



Doctor of Philosophy Program  
in Technology-Enhanced Learning and Innovation  
(International Program)  
(2019 New Program)

Faculty of Industrial Education and Technology  
King Mongkut's Institute of Technology Ladkrabang

**Doctor of Philosophy Program  
in Technology-Enhanced Learning and Innovation  
2019 New Program**

**Name of Institution** King Mongkut's Institute of Technology Ladkrabang  
**Faculty / Campus / College** Faculty of Industrial Education and Technology  
**Department** Industrial Education

**Part 1: General Information**

**1. Program Title:** Doctor of Philosophy Program in Technology-Enhanced Learning and Innovation

**2. Degree and Field Title**

Full Title : Doctor of Philosophy  
(Technology-Enhanced Learning and Innovation)  
Abbreviation : Ph.D. (Technology-Enhanced Learning and Innovation)

**3. Major subjects (If any)**

None

**4. Total Credits**

The Doctoral program is divided into 2 types. Each type has total credits as below.

Plan A – For the student who graduated in Master Degree – it is emphasized on research by thesis which create new knowledge for 48 credits and might be specify to study in additional subjects or academic activities with no credit counted. Hence total credits will be 48 credits.

Plan B – For the student who graduated in Master Degree – it is emphasized on knowledge and research by study the subjects at least 18 credits and do the high-quality thesis that lead academic and vocation development for another 36 credits. Therefore, Total credits will be at least 54 credits.

## 5. Type of the Program

### 5.1 Type

Doctoral Program

### 5.2 Language

Foreign Language (English)

### 5.3 Admission

Both Thai and Foreign students

### 5.4 Collaboration with other institutes

Program issued specifically by KMITL

### 5.5 Degree Conferment

Single Degree

## 6. Status of the Program and Consideration for the Authorization/Agreement

New Program. Course begins on August 2019

The program has been endorsed by the Academic Committee of KMITL in its

No...../2016

on .....2016

The program has been endorsed by the KMITL Council in its meeting

No...../2016

on .....2016

## 7. Expected Date for Thai Qualification Register (TQR)

Academic Year 2020

## 8. Career Paths

(1) The instructor in Basic Education/Vocational Education/Higher Education from both government and private institute in field of Technology-Enhanced Learning and Innovation or related subjects.

(2) Scholar and researcher in a field of innovation and education technology.

(3) The professional in field of innovation and education technology.

(4) Scholar in a field of training management for both government and private organization.

## 9. Instructor Details

Name - Surname (Academic Position)	Qualification (Field of study), Academic Year	University
1. Asst. Prof. Dr. Sirirat Petsangsri (Educational Technology) 3-1206-00005-309	- Ed.D. (Instructional Design and Technology), 2002 - M.Ed. (Audio Visual Education), 1994 - B.Ed. (English Instruction), 1987	- University of Pittsburgh, U.S.A - Chulalongkorn University - Srinakharinwirot University
2. Dr. Jirarat Sitthiworachart 3-8008-00013-168	- Ph.D. (Computer Science), 2006 - M.Sc. (Information Technology for Manufacture), 2001 - B.B.A. (Business Computer), 1995	- University of Warwick, UK - University of Warwick, UK - Songklanakarin University
3. Assoc. Prof. Dr. Chantana Viriyavejakul 3-7005-00049-490	- Ed.D. (Educational Technology and Communications), 2001 - M.Ed. (Audio Visual Education), 1996 - B.Ed. (Primary Education) (Honors), 1993	- Chulalongkorn University - Chulalongkorn University - Chulalongkorn University

## 10. Location of Study

King Mongkut's Institute of Technology Ladkrabang

## 11. External situations of development Needed to be Considered for the Planning of the Program

### 11.1 Economic Situation/Development

The curriculum development must consider the changing of world society from the agricultural society to the industrial society, information and telecommunication technology society and reaching to the innovative society. Thus, the improvement of manufacturing factors and education in this field have been prioritized in order to improve the leadership in human resources for the disruptive world and enhance the competitiveness under the technology and innovation aspect. Consequently, the development of human resources in

Thailand should be correspondingly with the demand of government and private sectors both internally and internationally.

### **11.2 Social and Cultural Situation/Development**

During the rapid change of world situation in advanced economic competition and globalization rapidly changed in technology development had affected the way of life. Moreover, the development of the country has been affected by many factors; for example, the number of aging societies is greater than labour force, the advancement of science and technology. Thus, it is important to prioritize the development of science and technology, research development and innovation since these aspects can foster the competitive development in Thailand.

