รายละเอียดของหลักสูตร

หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาวิทยาการคอมพิวเตอร์
(หลักสูตรนานาชาติ/หลักสูตรปรับปรุง พ.ศ. ๒๕๖๖)

DOCTOR OF PHILOSOPHY PROGRAM IN COMPUTER SCIENCE
(INTERNATIONAL PROGRAM/REVISED PROGRAM IN 2023)

(หลักสูตรภาคปกติและภาคพิเศษ)

คณะเทคโนโลยีสารสนเทศและการสื่อสาร และบัณฑิตวิทยาลัย
มหาวิทยาลัยมหิดล

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Doctor of Philosophy Program in Computer Science
(International Program)
Revised Program 2023

Name of Institution Mahidol University

Campus/Faculty/Department Faculty of Inpformation and Communication Technology

Section 1 General Information

1. Curriculum Name

Thai หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ)

English Doctor of Philosophy Program in Computer Science (International Program)

2. Name of Degree and Major

Full Title	Thai:	ปรัชญาดุษฎีบัณฑิต (วิทยาการคอมพิวเตอร์)
Abbreviation	Thai:	ปร.ด. (วิทยาการคอมพิวเตอร์)
Full Title	English:	Doctor of Philosophy (Computer Science)
Abbreviation	English:	Ph.D. (Computer Science)

3. Major Subjects None

4. Required Credits:

4.1 **Plan 1 Research only**

Plan 1.1 For students with Master Degree not less than 48 credits

Plan 1.2 For students with Bachelor's Degree not less than 72 credits

4.2 **Plan 2 Course Work and Research**

Plan 2.1 For students with Master Degree not less than 48 credits

Plan 2.2 For students with Bachelor's Degree not less than 72 credits

5. Curriculum Characteristics

5.1 **Curriculum type/model:** Doctor of Philosophy

5.2 **Language:** English

5.3 **Recruitment:** Both Thai and international candidates

5.4 **Collaboration with Other Universities:** This program is Mahidol University's Program

5.5 **Graduate Degrees Offered to the Graduates:** One degree

6. Curriculum Status and Curriculum Approval

6.1 Revised Program 2023

6.2 Starting in semester 2, academic year 2023 onwards

6.3 Curriculum committee approved the program in its meeting 8/2566. on June 16, 2023

6.4 The Mahidol University Council approved the program in its meeting 595 on August 16, 2003

7. Readiness to Implement/Promote the Curriculum

The curriculum is ready to be announced and has met the quality and standards requirements of the Thailand Quality Framework in year 2026 (3 years after the starting of the program).

8. Opportunities for Graduates

8.1 Computer Scientist

8.2 Computer Science Educator

8.3 Computer Technical Officer

8.4 Information Technology Project Manager

8.5 Information Technology Consultant

9. Name, ID Number, Title and Degree of the Faculty in Charge of the Program

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
1	x-xxxx-xxxxx-xx-x Associate Professor Dr. Suppawong Tuarob	Ph.D. (Computer Science and Engineering) Pennsylvania State University, USA : 2015 M.S. (Industrial Engineering) Pennsylvania State University, USA : 2015 M.SE. (Computer Science and Engineering) University of Michigan, Ann Arbor, USA : 2010 B.SE. (Computer Science) University of Michigan, Ann Arbor, USA : 2009	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
2	x-xxxx-xxxxx-xx-x Associate Professor Dr. Worapan Kusakunniran	Ph.D. (Computer Science and Engineering) University of New South Wales, Australia : 2013 B.Eng. (Computer Engineering) 1st Class Honor University of New South Wales, Australia : 2008	Faculty of Information and Communication Technology
3	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Songsri Tangsripairoj	Ph.D. (Computer Science) Oklahome State University, USA: 2004 M.Sc. (Computer Science) Mahidol University : 1996 B.Sc. (Computer Science) 2nd Class Honors Thammasat University : 1994	Faculty of Information and Communication Technology
4	x-xxxx-xxxxx-xx-x Lecturer Dr. Thanapon Noraset	Ph.D. (Computer Science) Northwestern University, USA : 2018 M.S. (Computer Science) Northwestern University, USA : 2018 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2010	Faculty of Information and Communication Technology

10. Venue for Instruction

Faculty of Information and Communication Technology, Mahidol University

11. External Factors to be Considered in Curriculum Planning

11.1 Economic Situation/Development

This curriculum follows Thailand's 20-Year National Strategy, which describes a vision for improving the nation's competitiveness in the economy and human quality development to increase income per capita and become a developed country. This curriculum supports the National Strategy in 2 different areas, including

Strategy 2: Competitiveness Development, and

Strategy 3: Human Resource Development.

In addition to the 20-Year National Strategy, the Royal Thai Government proposes the Thailand 4.0 policy, which focuses on digital innovation along with the 13th National Economic and Social Development Plan (2023 – 2027), whose Strategic Goal 6 on "Thailand as ASEAN center for smart electronics and digital industry" emphasizes on the development of human resources as well as the research and development of digital innovation.

Therefore, it is necessary to develop organizations and staff to have the potential to use various technologies for enhancing innovation, which requires research developments for both new knowledge creation and the application of computer and information technology blended with the strengths in Thai society. It also corresponds to the Ministry of Education and the strategic plan of Mahidol University, which sets the goals of being a leading university with excellence in research and making full use of information and communication technology. It is, therefore, necessary to have researchers and experts in Cyber Security and Information Assurance who are ready to produce quality research or innovation for Thai society, which follows the philosophy of the Doctor of Philosophy Program in Computer Science.

