Graduate Degree Programs
AGRONOMY

The Institute of Crop Science (ICropS) offers various graduate programs leading to the degree of Master of Agriculture (MAgr), Master of Science (MS) in Agronomy, MS in Plant Breeding, MS in Plant Genetic Resources Conservation and Management, Doctor of Philosophy (PhD) in Agronomy, PhD in Plant Breeding and PhD by Research in Plant Breeding.

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

- Crop Physiology
- Crop Production and Management
- Seed Technology (for MS/MAgr only)
- Weed Science

ADMISSION POLICIES

An applicant for admission to an MS program must be a holder of a Bachelor of Science (BS) in Agriculture degree or its equivalent. Where the degree is not in Agriculture but in other biological fields, 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 an MS degree in a non-biological field must satisfy the foundation courses.

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 30for 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 their examination, he 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 MAgr program is a non-thesis program, which require a minimum of 36 units of course work with at least 75% earned in courses above the 200 level. At least 24 units of course shall be in the major field and at least 12 units in the cognate field.

The course work requirement for the MS Agronomy program is at least 24 units with at least 18 units earned in courses above the 200 level. Research work (thesis) or AGR 300 (6 units) is required of all MS student in Agronomy. At least 15 units of course work shall be in the major field and 9 units in the cognate field

For the PhD Agronomy program, a minimum of 24 units of course work is required with at least 18 units earned in courses above the 200 level. Research work (dissertation) or AGR 400 (12units) is required of all PhD students. At least 12 units of course work shall be in the major field and at least 6 units in each cognate field. In the case where the student elects to have only one cognate, the minimum number of units for the major and cognate field shall be 15 and 9 units, respectively.

The required foundation courses an MS/MAgr or PhD in Agronomy student should have had in a previous degree are given below:

Course No.	Course Title
BOT/HORT132	Plant Growth
CHEM 40	Basic Organic Chemistry
SOIL150	Soil Fertility
CHEM160 (for PhD)	Introductory Biochemistry

A student who has not taken any of the foundation courses or its equivalent in a previous degree program should include this in the present program but units earned in this course cannot be used to satisfy the required number of units for the degree. ICropS shall determine whether the course taken previously may be considered as the equivalent of the required foundation course. A validating examination may be re- quired in some cases if the student took the course or its equivalent outside UPLB.

The required core courses or courses common to all graduate students of Agronomy are listed below:

Course No.	Course Title
AGR 112	Methods in Crop Research
AGR 241	Advance Field Crop Physiology and Ecology
CHEM 160 (MS/MAgr)	Introductory Biochemistry
AGR 299	Graduate Seminar (2 units)

COURSEOFFERINGS

AGR 235 - Physiology of Herbicides (3). Absorption, translocation, metabolism, mechanism of action and selectivity of herbicides. 3 hours (class) PR. BOT 20 and CHEM 40. (2).

AGR 235.1 – Laboratory and Modes of Action of Herbicides (2). Laboratory phase of Agronomy 235. 6 hours (lab) (2).

AGR 236 - Herbicide-Soil Interaction (3). Herbicide absorption, leaching, volatilization, degradation and persistence in soils. 3 hours (class) PR. SOIL 1 or COI. (1).

AGR 240 - Environmental Physiology (3). Characterization of climatic environment and elucidation of various responses of plants to its environment with emphasis on economically important crops. 3 hours(class) PR. BOT 20 or COI. (1, 2).

AGR 241 – Advanced Field Crop Physiology and Ecology (3). Management and evaluation of the effects of climatic and edaphic factors on crop growth. 3 hours (class) PR. BOT 20 or COI. (1, 2).

AGR 250 – Advanced Plant Breeding I (3).Types, uses and induction of genetic variation; systems of pollen control; selection concepts and general breeding procedures for crops in each mode of pollination; approaches in breeding for specific characters. 3 hours (class) PR.AGR 150. (2).

AGR 251 - Advanced Plant Breeding II (3). Advanced concepts and methods in population breeding and cultivar development. 3 hours (class)PR. BIO 130 and AGR 250. (1).

