

Doctor of Philosophy Program in Systems Agriculture
An International Program

1. Title of Curriculum

: Doctor of Philosophy Program in Systems Agriculture

2. Name of Degree

: Doctor of Philosophy (Systems Agriculture)

: Ph.D. (Systems Agriculture)

3. Objectives of the Curriculums

To produce Ph.D. graduates with the following qualifications:

1. Having knowledge and skill in system concepts and methodologies.
2. Being capable of analyzing and diagnosing problems in agriculture and natural resources management.
3. Can conduct in-depth interdisciplinary system research to generate new knowledge which are useful to the academic area and/or to agricultural development at different hierarchical levels.
4. Having deeper knowledge in their specialized and/or related areas.
5. Can sufficiently communicate in English.

4. Program Structure

Type 1(2) For applicants with Master's degree or equivalent

Required courses		Non-credit
Dissertation	A minimum of	48 credits
Total	A minimum of	48 credits

Candidates are also required to take the following non-credit courses: 124 991 Systems Agriculture Seminar III, 124 992 Systems Agriculture Seminar IV, 124 993 Systems Agriculture Seminar V, and any other non-credits courses or course auditions as recommended by the dissertation advisory committee. Also, dissertation work must be published or accepted for publishing in an accredited journal for at least 2 papers.

Type 2(2) For applicants with Master's degree or equivalent

Course work	A minimum of	34 credits
- Required	A minimum of	13 credits
- Elective	A minimum of	21 credits
Dissertation	A minimum of	48 credits
Total	A minimum of	82 credits

Also, dissertation work must be published or accepted for publishing in an accredited journal for at least 2 paper.

Type 2(1) For applicants with Bachelor's degree or equivalent

Course work	A minimum of	12 credits
- Required	A minimum of	3 credits
- Elective	A minimum of	9 credits
Dissertation	A minimum of	36 credits
Total	A minimum of	48 credits

Also, dissertation work must be published or accepted for publishing in an accredited journal for at least 1 paper.

5. Program contents

5.1 Required courses

For Type 1(2)		Non-credit
124 891	Systems Agriculture Seminar I	1(1-0-3)
124 991	Systems Agriculture Seminar III	1(1-0-3)
124 992	Systems Agriculture Seminar IV	1(1-0-3)
124 993	Systems Agriculture Seminar V	1(1-0-3)
For Type 2(2)		3 credits
124 701	System Theories and Concepts	3(2-3-3)
124 702	Methods for Data Collection and Analysis Procedures in Systems Agriculture	3(1-6-3)
124 703	Case Study of Agricultural Systems	3(0-9-3)
124 891	Systems Agriculture Seminar I	1(1-0-3)
124 991	Systems Agriculture Seminar III	1(1-0-3)
124 992	Systems Agriculture Seminar IV	1(1-0-3)
124 993	Systems Agriculture Seminar V	1(1-0-3)
For Type 2(1)		13 credits
124 991	Systems Agriculture Seminar III	1(1-0-3)
124 992	Systems Agriculture Seminar IV	1(1-0-3)
124 993	Systems Agriculture Seminar V	1(1-0-3)

5.2 Electives

For Type 2(1)	21 credits
For Type 2(2)	9 credits

Select from the following courses or additional elective courses as later designated by the Program Management Committee:

110 710	Insect and Host Plant Relationships	3(3-0-3)
110 770	Insect Pest Management on Crops	3(2-3-3)
111 711	Physiological Plant Pathology	3(3-0-3)
111 731	Epidemiology and Plant Disease Management	3(2-3-2)
111 751	Post-harvest Pathology of Vegetables and Fruits	3(2-3-2)
111 752	Seed Pathology	3(2-3-2)
111 753	Major Diseases of Economic Crops and Their Management	3(2-3-2)
132 711	Advanced Soil Fertility	3(3-0-3)
132 712	Soil Water and Plant Relationships	3(3-0-3)
122 733	Remote Sensing	3(2-3-2)
122 734	Geographic Information Systems in Land Resource Application	3(2-3-2)
122 735	Land Resources	3(3-0-3)
122 738	Integrate Participatory Land Use Planning	3(3-0-3)
122 741	Integrated Soil Resource Management	3(3-0-3)
122 743	Environmental Pollution and Management	3(3-0-3)
113 711	Advanced Vegetable Crops Production	3(2-3-0)
113 721	Commercial and Industrial Fruit Crops	3(2-3-0)
113 731	Advanced Flower and Ornamental Crops	3(2-3-0)
113 742	Nutritional Requirements of Horticultural Crops	3(2-3-0)
113 743	Growth and Development of Horticultural Crops	3(3-0-0)
113 745	Postharvest Physiology and Technology of Horticultural crops	3(2-3-0)
113 751	Horticultural Seed Quality Control	3(2-3-0)
114 701	Research Methods in Agriculture	3(2-3-0)
114 703	Crop Growth Modeling	3(2-3-3)
114 711	Tropical Crop Production	3(3-0-0)
114 741	Crop Adaptation	3(3-0-0)
114 742	Nutrition of Field Crops	3(3-0-0)
114 743	Physiology of Crop Growth and Development	3(3-0-0)
114 744	Applied Physiology in Crop Production	3(3-0-0)
114 751	Seed Quality Control	3(2-3-0)
114 762	Cropping Systems	3(3-0-0)
114 801	Current Topics in Crop Production	3(1-6-6)
115 701	Fundamental Background for Agribusiness	3(3-0-9)