11.2 Social and Cultural Situation/Development

The development of this curriculum takes social and cultural situations into account. Computer science, the core of computing technology, has now been integrated into people's daily lives, especially artificial intelligence and software development. Computing technology is now used in various business and social activities. New economic and social activities are being created. The country's digital economy development initiative aims to create innovative businesses and enhance business operations. The initiative demands quality software and hardware development. People can now have affordable and convenient access to various services and applications from the Internet Cloud. High-speed networks need access to vast amounts of data, from anywhere in the country, at any time to enhance business and industry. Social networking has become the norm, and people communicate with each other more conveniently than before.

Consequently, people change how they do business and communicate, and this development significantly affects our behavior in business, social and cultural interactions. In order to maintain social, cultural, national, and personal values, this curriculum is set up with the task of educating new generations of researchers about the advantages and disadvantages of computing technologies in various settings, especially for the benefit of society. Our graduates will be equipped with the ethical knowledge required to appropriately choose and apply computing technologies that fit Thai society and culture.

12. The Effects Mentioned in No.11.1 and 11.2 on Curriculum Development and Relevance to the Missions of the University/Institution

12.1 Curriculum Development

The world economy and society have changed quickly and dramatically in recent years due to the widespread use of new computing technologies worldwide. In order to keep up with and foresee this change, this curriculum is designed to develop students understanding and technical ability in computer science content relating to new and advanced technology through research and practice. Graduates must have sufficient knowledge and skills to develop and apply new knowledge and technology to support current and future innovative businesses and technology which improve the country's competitiveness. The design follows the mission of Mahidol University and the Faculty of ICT to provide excellence in education and research for the country and the world.

12.2 Relevance to the Missions of the University/Institution

The Faculty of ICT has missions following the missions of Mahidol University, especially in research and education. This curriculum aims to produce excellent education and research programs that help develop competent graduates in computer science. The graduates will increase national competitiveness, reduce reliance on foreign experts in information and communication technology, and enhance the national economy by applying their knowledge and skills to improve business operations and create innovations according to the country's demand. In addition, the graduates will be proficient in English, the language of modern computing, and equipped with the professional skills necessary to compete internationally. The curriculum also focuses on the ethical use of technology, with professional codes of conduct in alignment with Thai and international culture.

13. Collaboration with Other Curricula of the University

none

Section 2 Information about the Curriculum

1. Philosophy, Justification, and Objectives of the Curriculum

1.1 Philosophy and Justification of the Curriculum

This curriculum focuses on producing graduates with the knowledge and skills comparable to international standards necessary to research to solve challenging scientific and business problems by discovering new knowledge and technology through research in computer science.

1.2 Objectives of the Program (everyone)

After graduation from this program, graduates achieve the qualifications in accordance with the qualification standard for higher education as follows

1.2.1 Demonstrate a comprehensive understanding of the foundations of computer science, an in-depth knowledge of emerging topics in computer science, and expertise in research methodology.

1.2.2 Research to discover new computer science knowledge or related computing problems in other fields.

1.2.3 Adhere to the value of ethics and code of conduct in research, academic, and computer science careers.

1.2.4 Foster strong collaboration and communication skills in English.

1.3 Program Learning Outcomes (PLOs) (everyone)

By the end of the study, graduates will be able to:

1.3.1 Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers.

1.3.2 Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories.

1.3.3 Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically.

1.3.4 Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility.

1.3.5 Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively.

1.3.6 Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review.

2. Plan for Development and Improvement

Plan for Development/Revision	Strategies	Evidences/Indexes
1. Plan for revising Doctor of Philosophy in Computer Science program to comply with the Office of the Higher Education Commission's Post Graduate Curriculum Standard Criterion B.E. 2565.	1. Developing curriculum to comply with the Office of the Higher Education Commission's Post Graduate Curriculum Standard Criterion B.E. 2565. 2. Following-up, reviewing, evaluating, and revising the curriculum according to curriculum revision cycle.	1. Curriculum approval from Mahidol University's Council. 2. Minutes of Meetings of the curriculum administrative committee bi-montly 3. Curriculum auditing report yearly
2. Plan for revising the curriculum to satisfy stakeholders and market demand in order to cope with rapid change of computing technology.	1. Revising the curriculum and course content to satisfy the expected learning outcomes of employers and alumni. 2. Conducting a survey on market demand. 3. Conducting stakeholder meetings to acquires needs, requirements, and suggestions	1. Evaluation of results of graduates yearly 2. Evaluation report of employer satisfaction for graduates. 3. Minutes of Meetings of all stakeholder group at least 1 per meeting per group
3. Plan for faculty development for building research experience and capability in order to apply knowledge and experience in research to improve teaching and research work.	1. Support faculty and staff research activities. 2. Support faculty to provide academic service to agency within and outside university. 3. Support faculty to seek new knowledge from training and conference participation.	1. Publications by faculty in the curriculum 2. Academic services by faculty in the curriculum. 3. Training and conference participation by the faculty.
Plan for improving teaching and learning strategy and assessment to satisfy the program learning outcome	1. Student to give course evaluation at the end of semester 2. Analysis 2. Revising couse specification before and after the semester	1. Course evaluation; once per semester per course 2. Course specification documents (i.e., TQF3 and TQF5)

Section 3 Educational Management System, Curriculum Implementation, and Structure

1. Educational Management System

1.1 System: Two Semester Credit system. 1 Academic Year consists of 2 Regular Semesters, each with not less than 15 weeks of study.