Consequently, National Economic and Social Development Plan No. 12 (2017-2021) has accentuated the development of wisdom respected to science and technology, research development, and innovation development. These aspects will be applied to increase the value and productivity of manufacturing, to reinforce the potentiality of Thai competitiveness in global achievement, and to enhance the quality of life. As a result, this will achieve the aim of Sustainable Development Goals: SDGs by the National Economic and Social Development Plan No. 12 advocating wisdom development based on the “strategy no. 1: the reinforcement of human-potential movement” and on the “strategy no. 8 the development of science and technology, research and innovation.” Furthermore, it is correlated with the Thailand 4.0 model which drive the modification of economic structure. To achieve the goal, the collaboration among private sector, public sector, educational institutions, and research institutes play an important role in improving the educational system and management which resulted in the development of overall population in a wide range of science and technology, innovation.

## **12. Effects from 11.1 and 11.2 on the Program Development and the Relation to the Mission of the Institute**

### **12.1 Program Development**

From the above-mentioned effect of economic, social and cultural circumstances, the aim of the curriculum development in doctor of philosophy (Technology-Enhanced Learning and Innovation) is to produce the leader of educational and innovative technology who can develop the innovation to serve the public. In addition to concerning of Thai and

cultural aspects, it is important to introduce the new approach of teaching and learning so that the student can integrate both the knowledge and innovation. Hence, the ultimate goal of this program is to equip the graduate with technology-enhanced learning and innovation who can create educational innovation to benefit the human resources and other innovations. Moreover, this program prepares the graduate to be an innovative entrepreneur with ethics and morals. Furthermore, education will play an important role in the quality of life and inheriting the well-established tradition through innovative education. As a result, the quality of life of public sector will be enhanced and can be adapted to the global changes.

### **12.2 Relation to the Mission of the Institute**

Doctor of Philosophy in Technology-Enhanced Learning and Innovation program development conform to obligation No.1 “Instruction” of King Mongkut’s Institute of Technology Ladkrabang.

## **13. Relation (if any) with Other Programs Open in the Faculty / Other Departments of the Institute (i.e. Subjects open for the Service of the Faculties / Departments or to be Studied with Other Faculties / Departments)**

### **13.1 Subjects/Subject Groups in the Program Available by Other Faculties / Departments / Programs**

- None

### **13.2 Subjects/Subject Groups in the Program Available and Required to be Studied by Other Faculties / Departments / Programs**

- None

### **13.3 Management**

- Instructor that responsible for the program have the conference in planning to manage the steps of the admission plan, study plan, timetable, instructor, thesis advisor and also the program evaluation.

## Curriculum and instructor

### Curriculum

#### Total Credits

<input checked="" type="checkbox"/>	Plan 1.1 (Master Degree graduated)	48	Credits
<input checked="" type="checkbox"/>	Plan 2.1 (Master Degree graduated)	54	Credits

#### Curriculum Structure

	<b>Plan 1.1 (Master Degree graduated)</b>	<b>48</b>	<b>Credits</b>
	A. Thesis Courses	48	Credits
	<b>Plan 2.1 (Master Degree graduated)</b>	<b>54</b>	<b>Credits</b>
	A. Thesis Courses	36	Credits
	B. Compulsory Courses	12	Credits
	- General Compulsory Courses	6	Credits
	- Major Compulsory Courses	6	Credits
	C. Elective Courses	6	Credits
	D. Seminar Courses (no credit count)	2	Credits

### Courses

#### Plan 1.1 (Master Degree graduated)

##### A. Thesis Courses 48 Credits

Credits (Lecture-Practice-Self Study hours)

03258901	DISSERTATION	48 (0-144-0)
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#### Plan 2.1 (Master Degree graduated)

##### A. Thesis Courses 36 Credits

Credits (Lecture-Practice-Self Study hours)

03258902	DISSERTATION	36 (0-108-0)
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##### B. Compulsory Courses 12 Credits

- General Compulsory Courses 6 Credits

Credits (Lecture-Practice-Self Study hours)

03258001	ADVANCED RESEARCH METHODOLOGY IN EDUCATION	3 (3-0-6)
03258002	ADVANCED INSTRUCTIONAL SYSTEM DESIGN	3 (3-0-6)

- Major Compulsory Courses 6 Credits

Credits (Lecture-Practice-Self Study hours)

03258103	EMERGING TRENDS IN TECHNOLOGY-ENHANCED LEARNING AND INNOVATION	3 (3-0-6)
03258104	COGNITIVE SCIENCE AND INNOVATION IN EDUCATIONAL TECHNOLOGY	3 (3-0-6)

**C. Elective Courses 6 Credits**

Credits (Lecture-Practice-Self Study hours)