115 711	Advanced Agricultural production Economics	3(3-0-9)
115 721	Agricultural Marketing Management	3(3-0-9)
115 724	Managerial Economics in Agribusiness	3(3-0-9)
115 731	Advanced Resource and Environmental Economics	3(3-0-9)
116 701	Program Planning and Evaluation in Agricultural Extension	3(3-0-0)
116 702	Administration and Supervision in Agricultural Extension	3(3-0-0)
116 715	Psychology in Agricultural Extension	3(3-0-0)
116 725	Agricultural Extension Methodology	3(3-0-0)
127 700	Integrated Animal Production in Farming Systems	3(2-3-3)
127 735	Advanced Reproductive Physiology	3(3-0-3)
127 740	Tropical Feed Resources and Feeding Technology	3(3-0-3)
127 741	Advanced Ruminant Nutritional Science	3(3-0-3)
127 742	Nonruminant Nutritional Science	3(3-0-3)
127 760	General Veterinary Medicine	3(3-0-3)
127 771	Advanced Tropical pasture	3(3-0-3)
117 843	Ruminant Nutritional Science Modeling	3(3-0-3)
124 781	Selected Topics in Systems Agriculture	3(3-6-6)
124 782	Selected Topics in Systems Agriculture	3(2-3-4)
124 783	Selected Topics in Systems Agriculture	1(0-3-3)
415 718	Sociology of Natural Resources and Environment	3(3-0-9)
415 732	Population, Resources and Environment	3(3-0-9)
512 726	Environmental Impact Assessment	2(2-0-6)
751 713	Local Institutional Development	3(3-0-6)
751 716	Natural Resources and Environmental Management	3(3-0-6)
124 801	Current Topics in Systems Agriculture	3(1-6-5)
124 894	Special Problems in Systems Agriculture	3(1-6-5)

5.3 Dissertation

For Type 1(2)

124 997	Dissertation	48 credits
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For Type 2(1)

124 998	Dissertation	48 credits
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For Type 2(2)

124 999	Dissertation	36 credits
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6. Study plans

Course no.	Course name	Type 1(2)	Type 2(1)	Type 2(2)
<i>First Year 1st Semester</i>				
124 701	System Theories and Concepts	-	3	-
124 702	Methods for Data Collection and Analysis in Systems Agriculture	-	3	-
124 997	Dissertation	5	-	-
124 999	Dissertation	-	-	3
xxx xxx	Elective	-	9	6
	Total	5	9	9
Course no.	Course name	Type 1(2)	Type 2(1)	Type 2(2)
<i>First Year 2nd Semester</i>				
124 703	Case Study of Agr. Sys.	-	3	-
124 991	Systems Agriculture Seminar III	non-credit	-	1
124 997	Dissertation	5	-	-
124 998	Dissertation	-	3	-
124 999	Dissertation	-	-	5
xxx xxx	Elective	-	3	3
	Total	5	9	9
Course no.	Course name	Type 1(2)	Type 2(1)	Type 2(2)
<i>Second Year 1st Semester</i>				
124 997	Dissertation	9	-	-
124 998	Dissertation	-	6	-
124 999	Dissertation	-	-	8
xxx xxx	Elective	-	3	-
	Total	9	9	8

Course no.	Course name	Type	Type	Type
		1(2)	2(1)	2(2)

Second Year 2nd Semester

124 891	Systems Agriculture Seminar I	-	1	-
124 992	Systems Agriculture Seminar IV	non-credit	-	1
124 997	Dissertation	9	-	-
124 998	Dissertation	-	5	-
124 999	Dissertation	-	-	8
xxx xxx	Elective	-	3	-
	Total	9	9	9

Course no.	Course name	Type	Type	Type
		1(2)	2(1)	2(2)

Third Year 1st Semester

124 997	Dissertation	10	-	-
124 998	Dissertation	-	6	-
124 999	Dissertation	-	-	6
xxx xxx	Elective	-	3	-
	Total	10	9	6

Course no.	Course name	Type	Type	Type
		1(2)	2(1)	2(2)

Third Year 2nd Semester

124 991	Systems Agriculture Systems Seminar III	-	1	-
124 993	Systems Agriculture Seminar V	non-credit	-	1
124 997	Dissertation	10	-	-
124 998	Dissertation	-	5	-
124 999	Dissertation	-	-	6
xxx xxx	Elective	-	3	-
	Total	10	9	7

Course no.	Course name	Type	Type	Type
		1(2)	2(1)	2(2)

Fourth Year 1st Semester

124 998	Dissertation	-	6	-
xxx xxx	Elective	-	3	-
	Total	-	9	-

Course no.	Course name	Type	Type	Type
		1(2)	2(1)	2(2)

Fourth Year 2nd Semester

124 992	Systems Agriculture Seminar IV	-	1	-
124 998	Dissertation	-	5	-
	Total	-	6	-

Course no.	Course name	Type	Type	Type
		1(2)	2(1)	2(2)

Fifth Year 1st Semester

124 998	Dissertation	-	6	-
	Total	-	6	-

Course no.	Course name	Type	Type	Type
		1(2)	2(1)	2(2)

Fifth Year 2nd Semester

124 993	Seminar V	-	1	-
124 998	Dissertation	-	6	-
	Total	-	7	-
	Cumulative credits	48	82	48