1.2 Summer Session The program does not offer a summer session.

1.3 Credit Equivalence to Semester System None.

2. Curriculum Implementation

2.1 Teaching Schedule

Regular Program: Weekdays.

Special Program: Weekdays evening and weekends.

- Semester 1	August – December
- Semester 2	January – May
- Summer Semester	May - July

2.2 Qualifications of Prospective Students

<u>Plan 1 Research Only</u>

Plan 1.1 For students with a Master's degree

2.2.1.1 Holding a Master's degree or equivalent in computer science, engineering, or other IT-related fields

2.2.1.2 Having at least one peer-reviewed publication in computer science

2.2.1.3 Have a cumulative GPA of not less than 3.5

2.2.1.4 Having an English Proficiency Examination score passes the Faculty of Graduate Studies requirement.

2.2.1.5 Other requirements shall follow those specified by the Faculty of Graduate Studies

2.2.1.6 Qualifications different from 2.2.1.3 – 2.2.1.5 may be considered by the Program Administrative Committee and the Dean of the Faculty of Graduate Studies.

Plan 1.2 For students with a Bachelor's degree

2.2.2.1 Holding a Bachelor's degree or equivalent in computer science, engineering, or other IT-related fields.

2.2.2.2 Having at least one peer-reviewed publication or at least one year of experience in computing-related research or at least 3 years of experience in developing products

2.2.2.3 Having a cumulative GPA of not less than 3.5

2.2.2.4 Having an English Proficiency Examination score passing the Faculty of Graduate Studies requirement

2.2.2.5 Other requirements shall follow those specified by the Faculty of Graduate Studies

2.2.2.6 Qualifications different from 2.2.2.3 – 2.2.2.5 may be considered by the Program Administrative Committee and the Dean of the Faculty of Graduate Studies

Plan 2 Course Work and Research

Plan 2.1 For students with a Master's degree

2.2.3.1 Holding a Master's degree or equivalent in computer science, engineering, or other IT-related fields

2.2.3.2 Having at least one peer-reviewed computer science publication or at least 3 years of experience developing products or research related to computing

2.2.3.3 Having a cumulative GPA of not less than 3.0

2.2.3.4 Having an English Proficiency Examination score passing the Faculty of Graduate Studies requirement

2.2.3.5 Other requirements shall follow those specified by the Faculty of Graduate Studies

2.2.3.6 Qualifications different from 2.2.3.3 – 2.2.3.5 may be considered by the Program Administrative Committee and the Dean of the Faculty of Graduate Studies.

Plan 2.2 For students with a Bachelor's degree

2.2.4.1 Holding a Bachelor's degree or equivalent in the disciplines related to information technology, computer science, engineering, mathematics, physics, medicine, health science, and public health

2.2.4.2 Having at least one peer-reviewed publication or at least 1 years of experience developing products or computing-related research

2.2.4.3 Have a cumulative GPA of not less than 3.0

2.2.4.4 Having an English Proficiency Examination score passing the Faculty of Graduate Studies requirement

2.2.4.5 Other requirements shall follow those specified by the Faculty of Graduate Studies

2.2.4.6 Qualifications different from 2.2.4.3 – 2.2.4.5 may be considered by the Program Administrative Committee and the Dean of the Faculty of Graduate Studies

2.3 Problems Encountered by New Students

Students who enrolled in the program may need help adapting to study for the doctoral degree; they may need more computer science background, English skills for study, and research skills.

2.4 Strategies for Problem Solving/Limited Requirements in No. 2.3

Problems of New Students	Strategies for Problem Solving
computer science background	- Providing guidance on extra-curriculum courses such as Coursera and Linkedin Learning after accepting new students and during the orientation meeting - Providing academic advisor to students to help guide students on a suitable study plan
English skills	- Encourage students to take extra English courses at the Faculty of Graduate Studies - Provide extra English support from the Faculty's English instructor team - Recommend students to audit English courses of the undergraduate program at the Faculty of Information and Communication Technology
Research skills	- Providing an academic advisor to students to help guide students on research methodology - All students in Plan 2.1 and 2.2 must take research methodology course - Students in Plan 1.2 are recommended to audit the research methodology course - Arranging students to join research groups for sharing their knowledge with other doctoral students.