03258205	DIFFUSION OF INNOVATION AND EDUCATIONAL TECHNOLOGY	3 (3-0-6)
03258206	EVALUATION OF EDUCATIONAL INNOVATION	3 (3-0-6)
03258207	ADVANCED STATISTICS FOR RESEARCH	3 (3-0-6)
03258208	BLENDED LEARNING ENVIRONMENTS	3 (3-0-6)
03258209	COMPUTER AS A COGNITIVE TOOL	3 (3-0-6)
03258210	DESIGNING PROBLEM-BASED LEARNING ENVIRONMENTS	3 (3-0-6)
03258211	DEVELOPING E-LEARNING ENVIRONMENTS	3 (3-0-6)
03258212	LEARNING AND TEACHING WITH SOCIAL MEDIA	3 (3-0-6)
03258213	PRACTICUM IN INNOVATION AND EDUCATIONAL TECHNOLOGY	3 (3-0-6)
03258214	SELECTED ISSUE IN INNOVATION AND EDUCATIONAL TECHNOLOGY ENHANCED LEARNING	3 (3-0-6)
03258215	ESTABLISHING AND MANAGING A BUSINESS IN EDUCATION	3 (3-0-6)
03258216	ENTREPRENEURSHIP AND TECHNOLOGY INNOVATIONS IN EDUCATION	3 (3-0-6)
03258217	BIG DATA ANALYTICS	3 (2-2-5)

**Note** Besides the elective subject that specify student can select other subjects from Doctor of Philosophy program of Faculty of Industrial Education and Technology, King Mongkut's Institute of Technology Ladkrabang. Every subject that specify in the program approved by the program committee.



D. Seminar Courses 2 Credits (no credit count)

Credits (Lecture-Practice-Self Study hours)

03258801	TECHNOLOGY-ENHANCED LEARNING AND INNOVATION SEMINAR 1	1 (0-2-2)
03258802	TECHNOLOGY-ENHANCED LEARNING AND INNOVATION SEMINAR 2	1 (0-2-2)

Study Plan

Plan A.1

1<sup>st</sup> Year, 1<sup>st</sup> Semester

Code	Subject	Amount of credits
03258901	DISSERTATION	8 (0-24-0)
Total of credits		8

1<sup>st</sup> Year, 2<sup>nd</sup> Semester

Code	Subject	Amount of credits
03258901	DISSERTATION	8 (0-24-0)
Total of credits		8

2<sup>nd</sup> Year, 1<sup>st</sup> Semester

Code	Subject	Amount of credits
03258901	DISSERTATION	8 (0-24-0)
Total of credits		8

2<sup>nd</sup> Year, 2<sup>nd</sup> Semester

Code	Subject	Amount of credits
03258901	DISSERTATION	8 (0-24-0)
Total of credits		8

3<sup>rd</sup> Year, 1<sup>st</sup> Semester

Code	Subject	Amount of credits
03258901	DISSERTATION	8 (0-24-0)
Total of credits		8

3<sup>rd</sup> Year, 2<sup>nd</sup> Semester

Code	Subject	Amount of credits
03258901	DISSERTATION	8 (0-24-0)
Total of credits		8

Total Credits 48 Credits

Plan B.1

1<sup>st</sup> Year, 1<sup>st</sup> Semester

Code	Subject	Amount of credits
03258001	ADVANCED RESEARCH METHODOLOGY IN EDUCATION	3 (3-0-6)
03258103	EMERGING TRENDS IN TECHNOLOGY- ENHANCED LEARNING AND INNOVATION	3 (3-0-6)
032582xx	FREE ELECTIVE (1)	3 (3-0-6)
Total of credits		9

1<sup>st</sup> Year, 2<sup>nd</sup> Semester

Code	Subject	Amount of credits
03258002	ADVANCED INSTRUCTIONAL SYSTEM DESIGN	3 (3-0-6)
03258104	COGNITIVE SCIENCE AND INNOVATION IN EDUCATIONAL TECHNOLOGY	3 (3-0-6)
032582xx	FREE ELECTIVE (2)	3 (3-0-6)

03258801	Technology-Enhanced Learning and Innovation SEMINAR 1	1 (0-2-2)
<b>Total of credits</b>		<b>9</b>

2<sup>nd</sup> Year, 1<sup>st</sup> Semester

Code	Subject	Amount of credits
032582xx	FREE ELECTIVE (3)	3 (3-0-6)
03258802	Technology-Enhanced Learning and Innovation SEMINAR 2	1 (0-2-2)
<b>Total of credits</b>		<b>3</b>

2<sup>nd</sup> Year, 2<sup>nd</sup> Semester

Code	Subject	Amount of credits
03258902	DISSERTATION	12 (0-36-0)
<b>Total of credits</b>		<b>12</b>

3<sup>rd</sup> Year, 1<sup>st</sup> Semester

Code	Subject	Amount of credits
03258902	DISSERTATION	12 (0-36-0)
<b>Total of credits</b>		<b>12</b>

3<sup>rd</sup> Year, 2<sup>nd</sup> Semester

Code	Subject	Amount of credits
03258902	DISSERTATION	12 (0-36-0)
<b>Total of credits</b>		<b>12</b>

Total Credits 54 Credits

**Course Description**

Course description in doctoral program (Appendix C.)

