

# Master Program in Teaching Biology

## Research Fields

Plant Science and Technology  
Animal Science  
Biosystematics  
Molecular Biology  
Population Genetics  
Plant Tissue Culture and Plant Breeding  
Microbiology  
Ecology and Environmental Science



For more information,  
please visit the following website.  
[www.biology.science.cmu.ac.th](http://www.biology.science.cmu.ac.th)



## Master of Science Program in Teaching Biology

### Type 2 Degree

**Requirements** **a minimum of 36 credits**

**A. Coursework** **a minimum of 24 credits**

1. Graduate Courses a minimum of 24 credits

1.1 Field of Specialization a minimum of 22 credits

1.1.1 Required courses 19 credits

202737 Integrated Genetics 3 credits

216703 Multimedia for Teaching Biology 2 credits

216704 Preparation of Biology Media 3 credits

216711 Evolution and Biodiversity 3 credits

216721 Cell Structure and Function 3 credits

216781 Biotechnology for Life 3 credits

216790 Seminar in Biology Teaching Techniques 1 credit

216791 Seminar in Biology for Teachers 1 credit

1.1.2 Elective courses a minimum of 3 credits

From this list or any graduate courses in Department of Biology relating to Thesis with the advisor's approval.

216701 Practical Biology 1 1 credit

216702 Practical Biology 2 1 credit

216741 Animal Structure and Function 3 credits

216742 Plant Structure and Function 3 credits

216771 Ecology and Environmental Science 3 credits

1.2 Other courses (if any) a maximum of 3 credits

1.2.1 Required courses -none-

1.2.2 Elective courses (if any) a maximum of 3 credits

From this list.

063703 Innovations in Curriculum and Instruction 2 credits

063710	Analysis of Teaching Methodologies and Classroom Culture	3	credits
063715	Curriculum and Instruction for Promoting Thinking Skills	2	credits
064712	Development of Inquiry Approach and Science Process Skills	2	credits
064715	Science Curriculum Development	2	credits
064723	Leadership and Supervision in Science Education in Schools	2	credits
064725	Local Wisdom Related to Science in Global Society	2	credits
064770	Research in Science Education	2	credits
088700	Foundations of Curriculum and Instructional Development	3	credits

2. Advanced Undergraduate Courses -none-

#### **B. Thesis**

216799	Master's Thesis	12	credits
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#### **C. Non-credit Courses**

1. Graduate School requirement: -a foreign language-
2. Program requirement -none-

#### **D. Academic Activities**

At least 1 master's thesis work or a part of master's thesis work must be published or at least accepted to publish in a national journal listed in TCI Tier 1 database or presented in the international conference with proceedings which have at least one full academic paper and at least 1 main publication of the thesis work must specify the student as the first author with the affiliation of Graduate School, Chiang Mai University.

**Note:** Course in the field of Specialization are courses in graduate level in Department of Biology.

### Type 3

**Degree Requirements** a minimum of 36 credits

**A. Coursework** a minimum of 30 credits

1. Graduate Courses a minimum of 30 credits

1.1. Field of Specialization a minimum of 28 credits

1.1.1 Required courses 22 credits

202737 Integrated Genetics 3 credits

216703 Multimedia for Teaching Biology 2 credits

216704 Preparation of Biology Media 3 credits

216711 Evolution and Biodiversity 3 credits

216721 Cell Structure and Function 3 credits

216771 Ecology and Environmental Science 3 credits

216781 Biotechnology for Life 3 credits

216790 Seminar in Biology Teaching Techniques 1 credit

216791 Seminar in Biology for Teachers 1 credit

1.1.2 Elective courses a minimum of 6 credits

From this list or any graduate courses in Department of Biology relating to Independent Study with the advisor's approval.

216701 Practical Biology 1 1 credit

216702 Practical Biology 2 1 credit

216741 Animal Structure and Function 3 credits

216742 Plant Structure and Function 3 credits

1.2 Other courses (if any) a maximum of 3 credits

1.2.1 Required courses -none-

1.2.2 Elective courses (if any) a maximum of 3 credits

From this list.

063703	Innovations in Curriculum and Instruction	2	credits
063710	Analysis of Teaching Methodologies and Classroom Culture	3	credits
063715	Curriculum and Instruction for Promoting Thinking Skills	2	credits
064712	Development of Inquiry Approach and Science Process Skills	2	credits
064715	Science Curriculum Development	2	credits
064723	Leadership and Supervision in Science Education in Schools	2	credits
064725	Local Wisdom Related to Science in Global Society	2	credits
064770	Research in Science Education	2	credits
088700	Foundations of Curriculum and Instructional Development	3	credits

2. Advanced Undergraduate Courses -none-

#### B. Thesis

216798	Independent Study	6	credits
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#### C. Non-credit Courses

1. Graduate School requirement: - a foreign language -
2. Program requirement -none-

#### D. Academic activities

At least 1 independent study work or a part of independent study work must be published in CMU Graduate Journal or in other academic publication approved by the field of study and the graduate school and at least 1 main publication of the thesis work must

specify the student as the first author with the affiliation of Graduate School, Chiang Mai University.

#### **E. Comprehensive Examination**

Having submitted a request form to the Graduate School, approved by general advisor or major thesis advisor, a student must then complete a comprehensive examination.

**Note:** Course in the field of Specialization are courses in graduate level in Department of Biology.