2.5 Five-Year-Plan for Recruitment and Graduation of Students

2.5.1 Regular Program

Plan 1 Research Only

Plan 1.1 For students with Master's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Cumulative numbers	2	4	6	6	6
Expected number of students graduated	-	-	2	2	2

Plan 1.2 For students with Bachelor's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Cumulative numbers	2	4	6	6	6
Expected number of students graduated	-	-	2	2	2

Plan 2 Course work and research

Plan 2.1 For students with Master's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Cumulative numbers	2	4	6	6	6
Expected number of students graduated	-	-	2	2	2

Plan 2.2 For students with Bachelor's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Forth-year student	2	4	6	6	6
Cumulative numbers	-	-	2	2	2
Expected number of students graduated	2	2	2	2	2

2.5.2 Special Program

Plan 1 Research Only

Plan 1.1 For students with Master's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Cumulative numbers	2	4	6	6	6
Expected number of students graduated	-	-	2	2	2

Plan 1.2 For students with Bachelor's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Cumulative numbers	2	4	6	6	6
Expected number of students graduated	-	-	2	2	2

Plan 2 Course work and research

Plan 2.1 For students with Master's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Cumulative numbers	2	4	6	6	6
Expected number of students graduated	-	-	2	2	2

Plan 2.2 For students with Bachelor's Degree

Academic Year	2023	2024	2025	2026	2027
First-year student	2	2	2	2	2
Second-year student	-	2	2	2	2
Third-year student	-	-	2	2	2
Forth-year student	2	4	6	6	6
Cumulative numbers	-	-	2	2	2
Expected number of students graduated	2	2	2	2	2

2.5 Budget based on the plan

Plan 1 Research Only

Plan 1.1 For students with Master's Degree (regular and special program)

Registration fee	**credits**	**Fee per credit**	**Amount (Baht)**
Tuition fee	x	x,xxx	xx,xxx
Thesis registration fee	xx		xx,xxx
Research supplies fee			xxx,xxx
Equipment and facilities maintenance fee			xx,xxx
Total income per student			**xxx,xxx**

Estimated expenses

Variable expenses per student	**Amount (Baht)**
College/university allocation	x,xxx
Position allowance of thesis advisor and committee	xx,xxx
Durable articles, Materials, Living Expenses, and Research Scholarship	xxx,xxx
Total variable expenses per student	**xxx,xxx**
Fixed expenses	
Teaching payment • Seminar course 3 courses x 15 times x 2 Hrs.	xx,xxx
Building cost, Utility fee (Electricity etc.)	x,xxx
Total Fixed expenses	**xx,xxx**

Number of students at break-even point	1	person
Cost of students at break-even point	783,500	Baht
Cost per student at break-even point	391,750	Baht

Plan 1.2 For students with Bachelor's Degree (regular and special program)

Registration fee	**credits**	**Fee per credit**	**Amount (Baht)**
Tuition fee	x	x,xxx	xx,xxx
Thesis registration fee	xx		xxx,xxx
Research supplies fee			xxx,xxx
Equipment and facilities maintenance fee			xx,xxx
Total income per student			**xxx,xxx**

Estimated expenses

Variable expenses per student	**Amount (Baht)**
College/university allocation	x,xxx
Position allowance of thesis advisor and committee	xxx,xxx
Durable articles, Materials, Living Expenses, and Research Scholarship	xxx,xxx
Total variable expenses per student	**xxx,xxx**
Fixed expenses	
Teaching payment ● Seminar course 3 courses x 15 times x 2 Hrs.	xx,xxx
Building cost, Utility fee (Electricity etc.)	x,xxx
Total Fixed expenses	**xx,xxx**

Number of students at break-even point	1	person
Cost of students at break-even point	855,500	Baht
Cost per student at break-even point	427,750	Baht

Plan 2 Course work and research

Plan 2.1 For students with Master's Degree (regular and special program)

Registration fee	**credits**	**Fee per credit**	**Amount (Baht)**
Tuition fee	Xx	x,xxx	xxx,xxx
Thesis registration fee	xx		xx,xxx
Research supplies fee			xxx,xxx
Equipment and facilities maintenance fee			xx,xxx
Total income per student			**xxx,xxx**

Estimated expenses

Variable expenses per student	**Amount (Baht)**
College/university allocation	xx,xxx
Position allowance of thesis advisor and committee	xx,xxx
Durable articles, Materials, Living Expenses, and Research Scholarship	xxx,xxx
Total variable expenses per student	**xxx,xxx**
Fixed expenses	
Teaching payment ● Lecture course 1 course x 15 times x 3 Hrs. ● Lecture course 3 courses x 15 times x 2 Hrs.	xx,xxx

• Seminar course 3 courses x 15 times x 2 Hrs.	
Building cost, Utility fee (Electricity etc.)	xx,xxx
Total Fixed expenses	**xxx,xxx**

Number of students at break-even point	1	person
Cost of students at break-even point	866,800	Baht
Cost per student at break-even point	433,450	Baht

Plan 2.2 For students with Bachelor's Degree (regular and special program)

Registration fee	**credits**	**Fee per credit**	**Amount (Baht)**
Tuition fee	Xx	x,xxx	xxx,xxx
Thesis registration fee	xx		xx,xxx
Research supplies fee			xxx,xxx
Equipment and facilities maintenance fee			xx,xxx
Total income per student			**xxx,xxx**

Estimated expenses

Variable expenses per student	**Amount (Baht)**
College/university allocation	xx,xxx
Position allowance of thesis advisor and committee	xx,xxx
Durable articles, Materials, Living Expenses, and Research Scholarship	xxx,xxx
Total variable expenses per student	**xxx,xxx**
Fixed expenses	
Teaching payment • Lecture course 4 courses x 15 times x 3 Hrs. • Lecture course 3 courses x 15 times x 2 Hrs. • Seminar course 3 course x 15 times x 2 Hrs.	xxx,xxx
Building cost, Utility fee (Electricity etc.)	xx,xxx
Total Fixed expenses	**xxx,xxx**

Number of students at break-even point	2	persons
Cost of students at break-even point	1,120,400	Baht
Cost per student at break-even point	560,200	Baht

2.6 Educational System: Classroom Mode

2.8 Transfer of Credits, Courses and Cross University Registration

Transfer of credits is in compliance with Mahidol University's regulations on Graduate Studies. Should you need more information, please visit the Faculty of Graduate Studies website: www.graduate.mahidol.ac.th.