### 3.2 Instructor Details

#### 3.2.1 Instructor responsible for the program

Name - Surname	Qualification/Field of study/ Institute/Academic Year	Academic Work (Details in Appendix G)
1. Asst. Prof. Dr. Sirirat Petsangsri (Educational Technology) 3-1206-00005-309	- Ed.D. (Instructional Design and Technology), University of Pittsburgh, U.S.A, 2002 - M.Ed. (Audio Visual Education), Chulalongkorn University, 1994 - B.Ed. (English Instruction), Srinakharinwirot University, 1987	1. Research - A Development of Constructionism Learning Skills Model for Internship Student Teachers in Thailand - Space Learning Model for Flipped Classroom: Startup to Improve Learning and Innovation Skills in Higher Education. - Thai Vocational Internship Student Teacher Development thought a Constructionism Learning Skills Model 2. Textbook - 3. Instruction - New Paradigms In Educational Technology - Innovation And Information Technology In Education - Learning And Classroom Management - E-Learning Management - Creative in Educational Technologies

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
2. Dr. Jirarat Sitthiworachart 3-8008-00013-168	<ul style="list-style-type: none"> <li>- Ph.D. (Computer Science), University of Warwick, UK, 2006</li> <li>- M.Sc. (Information Technology for Manufacture), University of Warwick, UK, 2001</li> <li>- B.B.A. (Business Computer), Songklanakarin University, 1995</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- Facebook used for Fostering Student Academic Engagement and Higher-order Thinking Skills, Veridian E-Journal: International Humanities, Social Sciences and arts</li> <li>- Exploring the impact of a flexible, technology-enhanced teaching space on pedagogy, Innovations in Education and Teaching International</li> <li>- Incorporating technologies into a flexible teaching space, British Journal of Educational Technology</li> </ul> <p><b>2. Textbook</b></p> <ul style="list-style-type: none"> <li>-</li> </ul> <p><b>3. Instruction</b></p> <ul style="list-style-type: none"> <li>- New Paradigms In Educational Technology</li> <li>- Innovation And Information Technology In Education</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
3. Assoc. Prof. Dr. Chantana Viriyavejakul 3-7005-00049-490	<ul style="list-style-type: none"> <li>- Ed.D. (Educational Technology and Communications), Chulalongkorn University, 2001</li> <li>- M.Ed. (Audio Visual Education), Chulalongkorn University, 1996</li> <li>- B.Ed. (Primary Education) (Honors), Chulalongkorn University, 1993</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- Development Of Business Learning Curriculum To Develop Human Resources Through Web-Based Collaborative Learning To Enhance Performance With Technology And Communication Education</li> <li>- Development of a problem-based learning model using a virtual learning environment</li> <li>- A Blended Learning Model for Learning Achievement Enhancement of Thai Undergraduate Students</li> </ul> <p><b>2. Textbook</b></p> <ul style="list-style-type: none"> <li>- Work quality control</li> <li>- Teaching technique for teacher</li> <li>- Vocation training technique and study technique</li> </ul> <p><b>3. Instruction</b></p> <ul style="list-style-type: none"> <li>- New Paradigms In Educational Technology</li> <li>- Computer as A Tool for Cognitive Development</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<ul style="list-style-type: none"> <li>- Design a lesson by Web</li> <li>- Internet for Education</li> <li>- Media writing for education</li> </ul>

### 3.2.2 Instructor of the program

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
<p>1. Asst. Prof. Dr. Thanin Ratana-o-larn (Education) 3-1206-00166-531</p>	<ul style="list-style-type: none"> <li>- Ed.D. (Educational Research Methodology) Chulalongkorn University, 2010</li> <li>- M.P.A. (Public and Private Management) (Honors) National Institute of Development Administration-NIDA, 2003</li> <li>- B.Acc. (Accountancy) Kasetsart University, 2000</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- Development of a problem-based learning model using a virtual learning environment</li> <li>- Sustainable Leadership of Vocational College Administrators : Documentary Research.</li> <li>- The development of a structural equation model of graduate students' statistics achievement</li> </ul> <p><b>2. Textbook</b></p> <ul style="list-style-type: none"> <li>- Education Research</li> </ul> <p><b>3. Instruction</b></p> <ul style="list-style-type: none"> <li>- Education Research</li> <li>- Statistics for Research</li> <li>- Advanced Statistics for Research</li> <li>- Advanced Statistics Multivariate Analysis</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
2. Assoc. Prof. Dr. Punnee Leekitchwatana (Educational Research) 3-1014-00658-644	- Ed.D. (Curriculum Research and Development) Srinakharinwirot University, 1984 - M.Ed. (Science Education) Chulalongkorn University, 1977 - B.Ed. (Teaching Science) Chulalongkorn University, 1975	<b>1. Research</b> - Appropriate Thai High School Student Internet Behaviour: A Hierarchical Linear Model Analysis - Program Development for Management and record the grade for instructor of Bangkok Suvarnabhumi University - Computer Lesson Development helps teaching in the topic of paper model creation for Vocational Certificate in Central Men Correctional Institution Young Offenders <b>2. Textbook</b> - Educational Research - Educational Research Methodology <b>3. Instruction</b> - Educational Research - Statistics and Educational Research - Statistics for Research - Science Curriculum Science Principle of Education - Research Methodology



Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<ul style="list-style-type: none"> <li>- Educational Psychology</li> <li>- Environmental Education</li> <li>- Computer Design for Education</li> </ul>
<p>3. Asst. Prof. Dr. Thanogsak Sovajassatakul (Industrial Education) 3-2099-00120-071</p>	<ul style="list-style-type: none"> <li>- Ph.D. (Learning Technological Innovation) King Mongkut's University of Technology Thonburi, 2011</li> <li>- M.S.Tech.Ed. (Vocational Education Management) King Mongkut's Institute of Technology Ladkrabang, 1995</li> <li>- B.B.A. (Marketing) Dhurakij Pundit University, 1990</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- A Development of Blended Learning With The Integration of Web-Based Instruction Via Cloud Computing on Bench Work And The Electronic Circuits Of Undergraduate Students</li> <li>- Concept and Principles of Assistive e-Learning System with Multinary Learning for Hearing-impaired Student</li> <li>- A Development Of Web-Based Instruction Via Stem Education Activities On Program Application For Grade 9 Students</li> <li>- A Development Of Web-Based Instruction By Constructivism Theory On Photoelectric Effect Lesson For Grade 12 Students</li> </ul> <p><b>2. Textbook</b></p> <ul style="list-style-type: none"> <li>- Information Technology</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<b>3. Instruction</b> <ul style="list-style-type: none"> <li>- Principle of Education</li> <li>- Curriculum Development</li> <li>- Teaching Principle and Methodology</li> <li>- Information Technology for Education</li> </ul>
4. Assoc. Prof. Attarporn Ridhikerd (Educational Technology) 3-1005-01340-215	<ul style="list-style-type: none"> <li>- M.S.Tech.Ed. (Technical Education Technology) King Mongkut's University of Technology North Bangkok, 1992</li> <li>- B.Ed. (Industrial Design) College of Teacher Education Phranakhon, 1984</li> </ul>	<b>1. Research</b> <ul style="list-style-type: none"> <li>- A Development Of Blended Learning With The Integration Of Web-Based Instruction Via Cloud Computing on Bench Work And The Electronic Circuits Of Undergraduate Students</li> <li>- A development of mobile learning on new paradigms in educational technology</li> <li>- The development of electronics book on composition photography for vocational certificate level</li> </ul> <b>2. Textbook</b> <ul style="list-style-type: none"> <li>- Television for Education</li> <li>- Teaching Media Production</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<p><b>3. Instruction</b></p> <ul style="list-style-type: none"> <li>- Innovation and Information Technology for Education</li> <li>- Teaching Principle and Methodology</li> <li>- Principle of Education</li> <li>- Educational Photography</li> <li>- Teaching Media Production</li> <li>- TV Program Production for Teaching</li> <li>- Printing Photography</li> <li>- Material Technology</li> <li>- Thesis</li> </ul>
<p>5. Assoc. Prof. Dr. Paitoon Pimdee (Education) 3-4505-00373-300</p>	<ul style="list-style-type: none"> <li>- Ph.D. (Environment) Mahasarakham University, 2014</li> <li>- B.Econ. (Economics) Sukhothai Thammathirat Open University, 2001</li> <li>- M.S. (Science Education) King Mongkut's Institute of Technology Ladkrabang, 1999</li> <li>- B.S. (Chemistry) Chandrakasem Rajabhat University, 1995</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- Water Ozonisation/Ozonation for ASEAN Environmental Resource Sustainability: A Structural Equation Model Analysis</li> <li>- Causal Relationship Model of Thai Student Energy Conservation Behavior</li> <li>- Sufficiency Economy: Demission of Social Capital Development to the Pace of Change in, 21st Century of Thailand.</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<p><b>2. Textbook</b></p> <ul style="list-style-type: none"> <li>- Environmental Study</li> </ul> <p><b>3. Instruction</b></p> <ul style="list-style-type: none"> <li>- Curriculum and Instruction</li> <li>- Measurement And Evaluation on Learning Outcome In Science</li> <li>- Selected Issue in Computer Education</li> <li>- Research Methods in Education</li> <li>- Seminar in Science Education</li> </ul>
<p>6. Asst. Prof. Dr. Thiyaporn Kantathanawat (Educational Psychology) 3-1008-00688-876</p>	<ul style="list-style-type: none"> <li>- D.S. (Applied Behavioral Science Research) Srinakharinwirot University, 2012</li> <li>- M.Ed. (Statistics for Educational Research) Srinakharinwirot University, 2003</li> <li>- B.Soc.Sc. (Social Work) Thammasat University, 2000</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- Operational paradigm in preventing and resolving citizens' drug problem</li> <li>- Conceptual study of creative problem solving process: Aiming to improve undergraduate computer Education students</li> <li>- Factors that affect the validity for learning behavior of the undergraduate students at King Mongkut's Institute of Technology Ladkrabang (KMITL)</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<p><b>2. Textbook</b></p> <p>-</p> <p><b>3. Instruction</b></p> <ul style="list-style-type: none"> <li>- Educational Psychology</li> <li>- Research Methods In Education</li> <li>- Seminar in Science Education</li> <li>- Science Project</li> <li>- Family Education</li> </ul>
<p>7. Assoc. Prof. Dr. Suwanna (Old Name Papaikan) Innoi (Industrial Education) 3-1803-00151-555</p>	<ul style="list-style-type: none"> <li>-Ph.D. (Population Education) Mahidol University, 2015</li> <li>- M.S. (Science Education) King Mongkut's Institute of Technology Ladkrabang, 2006</li> <li>- M.S. (Computer Science) Valaya Alongkorn Rajabhat University, 2004</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- Factors that affect the validity for learning behavior of the undergraduate students at King Mongkut's Institute of Technology Ladkrabang (KMITL)</li> <li>- Study Result Development of Psychology Student in Topic of Aggressive Teaching Technique</li> <li>- Database Searching System Development List of Academic Journal and Meeting in Graduated Study Faculty of Industrial Education and Technology King Mongkut's Institute of Technology Ladkrabang</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<p><b>2. Textbook</b></p> <ul style="list-style-type: none"> <li>- Teacher Spirit Under Free Capitalism Limitless of Education</li> <li>- Educational Innovation and Information Technology</li> <li>- Educational Technology and Innovation Center Management</li> </ul> <p><b>3. Instructions</b></p> <ul style="list-style-type: none"> <li>- Science Project</li> <li>- Research Methods In Education</li> <li>- Seminar in Science Education</li> </ul>
<p>8. Asst. Prof. Dr. Piyapong Sumettikoon (Education Management) 3-5299-00408-446</p>	<ul style="list-style-type: none"> <li>- Ed.D. (Educational Administration), Baylor University, USA, 2003</li> <li>- M.B.A. (Entrepreneurship), Baylor University, USA, 1997</li> <li>- B.B.A. (Marketing Management), Baylor University, USA, 1994</li> </ul>	<p><b>1. Research</b></p> <ul style="list-style-type: none"> <li>- Designing Simulation for Assesseing People Skills and Competencies of School Leaders in Thailand</li> <li>- Teacher's Academic Leadership Reinforcement Strategies for Educational Quality Improvement of the Member Countries in the Association of South East Asian Nations (ASEAN).</li> </ul>

