130b | |

COURSE OFFERINGS

HORT 209 - Postharvest Physiology of Perishable Crops (3). Physical and physio-chemical changes in perishable crops after harvest; mechanisms and control of deterioration. PR. HORT 109.1/ 180.1 (2).

HORT 220 - Applied Vegetable Crop Physiology (3). Effects of different environment factors on the growth and development of various vegetable crops. PR. HORT 132 (or BOT 132) or COI. (1, 2).

HORT 230 - Applied Fruit Crops Physiology (3). Environmental factors, cultural treatments and growth regulators that modify basic processes controlling flowering and fruiting of fruit crops. PR. HORT 130/110 and HORT 132 or COI. (2).

HORT 231 - Reproductive Crop Physiology (3). The flowering process and its associated phenomena of photoperiodism, vernalization, thermoperiodism and endogenous rhythm, sex expression, fruit set and development and their control mechanisms. PR. HORT 132 (or BOT 132). (1).

HORT 232 (or BOT 232) - Physiology and Biochemistry of Endogenous Growth Regulators (3). Physiology, biochemistry, transport, mode of action, assay and applications of endogenous growth regulators in agriculture. PR. COI. (2).

HORT 234 - Crop Seed Physiology (3). Seed development, dormancy, germination and other physiological processes associated with seed production and storage of economically important crop plants. PR. COI. (1).

HORT 241 - Plant Morphogenesis (3). Processes involved, categories of the factors affecting morphogenetic phenomena and their implications in plant development and propagation. PR. HORT 132. (1).

HORT 290 - Special Problems (2). May be repeated once for a maximum of 4 units. PR. COI. (1, 2, M).

HORT 291 - Special Topics (3). (1, 2).

HORT 299 - Graduate Seminar (1). May be repeated once for a maximum of 2 units. PR. Graduate standing. (1, 2).

HORT 300 - Master's Thesis (6). (1, 2, M).

HORT 400 - Doctoral Dissertation (12). (1, 2, S).

REGULAR FACULTY

AGRAVANTE, JOSEPHINE U. Research Asst. Prof. 7
PhD 1991, Kagawa University
Postharvest Physiology, Horticulture

AQUINO-ONG, SUSAN C. Associate Professor 4
PhD 2012, University of the Philippines Los Baños
Environmental Science, Landscape Heritage Conservation

BERNARDO, EMMANUEL L. Assistant Professor 6
PhD 2024, University of Cambridge, UK
Crop Physiology, Tissue Culture

EDAÑO, MA. LOURDES S. Associate Professor 3
PhD 2014, Oklahoma State University
Sustainable Agriculture, Crop Production and Management, Farming Systems

ENDONELA, LEAH E. Assistant Professor 4
PhD 2018, University of the Philippines Los Baños
Plant Genetic Resources, Botany, Plant Breeding

GENTALLAN JR., RENERIO P. Assistant Professor 7
PhD 2024, University of the Philippines Los Baños
Plant Genetic Resources Conservation and Management, Plant Breeding, Image-Based Phenotyping

LALUSIN, ANTONIO G. Professor 8
PhD 2006, University of Tsukuba
Horticulture, Plant Breeding, BioResource Engineering

MAGDALITA, PABLITO M. Professor 11
PhD 1997, University of Queensland
Plant Biotechnology and Breeding, Fruits, Ornamentals

MEDINA, NORMA G. Assistant Professor 2
PhD 2023, University in Tokyo, Japan
Environmental Science, Landscape Planning and Management

MERCADO, MA. FATIMA O. Assistant Professor 7
MSc 2001, University of the Philippines Los Baños
Seed Science and Technology, Sustainable/Ecological Agriculture

NIEVES, MYLENE C. Assistant Professor 5
PhD 2023, University of the Philippines Los Baños
Horticulture, Plant Tissue Culture & Embryology, Crop Physiology

OCAMPO, EUREKA TERESA M. Professor 1
PhD 2007, University of the Philippines Los Baños
Plant Stress Physiology, Biochemistry, Molecular Biology

PAELMO, ROSELYN F. Associate Professor 3
PhD 2011, University of the Philippines Los Baños
Crop Production and Management, Farming Systems, Agroforestry, Ecological Agriculture, Organic Farming

REALIN, DARA MARIA F. Assistant Professor 2
MSc 2019, University of the Philippines Los Baños
Agronomy, Horticulture

ROCES, LESLIE ANGELA L. Assistant Professor 2
MSc 2017, University of the Philippines Los Baños
Plant Breeding, Horticulture

SALAZAR, BONG M. Assistant Professor 7
PhD 2024, Univ of Sheffield, UK
Crop Physiology, Postharvest and Stress Physiology

SANCHEZ JR., FERNANDO C. Professor 11
PhD 1998, Tokyo University of Agriculture
Landscape Planning and Design, Landscape Establishment and Maintenance, Turf Management

PROFESSOR EMERITUS

ROSARIO, TERESITA L. Professor Emeritus PhD 1971,
Pennsylvania State University *Horticulture, Crop Breeding and Genetics*



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INSTITUTE OF CROP SCIENCE

College of Agriculture and Food Science
University of the Philippines Los Baños