3. Curriculum and Instructors

3.1 Curriculum

3.1.1 Number of credits

Plan 1 Research Only

Plan 1.1 For students with Master Degree not less than 48 credits

Plan 1.2 For students with Bachelor's degree not less than 72 credits

Plan 2 Course Work and Research

Plan 2.1 For students with Master Degree not less than 48 credits

Plan 2.2 For students with Master Degree not less than 72 credits

3.1.2 Curriculum Structure

The curriculum structure is set in compliance with the Announcement of The Commission on Higher Education Standard on the subject of Criteria and Standards of Graduate Studies B.E. 2565, The curriculum structure for this Doctor of Philosophy degree, plan 1.1, plan 1.2, plan 2.1 and 2.2 are as follows:

	Plan 1.1 (credits)	**Plan 1.2 (credits)**	**Plan 2.1 (credits)**	**Plan 2.2 (credits)**
Required courses	-	-	9	12
Elective courses not less than	-	-	3	12
Thesis	48	72	36	48
Total not less than	**48**	**72**	**48**	**72**

3.1.3 Courses in the curriculum

Plan 1.1 For students with Master's Degree

A Student who selects plan 1.1 must register for three seminar courses with an audit.

Plan 1.2 For students with Bachelor's Degree

A Student who selects plan 1.2 must register for three seminar courses and Research Methodology in Computer Science with an audit.

Plan 2.1 For students with Master's Degree and
Plan 2.2 For students with Bachelor's Degree

1) Required Courses

1.1 Required Courses for Plan 2.1 For students with master's degree 9 credits

			Credits (lecture – practice – self-study)
ITCS	531	Mathematics for Computer Science	2 (2-0-4)
ทสคพ	531	คณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	
ITCS	532	Foundations of Computational Science	2 (2-0-4)
ทสคพ	532	รากฐานของวิทยาศาสตร์เชิงคำนวณ	
* ITCS	533	Research Methodology in Computer Science	2 (2-0-4)
ทสคพ	533	ระเบียบวิธีวิจัยทางวิทยาการคอมพิวเตอร์	
ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ทสคพ	671	การสัมมนาทางวิทยาการคอมพิวเตอร์ ๑	
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ทสคพ	672	การสัมมนาทางวิทยาการคอมพิวเตอร์ ๒	
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ทสคพ	673	การสัมมนาทางวิทยาการคอมพิวเตอร์ ๓	

* new course

1.2 Required Courses for Plan 2.2 For students with Bachelor's degree 12 credits

ITCS	523	Data Sciences Essentials	3 (3-0-6)
ทสคพ	523	ส่วนสำคัญของวิทยาการข้อมูล	
ITCS	531	Mathematics for Computer Science	2 (2-0-4)
ทสคพ	531	คณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	
ITCS	532	Foundations of Computational Science	2 (2-0-4)
ทสคพ	532	รากฐานของวิทยาศาสตร์เชิงคำนวณ	
* ITCS	533	Research Methodology in Computer Science	2 (2-0-4)
ทสคพ	533	ระเบียบวิธีวิจัยทางวิทยาการคอมพิวเตอร์	
ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ทสคพ	671	การสัมมนาทางวิทยาการคอมพิวเตอร์ ๑	
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ทสคพ	672	การสัมมนาทางวิทยาการคอมพิวเตอร์ ๒	
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ทสคพ	673	การสัมมนาทางวิทยาการคอมพิวเตอร์ ๓	

* new course

2) Elective Courses

2.1 Elective Courses for Plan 2.1 For students with master's degree of not less than 3 credits

A student can register for an elective course(s) s as follows:

			Credits (lecture – practice – self-study)
ITCS	638	Networks and Distributed Systems Security	3 (3-0-6)
ทสคพ	638	ความมั่นคงของระบบเครือข่ายและระบบแบบกระจาย	
ITCS	642	Software Engineering Management	3 (3-0-6)
ทสคพ	642	การจัดการวิศวกรรมซอฟต์แวร์	
ITCS	646	Requirements Engineering	3 (3-0-6)
ทสคพ	646	วิศวกรรมความต้องการ	
ITCS	687	Advanced Computer Security	3 (3-0-6)
ทสคพ	687	ความมั่นคงของคอมพิวเตอร์ขั้นสูง	
* ITCS	692	Advanced Topics in Artificial Intelligence	3 (3-0-6)
ทสคพ	692	หัวข้อขั้นสูงด้านปัญญาประดิษฐ์	
* ITCS	693	Advanced Topics in Software Engineering	3 (3-0-6)
ทสคพ	693	หัวข้อขั้นสูงด้านวิศวกรรมซอฟต์แวร์	
* ITCS	694	Bioinformatics	3 (3-0-6)
ทสคพ	694	ชีวสารสนเทศศาสตร์	
ITCS	695	Independent Study	3 (0-6-3)
ทสคพ	695	การศึกษาอิสระ	