AGR 254 - Crop Evolution (3). Origin and evolution of crop plants and dynamics of plant domestication. 3 hours (class) PR. AGR 50 or COI. (1).

AGR 255 - Population Genetics (3). Genetics of populations undergoing random mating and inbreeding; effects of selection, mutation, migration, and other forces on the genetic composition of natural and artificial biological populations. 3hours (class) PR. MATH26 and BIO 130b. (1).

AGR 256 - Quantitative Genetics (3). Genetics of quantitative characters in random and non-random mating populations; application of quantitative genetic theories in breeding work. 3 hours (class) PR. AGR
255. (2).

AGR 258 – Molecular Plant Breeding (3). Molecular markers, recombinant DNA technology, and cell and tissue Culture technology in crop improvement. 3 hours (class) PR.AGR 150 and BIO 101 or COI. (1).

AGR 270 - Seed Science and Technology for Seed Program Development (3). Advanced concepts in the science and technology of seed production, postproduction, genetic conservation, testing and quality control; policies and management of seed-and related programs. 3 hours (class) PR. AGR 170 or COI. (1).

AGR290- Special Problems (1-3). May be taken twice provided that the total number of units to be credited to the student's program will not exceed 4 units. PR. COI. (1, 2, M).

AGR 291 - Special Topics (1-3). May be taken twice provided that the total number of units to be credited to the student's program will not exceed 4 units. PR. COI. (1, 2, M).

AGR299 - Graduate Seminar in Agronomy (1). May be taken twice for a maximum of 2 units. 1 hour (class) PR. Graduate standing (1, 2).

AGR300 - Master's Thesis (6). (1, 2, M).

AGR400 - Doctoral Dissertation (12). (1, 2, M).

AGRI 211 – Design and Analysis of Farming Systems (3). Critical analysis, designing and evaluating farming systems. 3 hours (class) PR. AGRI 111 or COI. (2).

AGRI 221 – Advanced Ecological Agriculture(3). Dynamics of agroeco-systems in relation to ecological agriculture practices, issues and con-cerns.3 hours (class) PR. CRSC 2, AGRI 121 or COI. (2).

CRSC 245 - Stress Physiology of Plants (3). Response of plants to environmental Stresses; morpho-physiological, biochemical and genetic variationsasbasisforadaptationtostress.3hours(class) PR. BOT20. (1, 2).

PGR 261 - Assessment of Genetic Diversity in Plants (3). Biochemical, molecular, and cytogenic methods of plant genetic resources characterization and evaluation; utilization and classification of plant genetic resources. 5 hours (class) PR. AGR 152 or COI. (1).

PGR 262 - Plant Genetic Resources Conservation Methods and Man-agreement (3). Strategies in plant genetic resources conservation and genebank management. 5 hours (class) PR. AGR 152 or COI. (2).

PGR 263 - PGR Documentation and Information Management (3). Management of passport, characterization, evaluation and inventory information in genebanks. 5 hours (class)PR.AGR 152 or COI. (1).

PGR 299 - Graduate Seminar (1). 1hour (class).

PGR 300 - Master's Thesis (6).

REGULAR FACULTY

BERNARDO, EMMANUEL L., Assistant Professor MSc
2017. University of the Philippines Los Baños
Technology, *Crop Physiology, Plant Tissue Culture*

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

LAUDE, TONETTE P. Associate Professor 7
PhD 2014, North Dakota State University
Plant Breeding, Plant Science, Corn

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

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 6
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

SALAZAR, BONG M. Assistant Professor 7
MSc 2010, University of the Philippines Los Baños
Crop Physiology, Postharvest and Stress Physiology

PROFESSOR EMERITI

HERNANDEZ, JOSE E. Professor Emeritus, PhD
PhD 1985, Minnesota State University
Plant Breeding and Genetics, Crop Production and Management, Rice

STA.CRUZ, POMPEC. Professor Emeritus, PhD
PhD1990, University of the Philippines Los Baños
Crop Physiology, Crop Nutrition, Crop Production and Management

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AGRONOMY Graduate Programs

INSTITUTE OF CROP SCIENCE

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