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
		<ul style="list-style-type: none"> <li>- The Use of Modern Technology and Social Media in Museum: Case Study The Museum in Korea, Taiwan, Japan and Singapore</li> <li><b>2. Textbook</b></li> <li>- Smart Village: Second home of children in the future</li> <li>- Study management idea</li> <li>- Academic Management and Educational Quality Assurance</li> <li><b>3. Instruction</b></li> <li>- Educational Psychology</li> <li>- Educational Quality Assurance</li> <li>- Language and Culture for Teachers</li> <li>- Writing and Speaking in the Professions</li> <li>- Introduction to Investment</li> <li>- I Love KMITL</li> <li>- Rebranding Life</li> <li>- Foundation English</li> </ul>

### 3.2.3 Special Instructor

Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
1. Prof. Dr. Chaiyong Brahmawong	<ul style="list-style-type: none"> <li>- Ph.D. in Educational Technology (University of Southern California, U.S.A.</li> <li>- M.S. in Education (School Administration and Supervision) University of Southern California, U.S.A.</li> <li>- M.Ed. (Audio Visual Education) Chulalongkorn University</li> <li>- B.Ed. (English/Mathematics teaching) Chulalongkorn University</li> </ul>	Distance Learning officer Bangkok Thonburi University
2. Prof. Dr. Ravewan Shinatrakool	<ul style="list-style-type: none"> <li>- Ph.D. (Science Education) University of Missouri Columbia; U.S.A.</li> <li>- Ed.S. (Math Education) University of Missouri Columbia; U.S.A.</li> <li>- B.Ed. (Mathematics) College of Education Bangsaen</li> </ul>	Pensioner
3. Assoc. Prof. Jintavee Khlaisang	<ul style="list-style-type: none"> <li>- Ed.D. in Higher Education (Texas A&amp;M University-Commerce, USA)</li> <li>- MS. in Higher Education Teaching (Texas A&amp;M University-Commerce, U.S.A.)</li> <li>- B.Ed. (Primary School English Teaching) Chulalongkorn University</li> </ul>	Faculty of Education Chulalongkorn University
4. Dr. Poonsri Vate-U-Lan	<ul style="list-style-type: none"> <li>- Ed.D. (Royal Melbourne Institute of Technology University (RMIT)), Australia</li> <li>- M.Ed. (Srinakharinwirot University), Thailand</li> <li>- B.Com.Arts (Sukhothai Thammathirat University), Thailand</li> </ul>	Assumption University of Thailand (International English Language University)