* new course

2.2 Electrive Coureses for plan 2.2 For students with Bachelor's not less than 12 credits

A student can register elective course(s) within Database, Network and Security, Artificial Intelligence, Software Engineering and Other Elective Courses as follows:

(1) Database

ITCS	621	Database Design and Administration	3 (3-0-6)
ทสคพ	621	การออกแบบและการบริหารฐานข้อมูล	
ITCS	668	Cloud Database and Big Data Technology	3 (3-0-6)
ทสคพ	668	ฐานข้อมูลระบบคลาวด์และเทคโนโลยีข้อมูลขนาดใหญ่	
ITCS	682	Advanced Database Systems	3 (3-0-6)
ทสคพ	682	ระบบฐานข้อมูลขั้นสูง	

			Credits (lecture – practice – self-study)
(2) Network and Security			
ITCS	551	Service-oriented and Cloud Computing	3 (3-0-6)
ทสคพ	551	การคำนวณเชิงบริการและคลาวด์	
ITCS	554	Information Security Management	3 (3-0-6)
ทสคพ	554	การจัดการความมั่นคงของสารสนเทศ	
ITCS	638	Networks and Distributed Systems Security	3 (3-0-6)
ทสคพ	638	ความมั่นคงของระบบเครือข่ายและระบบแบบกระจาย	
ITCS	687	Advanced Computer Security	3 (3-0-6)
ทสคพ	687	ความมั่นคงของคอมพิวเตอร์ขั้นสูง	
(3) Artificial Intelligence			
ITCS	517	Machine Learning	3 (3-0-6)
ทสคพ	517	การเรียนรู้เชิงเครื่องจักร	
ITCS	518	Image Analysis and Understanding	3 (3-0-6)
ทสคพ	518	การวิเคราะห์และความเข้าใจภาพ	
ITCS	661	Advanced Artificial Intelligence	3 (3-0-6)
ทสคพ	661	ปัญญาประดิษฐ์ขั้นสูง	
ITCS	665	Natural Language Processing	3 (3-0-6)
ทสคพ	665	การประมวลผลภาษาธรรมชาติ	
ITCS	667	Advanced Computer Vision	3 (3-0-6)
ทสคพ	667	คอมพิวเตอร์วิทัศน์ขั้นสูง	
* ITCS	692	Advanced Topics in Artificial Intelligence	3 (3-0-6)
ทสคพ	692	หัวข้อขั้นสูงด้านปัญญาประดิษฐ์	
* new course			
(4) Software Engineering			
ITCS	613	Tools and Environments for Software Development	3 (3-0-6)
ทสคพ	613	เครื่องมือและสภาพแวดล้อมสำหรับการพัฒนาซอฟต์แวร์	
ITCS	615	Empirical Software Engineering	3 (3-0-6)
ทสคพ	615	วิศวกรรมซอฟต์แวร์เชิงประจักษ์	
ITCS	642	Software Engineering Management	3 (3-0-6)
ทสคพ	642	การจัดการวิศวกรรมซอฟต์แวร์	
ITCS	644	Software Quality Assurance	3 (3-0-6)
ทสคพ	644	การประกันคุณภาพซอฟต์แวร์	

			Credits (lecture – practice – self-study)
ITCS	646	Requirements Engineering	3 (3-0-6)
ทสคพ	646	วิศวกรรมความต้องการ	
* ITCS	693	Advanced Topics in Software Engineering	3 (3-0-6)
ทสคพ	693	หัวข้อขั้นสูงด้านวิศวกรรมซอฟต์แวร์	

* new course

(5) Other Elective Courses

ITCS	503	Design and Analysis of Algorithms	3 (3-0-6)
ทสคพ	503	การออกแบบและวิเคราะห์ขั้นตอนวิธี	
ITCS	655	Computer Graphics	3 (3-0-6)
ทสคพ	655	คอมพิวเตอร์กราฟิกส์	
* ITCS	694	Bioinformatics	3 (3-0-6)
ทสคพ	694	ชีวสารสนเทศศาสตร์	
ITCS	695	Independent Study	3 (0-6-3)
ทสคพ	695	การศึกษาอิสระ	
ITCS	696	Advanced Topics in Computer Science	3 (3-0-6)
ทสคพ	696	หัวข้อชั้นสูงด้านวิทยาการคอมพิวเตอร์	

* new course

In addition to the elective courses mentioned above, a student may register other graduate level courses from international programs offered by other faculties, both of Mahidol University and of other universities, according to the student's interest as elective courses, with the approval of the curriculum committee and the advisor.

3) Dissertation

			Credits (lecture – practice – self-study)
ITCS	699	Dissertation	36 (0-108-0)
ทสคพ	699	วิทยานิพนธ์	
ITCS	799	Dissertation	48 (0-144-0)
ทสคพ	799	วิทยานิพนธ์	
ITCS	898	Dissertation	48 (0-144-0)
ทสคพ	898	วิทยานิพนธ์	
ITCS	899	Dissertation	72 (0-216-0)
ทสคพ	899	วิทยานิพนธ์	

3.1.4 Research Project (for plan 1.1, plan 1.2, plan 2.1 and plan 2.2)

Research areas for conducting a thesis are as follows:

(1) Research project in intelligent systems
(2) Research project in communication and network systems
(3) Research project in security systems
(4) Research project in software engineering
(5) Research project in data management systems
(6) Research project in graphic and multimedia systems
(7) Research project in computer architecture and computer systems
(8) Research project in bioinformatics
(9) Research project in health information
(10) Research project in computational science
(11) Research project related to industry

Students can choose to conduct research in other areas related to computer science given approval from academic advisor and program director.

