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Doctor of Philosophy Programme in Science and Technology Education (International Programme)

Institute for Innovation Learning

### Admission Requirements

**A candidate must :**

#### **Plan A**

1. Hold a Master's degree in any field of basic science, education, art (major in science, mathematics, and technology), and health science
2. Have a minimum grade point average of 3.50
3. Have qualified English skills in listening, speaking, reading, and writing
4. Have a TOEFL ITP score of at least 500, TOEFL Internet-based score of 61 or IELTS score of 5 .

Exemption from the above conditions may be granted by the Programme Committee under exceptional circumstances.

#### **Plan B**

1. Hold a Bachelor's degree in any field of basic science, education, art (major in science, mathematics, and technology), and health science with a minimum grade point average of 3.50 and had research experience in the related field or
2. Hold a Master's degree in any field of basic science, education, art(major in science, mathematics, and technology), and health science with a minimum grade point average of 3.50
3. Students who are studying a Master's programme in Science and Technology Education may become doctoral students provided that they have already taken and passed no less than 2/3 of the course work credits required at the Master's degree level and have received a minimum grade point average of 3.50 and have the approval of the Master's program committee and Doctoral programme committee as well as the Dean of the Faculty of Graduate Studies.
4. Have qualified English skills in listening, speaking, reading, and writing
5. Have a TOEFL ITP score of at least 500, TOEFL Internet-based score of 61 or IELTS score of 5 .

Exemption from the above conditions may be granted by the Programme Committee under exceptional circumstances.

**Curriculum Structure**

	<b>Credit</b>
<b>Plan 1</b>	
Pre-requisite Courses	-
Dissertation	48
<b>Take non-credit course work according to recommendations of supervisor</b>	
<b>Plan 2 For students with Bachelor's degree</b>	
Pre-requisite Courses	-
Required Courses	13
Elective Courses no less than	11
Dissertation	48
<b>Plan 2 For students with Master's degree</b>	
Pre-requisite Courses	-
Required Courses	8
Elective Courses no less than	4
Dissertation	36
	<b>Credit</b>
<b>Plan 1</b>	
<b>Pre-requisite Courses</b>	
ILSE 603 Basic Knowledge of Education	2(2-0-4)
<b>Dissertation</b>	
ILSE 898 Dissertation	48(0-192-0)
<b>Plan 2 For students with Bachelor's degree</b>	
<b>Pre-requisite Courses</b>	
ILSE 603 Basic Knowledge of Education	2(2-0-4)
<b>Required Courses</b>	
ILSE 601 Science Teaching	2(2-0-4)
ILSE 609 Nature, History, and Philosophy of Science	3(3-0-6)
ILSE 656 Innovations in Science and Technology for Development of Learning Process	3(3-0-6)
ILSE 616 Research in Science and Technology Education	3(3-0-6)
ILSE 657 Research Seminar in Science and Technology Education	1(1-0-2)
ILSE 658 Research Seminar in Innovative Learning	1(1-0-2)

**Elective Courses no less than**

ILSE 604 Computers and Other Technologies in Science Teaching	3(2-2-5)
ILSE 606 Mini Project Research in Science, Mathematics and Technology Education	4(0-12-4)
ILSE 614 Scientific Attitude for Science Educators	2(2-0-4)
ILSE 625 Chemistry Education	2(2-0-4)
ILSE 631 Biology Education	2(2-0-4)
ILSE 642 Physics Education	2(2-0-4)
ILSE 652 Mathematical Education	2(2-0-4)
ILSE 653 Computer Science Education	2(2-0-4)
ILSE 654 Technology Education	2(2-0-4)
ILSE 655 Measurement and Evaluation in Education	2(2-0-4)

**Dissertation**

ILSE 799 Dissertation	48(0-192-0)
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**Plan 2 For students with Master's degree****Pre-requisite Courses**

ILSE 603 Basic Knowledge of Education	2(2-0-4)
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**Required Courses**

ILSE 609 Nature, History, and Philosophy of Science	3(3-0-6)
ILSE 656 Innovations in Science and Technology for Development of Learning Process	3(3-0-6)
ILSE 657 Research Seminar in Science and Technology Education	1(1-0-2)
ILSE 658 Research Seminar in Innovative Learning	1(1-0-2)