Name - Surname	Qualification/Field of study/ Institute/ Academic Year	Academic Work (Details in Appendix G)
5. Asst. Prof. Dr. Panita Wanpiroon	<ul style="list-style-type: none"> <li>- Ed.D. (Educational Technology and Communication) Chulalongkorn University</li> <li>- M.Ed. (Educational Technology) Burapha University</li> <li>- B.Ed. (Educational Technology) Burapha University</li> </ul>	Faculty of Technical Education King Mongkut's University of Technology North Bangkok
6. Assoc. Prof. Dr. Thiwat Maneechot	<ul style="list-style-type: none"> <li>- Ed.D. (Measurement and Evaluation in Education) Chulalongkorn University</li> <li>- M.Ed. (Educational Measurement) Srinakharinwirot University</li> <li>- B.Ed. (Education Management) Sukhothai Thammathirat Open University</li> </ul>	Faculty of Education Valaya Alongkorn Rajabhat University

## Course Description

### Plan 1.1

#### A. Thesis Subject 48 Credits

03258901      DISSERTATION      48 (0-144-0)

PREREQUISITE : NONE

Study research methodologies and related statistics. Consult thesis advisors for: setting thesis topic; studying related theories; documents; and research results. Write the topic and thesis proposal. Propose the topic and thesis proposal to thesis advisors, organize a seminar for the topic and thesis proposal criticizing, take the topic and thesis proposal examination for conducting the research. Conducting the research under the supervision of thesis advisors. Conducting the research and finishing it up, then organizing a research results, and improving research results. Write an article of the research results in English for disseminating in an international journal which is accepted by the graduate school. Propose the research results in one academic international. Take the final thesis examination after the candidate got an acceptance of printing the article of research result in international journals and presented it in one of international conferences, and the acceptance of short article as well. Improve the research results according to the final thesis examination committee comments, and propose the thesis text for an approval

### Plan 2.1

#### A. Thesis Subject 36 Credits

03258902      DISSERTATION      36 (0-108-0)

PREREQUISITE : NONE

Study in the areas of: related literatures; reference writing, research conceptual framework; related literatures; reference writing; research conceptual framework; population and sample setting; research instrument development; data collection and analysis; and development thesis. Organize a seminar thesis proposal and get an improvement for conducting research. Conduct the research work under the instruction and supervision of thesis advisors, write the research result for disseminating in the international journals and presenting in the international academic conference. Present research result in the international academic conference, disseminate research result in international journals and take the final research examination.

## B. Compulsory Subject 12 Credits

### General Compulsory Subject 6 Credits

03258001      ADVANCED RESEARCH METHODOLOGY IN EDUCATION      3 (3-0-6)

PREREQUISITE : NONE

Research methodology and process in education, research design, mixed method research, action research, application and using advanced statistics for data analysis, conclusion of research, research reporting, dissemination and utilization of research and evaluation and critiques of research.

03258002      ADVANCED INSTRUCTIONAL SYSTEM DESIGN      3 (3-0-6)

PREREQUISITE : NONE

Situate instruction designs within organizational requirements and different frameworks of the psychology of learning, issues of consulting on organization needs, applying theories of instruction, and managing a project, practice presentation skills, working with a client to create a learning environment, designing and presenting a training lesson for a class and developing a course for other organizations.

### Major Compulsory Subject 6 Credits

03258103      EMERGING TRENDS IN TECHNOLOGY-ENHANCED LEARNING      3 (3-0-6)

AND INNOVATION

PREREQUISITE : NONE

The integration of paradigms in innovation and educational technology enhanced learning by focusing on system designing, developing, applying, managing, evaluating, and researching, components, and technological factors; studies from the past, the present, to the future; the integration of educational system design process, and information technology for education.

03258104      COGNITIVE SCIENCE AND INNOVATION IN EDUCATIONAL TECHNOLOGY      3 (3-0-6)

PREREQUISITE : NONE

History, Meaning, Importance of Cognitive Science, Cognitive Science, and Instructional Design in Educational Technology Innovation, Learning Theories Related to Cognitive Sciences, Human Memory, Cognition, New Perspectives on the Dynamics of Cognitive Science such as Situated Cognition, Gamification and Virtual World.