3.1.5 Definition of Course Codes

Course codes are defined as follows:

- The first two characters abbreviate the faculty offering the course.
  ทส (IT) is the abbreviation of the Faculty of Information and Communication Technology.
- The latter two characters are an abbreviation of the department or the major offering the course.
  คพ (CS) is the abbreviation of the Computer Science major.
- The 3 digit course number of form 5XX and 6XX indicates that the course is graduate level.

3.1.6 Study Plan

Plan 1 Research Only

Plan 1.1 For students with Master's Degree

Year	Semester 1	
1	* ITCS 671 Seminar in Computer Science I ITCS 898 Dissertation (Developing the research topic and planning) **Total 9 credits**	1 (1-0-2) 9 (0-27-0)
	Semester 2	
	* ITCS 672 Seminar in Computer Science II ITCS 898 Dissertation (Reviewing literature and preparing for data collection) **Total 9 credits**	1 (1-0-2) 9 (0-27-0)
2	**Semester 1**	
	* ITCS 673 Seminar in Computer Science III ITCS 898 Dissertation (Conducting preliminary experiments and writing the proposal) **Total 9 credits**	1 (1-0-2) 9 (0-27-0)
	QUALIFYING EXAMINATION	
	Semester 2	
	ITCS 898 Dissertation (Proposing the thesis proposal, conducting experiments, and writing the first manuscript) **Total 9 credits**	9 (0-27-0)
3	**Semester 1**	
	ITCS 898 Dissertation (Conducting experiments and writing the second manuscript) **Total 6 credits**	6 (0-18-0)
	Semester 2	
	ITCS 898 Dissertation (Writing the thesis and thesis defense) **Total 6 credits**	6 (0-18-0)

** Register with AUDIT*

Plan 1.2 For students with Bachelor's Degree

Year	Semester 1	
1	* ITCS 533 Research Methodology in Computer Science	2 (2-0-4)
	* ITCS 671 Seminar in Computer Science I	
	ITCS 899 Dissertation	1 (1-0-2)
	(Developing the research topic)	9 (0-27-0)
	Total 9 credits	
	Semester 2	
	* ITCS 672 Seminar in Computer Science II	1 (1-0-2)
	ITCS 899 Dissertation	9 (0-27-0)
	(Planning and Reviewing literature)	
	Total 9 credits	
2	**Semester 1**	
	* ITCS 673 Seminar in Computer Science III	1 (1-0-2)
	ITCS 899 Dissertation	9 (0-27-0)
	(Reviewing literature and preparing for data collection)	
	Total 9 credits	
	QUALIFYING EXAMINATION	
	Semester 2	
	ITCS 899 Dissertation	9 (0-27-0)
	(Conducting preliminary experiments and writing the proposal)	
	Total 9 credits	
3	**Semester 1**	
	ITCS 899 Dissertation	9 (0-27-0)
	(Proposing the thesis proposal and conducting experiments)	
	Total 9 credits	
	Semester 2	
	ITCS 899 Dissertation	9 (0-27-0)
	(Writing the first manuscript)	
	Total 9 credits	
4	**Semester 1**	
	ITCS 899 Dissertation	9 (0-27-0)
	(Conducting experiments and writing the second manuscript)	
	Total 9 credits	
	Semester 2	
	ITCS 899 Dissertation	9 (0-27-0)
	(Writing the thesis and thesis defense)	
	Total 9 credits	

** Register with AUDIT*

Plan 2.1 For students with Master's Degree

Year	Semester 1	
1	ITCS 531 Mathematics for Computer Science	2 (2-0-4)
	ITCS 533 Research Methodology in Computer Science	2 (2-0-4)
	ITCS 671 Seminar in Computer Science I	1 (1-0-2)
	Total 5 credits	
	Semester 2	
	ITCS 532 Foundations of Computational Science	2 (2-0-4)
	ITCS 672 Seminar in Computer Science II	1 (1-0-2)
	Elective Course	3 credits
	Total 6 credits	
2	**Semester 1**	
	ITCS 673 Seminar in Computer Science III	1 (1-0-2)
	ITCS 699 Dissertation (Developing the research topic, planning, reviewing literature)	9 (0-27-0)
	Total 10 credits	
	QUALIFYING EXAMINATION	
	Semester 2	
	ITCS 699 Dissertation (Preparing for data collection, conducting preliminary experiments, and writing the proposal, proposing the thesis proposal)	9 (0-27-0)
	Total 9 credits	
3	**Semester 1**	
	ITCS 699 Dissertation (Conducting experiments, writing the first manuscript)	9 (0-27-0)
	Total 9 credits	
	Semester 2	
	ITCS 699 Dissertation (Writing the thesis and thesis defense)	9 (0-27-0)
	Total 9 credits	