**Elective Courses no less than**

ILSE 601 Science Teaching	2(2-0-4)
ILSE 604 Computers and Other Technologies in Science Teaching	3(2-2-5)
ILSE 606 Mini Project Research in Science, Mathematics and Technology Education	4(0-12-4)
*ILSE 614 Scientific Attitude for Science Educators	2(2-0-4)
ILSE 616 Research in Science and Technology Education	3(3-0-6)
ILSE 625 Chemistry Education	2(2-0-4)
ILSE 631 Biology Education	2(2-0-4)
ILSE 642 Physics Education	2(2-0-4)
ILSE 652 Mathematical Education	2(2-0-4)
ILSE 653 Computer Science Education	2(2-0-4)

ILSE 654 Technology Education	2(2-0-4)
ILSE 655 Measurement and Evaluation in Education	2(2-0-4)
<b>Dissertation</b>	
ILSE 699 Dissertation	36(0-144-0)
<b>* These May Change in Cases Where There are Suggestions for The Improvement of The Curriculum</b>	

### Additional advantages of the programme

To produce graduates who are able to research and develop educational innovations, to manage learning in appropriate way and correspond to social context, and to effectively and efficiency transform knowledge in science, mathematics, and technology.

### Details of Scholarships

1. Scholarship of the 60<sup>th</sup> Year of the Supreme Reign of His Majesty King Bhumibol Adulydej.
2. Grant for Research Presentation at International Conference

### Additional Information for Applicants

Research project emphasizes on research in innovation and development of learning process. Multimedia for teaching and learning are novel created and adapted from generally available materials.

### Proposal / Concept Paper

A candidate must submit research proposal ranges from 1,500 to 3,500 words.

The proposal should

- clearly define the topic you are interested in
- represent an original idea of your research
- Identify and develop interesting research questions and objectives
- demonstrate the way to conduct research, the expected results are shown
- be professional - it should be typed, in English, well structured with suitable headings and clear and legible

### Application Process

Application is only available via online application at [www.grad.mahidol.ac.th](http://www.grad.mahidol.ac.th)

### Required Documents

Prepare the following required documents to submit via online admission system or post:

1. Completed an Online Application at [www.grad.mahidol.ac.th](http://www.grad.mahidol.ac.th) which comprised with
  - Form A** : Application Form
  - Form B** : Background and Proposed Field of Study
  - Form C** : Recommendation Forms (directly submitted by at least 2 referees)
2. Two copies of Degree Certificate (with officially certified English translation)
3. Two copies of Academic Transcript (with officially certified English translation)
4. Two copies of Recent Photos (Passport size)
5. Two copies of Passport
6. Two copies of English certificate (TOEFL/ IELTS/ MU-Grad Test)

#### (For Doctoral Program)

- TOEFL ITP score of at least 500, TOEFL Internet-based score of 61, or IELTS score of 5

#### (For Master's Program)

- TOEFL ITP score of at least 480, TOEFL Internet-based score of 54, IELTS score of 5 or MU GRAD TEST score of 60.

### Notes

- Only accept TOEFL ITP score from examination center arranged by Faculty of Graduate Studies, Mahidol University.
- TOEFL ITP taken from other domestic and overseas institutes are invalid.
- The test date must be within previous 2 years before application date

- Applicant who obtained a valid English score must submit an **official score certificate** along with your application. Otherwise, your English score will not be considered.
  - Detail of English Competency Standard for Admission:  
<http://www.grad.mahidol.ac.th/en/current-students/language-center.php>
7. Two copies of Curriculum Vitae
  8. Two copies of Statement of Purposes and Career Goals
  9. Two copies of Current bank statement / Scholarship letter (if any)
  10. Two copies of Concept paper / research proposal (recommended for all applicants)
  11. Two copies of additional documents may be requested by each program (such as letter of work experience / professional license/ related certificates and awards)

**Submitting documents via online admission system.**

- All documents must be in pdf format (maximum size 2 MB)
- Recent photograph must be in jpeg format only (maximum size 2 MB)

**Job option after graduation**

- Teacher and professional in science, mathematics, and technology education
- Educator and researcher in science, mathematics, and technology education

**Further information may be obtained from the Director of Graduate Studies, Science and Technology Education:**

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**Program Coordinator**

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- Notes**
1. The programme of Science and Technology Education requires students to study the pre - requisite course:
    - ILSE 603 Basic Knowledge in Education                      2 Credits
    - SCID 500 Cell and Molecular Biology                              3 Credits
  2. For more education information : **[www.grad.mahidol.ac.th](http://www.grad.mahidol.ac.th)**

**For more information please contact The Student Admission Section.  
Tel. 0 2441 4125 ext. 208-210, 0 2441 9129, E-mail: [gradinter@mahidol.ac.th](mailto:gradinter@mahidol.ac.th)**