### C. Elective Subjects 6 Credits

03258205      DIFFUSION OF INNOVATION AND EDUCATIONAL TECHNOLOGY      3 (3-0-6)

PREREQUISITE : NONE

Principles, concepts, and theories in diffusion of innovation, innovation recognition and dissemination processes, the use of concepts of educational technology recognition and dissemination processes.

03258206      EVALUATION OF EDUCATIONAL INNOVATION      3 (3-0-6)

PREREQUISITE : NONE

Meaning, Principles, and Scope of Research and Development in Educational Innovation, Types of research and development, Research and Development Design and evaluation.

03258207      ADVANCED STATISTICS FOR RESEARCH      3 (3-0-6)

PREREQUISITE : NONE

Techniques, Methods of statistics analysis of multivariate variables: Two-way ANOVA and ANCOVA and repeated measured design; Multiple regression analysis; multiple analysis of variance, Discriminant analysis and factor analysis and application of statistical programs for data analysis, Including statistical result interpretation.

- 03258208      Blended Learning Environments      3 (3-0-6)  
 PREREQUISITE : NONE  
 The overview of blended learning; planning blended learning; conducting and evaluating blended learning.
- 03258209      COMPUTER AS A COGNITIVE TOOL      3 (3-0-6)  
 PREREQUISITE : NONE  
 Theories, principles, and concepts of intellectual skills, the concept about bringing a computer to help in the development of intellectual skills, use of various computer programs to develop intellectual skills.
- 03258210      DESIGNING PROBLEM-BASED LEARNING ENVIRONMENTS      3 (3-0-6)  
 PREREQUISITE : NONE  
 Study of theories of situated learning, constructivism, cognition, and casebased reasoning, design and develop a learning environment that engages learners in constructive learning and problem solving.
- 03258211      DEVELOPING E-LEARNING ENVIRONMENTS      3 (3-0-6)  
 PREREQUISITE : NONE  
 The overview of e-learning; planning e-learning; design e-learning; conducting and evaluating e-learning.
- 03258212      LEARNING AND TEACHING WITH SOCIAL MEDIA      3 (3-0-6)  
 PREREQUISITE : NONE  
 Apply a range of social media - digital video stories & mini-movies, social networking, & virtual worlds, develop a curriculum module for both teaching & learning and use appropriate technologies required to investigate topics related to Educational Technology.
- 03258213      Practicum in Innovation and Educational Technology      3 (3-0-6)  
 PREREQUISITE : NONE  
 Visit and Apprentice in the Field of Educational Innovation and Technology in The Public or Private Sector, Planning, Job Analysis, and Application of Knowledge to Use at the Workplace.

- 03258214      SELECTED ISSUE IN INNOVATION AND EDUCATIONAL TECHNOLOGY ENHANCED LEARNING      3 (3-0-6)  
 PREREQUISITE : NONE  
 Study around emerging or developing issues and technologies that are relevant to educational technology enhanced learning.
- 03258215      ESTABLISHING AND MANAGING A BUSINESS IN EDUCATION      3 (3-0-6)  
 PREREQUISITE : NONE  
 General, organizational, financial, operational, legal, marketing, and public relation management for starting and running a business in education. Addressing development of core business skills and experiences necessary to become entrepreneurs in education. Navigating important aspects vital to a creation and administration of a business in education. Writing a business plan, patent, trademark, registration, and pitching for funding.
- 03258216      ENTREPRENEURSHIP AND TECHNOLOGY INNOVATIONS IN EDUCATION      3 (3-0-6)  
 PREREQUISITE : NONE  
 Analyze the key forces and challenges in the educational technology sector and how it is creating opportunities for entrepreneurs. Identifying and seizing promising opportunities for technology-driven tools in education. Designing optimal educational technology to reimagine the traditional schooling, change the role of teachers, change the cost of schooling. Address the challenges in schooling with technology innovation in education.
- 03258217      BIG DATA ANALYTICS      3 (3-0-6)  
 PREREQUISITE : NONE  
 Artificial intelligence; Expert system; Data mining (e.g. data mining process, database segmentation, classification, association rule discovery); big data analytics.

#### D. Seminar Subject 2 Credits (No credit count)

03258801      TECHNOLOGY-ENHANCED LEARNING AND INNOVATION SEMINAR 1      1 (0-2-2)

PREREQUISITE : NONE

Seminar, study and pursue experiences on education in Thailand in the areas of : learning management system; research; innovation and technology; and cooperation with communities for providing basic, vocational and higher education. Organizing a seminar with topics related to education in Thailand.

03258802      TECHNOLOGY-ENHANCED LEARNING AND INNOVATION SEMINAR 2      1 (0-2-2)

PREREQUISITE : 03258802 TECHNOLOGY-ENHANCED LEARNING AND  
INNOVATION SEMINAR 1

Seminar, study and pursue experiences on education in oversea in the areas of: learning management system; research; innovation and technology; and cooperation with communities for providing basic, vocational and higher education. Organizing a seminar on the topics related to education as an international standard development.