

Doctor of Philosophy  
Biological Science (International Program)

1. Degree Program : Doctor of Philosophy Program in Biological Science (International Program)

2. Degree offered : Doctor of Philosophy (Biological Science)

: Ph.D. (Biological Science)

### 3. OBJECTIVES

To produce Ph.D. graduate with the following qualifications.

1. Having knowledge and deep understanding of important principles and theories in the area of biological science, and very high capability to apply the knowledge for doing research or work.
2. Having initiative, and capable of doing research or academic project to discover new knowledge or working procedure in biological science.
3. Capable of systematic analysis and synthesis, solving problem by using scientific process, and having independent opinion and decision.
4. Having leadership and doing highly efficient collaborative work.
5. Capable of using computer and modern information technology to gain knowledge and for communication.
6. Having ethics, morality and good conscience to use scientific knowledge for development of society at the level of Country, ASEAN and the World, with conservation of environment and biological resources.

### 4. DURATION

3 academic years for Type 1.1 and 2.1, and 4 academic years for Type 1.2 and 2.2

## 5. Program of Study

Type 1.1		
Required courses :	302 990, 302 991, 302 992	3 (non-credits)
Thesis :	302 997	48
Total		48
Type 1.2		
Required courses :	302 990, 302 991, 302 992, 302 993	4 (non-credits)
Thesis :	302 996	72
Total		72
Type 2.1		
Required courses :	302 701, 302 990, 302 991, 302 992	6
Elective courses :	302 994, 311 702, 311 711, 311 720, 311 784, 317 724, 317 736, 318 731, 318 735, 319 701	6
Thesis :	302 999	36
Total		48
Type 2.2		
Required courses :	302 701, 302 990, 302 991, 302 992, 302 993	7
Elective courses :	302 994, 311 702, 311 711, 311 720, 311 784, 317 724, 317 736, 318 731, 318 735, 319 701	17
Thesis :	302 998	48
Total		72

The dissertation work or its part must be, at least, presented at a national or international academic conference (or symposium), and published or accepted for publishing in an international scientific journal.

## 6. COURSE DESCRIPTIONS

302 701	Integrated Biological Science	3 (3-0-6)
302 990	Seminar in Biological Science I	1 (1-0-2)
302 991	Seminar in Biological Science II	1 (1-0-2)
302 992	Seminar in Biological Science III	1 (1-0-2)
302 993	Seminar in Biological Science IV	1 (1-0-2)
302 994	Special Problem in Biological Science	3(0-9-4)
302 996	Dissertation	72
302 997	Dissertation	48
302 998	Dissertation	48
302 999	Dissertation	36
311 702	Bioinformatics and Information Technology	3 (2-3-6)
311 711	Plant Metabolism	3 (3-0-6)
311 720	Modern Methods in Plant Taxonomy	3 (2-3-6)
311 784	Biology of Amphibians	3 (2-3-6)
317 724	Prokaryotic Molecular Genetics	2 (2-0-4)
317 736	Applied Microbiology and Biotechnology	2 (2-0-4)
731 318	PCR Technology	2 (2-0-4)
7 31835	Biochemistry and Biology of Cancer	3 (6-0-3)
319 701	Ecological Principles and Natural Resource Conservation	2 )2-0-4(

## 7. Admission Requirements

1) Applicants must meet the qualification as specified in each program as follows.

Type 1.1: Holding a Master Degree in Master of Science program in Biology, Biochemistry, Microbiology, Environmental Science, Agriculture, Biological Science and Biotechnology, or equivalent in related programs, and having GPA of at least 3.50 from the maximum of 4.00, or a published scientific paper in national or international journal or at least three years work experience in research, or a presentation in knowledge/potential of research work depended upon the consent of the curriculum administrative committee.

Type 1.2 : Holding a Bachelor Degree in Biology, Biochemistry, Microbiology, Environmental Science, Agriculture, Biological Science and Biotechnology, or equivalent in related programs, and having GPA of at least 3.00 from the maximum of 4.00 and a published scientific paper in national or international journal , with approval depended upon the consent of the curriculum administrative committee.

Type 2 .1: Holding a Master Degree in Master of Science program in Biology, Biochemistry, Microbiology, Environmental Science, Agriculture, Biological Science and Biotechnology, or equivalent in related programs.

Type 2 .2 : Holding a Bachelor Degree in Biology, Biochemistry, Microbiology, Environmental Science, Agriculture, Biological Science and Biotechnology, or equivalent in related programs, and having GPA of at least 3.00 from the maximum of 4.00 and a presentation in knowledge/potential of research work depended upon the consent of the curriculum administrative committee.

Otherwise applicants who do not meet the Type 1.1 requirements above may eligible to study the Type 2.1 automatically if they meet the Type 2.1 requirements. Similarly, applicants who do not meet the Type 1.2 requirements may eligible to study the Type 2.2 automatically if they meet the Type 2.2 requirements.

2) Applicants from a country where English is not the first language must enclose English Proficiency test result. The result must not be more than two years. The following English proficiency tests are accepted for graduate admission, and a minimum score should be as follows:

TOEFL	(Paper Based)	500	or
TOEFL	(Computer Based)	173	or
TOEFL	(Internet Based)	61	or
IELTS	(Academic Module)	5.5	or
TU-GET	(1000)	550	or
CU-TEP	(120)	70	or

Other English language test institute with equivalent standards depends upon the consent of the curriculum administrative committee.