Plan 2.2 For students with Bachelor's Degree

Year	Semester 1	
1	ITCS 523 Data Sciences Essentials ITCS 531 Mathematics for Computer Science ITCS 533 Research Methodology in Computer Science ITCS 671 Seminar in Computer Science I **Total 8 credits**	3 (3-0-6) 2 (2-0-4) 2 (2-0-4) 1 (1-0-2)
	Semester 2	
	ITCS 532 Foundations of Computational Science ITCS 672 Seminar in Computer Science II Elective Course **Total 9 credits**	2 (2-0-4) 1 (1-0-2) 6 credits
2	**Semester 1**	
	ITCS 673 Seminar in Computer Science III Elective Course ITCS 799 Dissertation (Developing the research topic and planning) **Total 10 credits**	1 (1-0-2) 6 credits 3 (0-9-0)
	QUALIFYING EXAMINATION	
	Semester 2	
	ITCS 799 Dissertation (Reviewing literature and preparing for data collection) **Total 9 credits**	9 (0-27-0)
3	**Semester 1**	
	ITCS 799 Dissertation (Conducting preliminary experiments and writing the proposal) **Total 9 credits**	9 (0-27-0)
	Semester 2	
	ITCS 799 Dissertation (Proposing the thesis proposal and Conducting experiments) **Total 9 credits**	9 (0-27-0)
4	**Semester 1**	
	ITCS 799 Dissertation (Writing the first manuscript) **Total 9 credits**	9 (0-27-0)
	Semester 2	
	ITCS 799 Dissertation (Writing the thesis and thesis defense) **Total 9 credits**	9 (0-27-0)

3.1.7 Course Description

Please see Appendix A.

3.2 Name, I.D. Number, Title and Degree of Instructors

3.2.1 Full time instructors of the curriculum (Please see Appendix B**)**

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
1	x-xxxx-xxxxx-xx-x Professor Dr. Peter Fereed Haddawy	Ph.D. (Computer Science) University of Illinois at Urbana-Champaign, USA : 1991 M.Sc. (Computer Science) University of Illinois at Urbana-Champaign, USA : 1987 B.A. (Mathematics) Pomona College, Claremont, California, USA : 1981	Faculty of Information and Communication Technology
2	x-xxxx-xxxxx-xx-x Associate Professor Dr. Chomtip Pornpanomchai	Ph.D. (Computer Science) Asian Institute of Technology : 2000 M.Sc. (Computer Science) Chulalongkorn University : 1986 B.Sc. (General Science) Kasetsart University : 1981	Faculty of Information and Communication Technology
3	x-xxxx-xxxxx-xx-x Associate Professor Dr. Suppawong Tuarob	Ph.D. (Computer Science and Engineering) Pennsylvania State University, USA : 2015 M.S. (Industrial Engineering) Pennsylvania State University, USA : 2015 M.SE. (Computer Science and Engineering) University of Michigan, Ann Arbor, USA : 2010 B.SE. (Computer Science) University of Michigan, Ann Arbor, USA : 2009	Faculty of Information and Communication Technology
4	x-xxxx-xxxxx-xx-x Associate Professor Dr. Vasaka Visoottiviseth	Ph.D. (Computer Engineering) Nara Institute of Science and Technology, Japan : 2003 M.Eng. (Computer Engineering) Tokyo University of Agriculture and Technology, Japan : 1999 B.Eng. (Computer Engineering) Tokyo University of Agriculture and Technology, Japan : 1997	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
5	x-xxxx-xxxxx-xx-x Associate Professor Dr. Worapan Kusakunniran	Ph.D. (Computer Science and Engineering) University of New South Wales, Australia : 2013 B.Eng. (Computer Engineering) 1st Class Honor University of New South Wales, Australia : 2008	Faculty of Information and Communication Technology
6	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Boonsit Yimwadsana	Ph.D. (Electrical Engineering) Columbia University, USA : 2007 M.S. (Electrical Engineering) Columbia University, USA : 2001 B.S. (Electrical Engineering) Columbia University, USA : 2000	Faculty of Information and Communication Technology
7	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Charnyote Pluempitiwiriyawej	Ph.D. (Computer Engineering-CISE) University of Florida, USA : 2001 M.S. (Computer Science) University of Maryland, USA : 1997 B.Eng. (Computer Engineering) 2nd Class Honor King Mongkut's institute of Technology Thonburi : 1994	Faculty of Information and Communication Technology
8	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Morakot Choetkiertikul	Ph.D. (Computer Science) University of Wollongong, Australia : 2018 M.Sc. (Computer Science) Mahidol University : 2012 B.Sc. (Information and Communication Technology) Mahidol University : 2007	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
9	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Mores Prachyabrued	Ph.D. (Computer Science) University of Louisiana at Lafayette, USA : 2013 M.S. (Computer Science) University of Louisiana at Lafayette, USA : 2007 M.Eng. (Computer Engineering) Kasetsart University : 2002 B.Eng. (Computer Engineering) Kasetsart University : 1998	Faculty of Information and Communication Technology
10	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Preecha Tangworakitthaworn	Ph.D. (Computer Science) University of Southampton, United Kingdom : 2014 M.Sc. (Computer Science) Mahidol University : 2006 B.Sc. (Computer Science) Mahidol University : 1998	Faculty of Information and Communication Technology
11	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Songsri Tangsripairoj	Ph.D. (Computer Science) Oklahoma State University, USA : 2004 M.Sc. (Computer Science) Mahidol University : 1996 B.Sc. (Computer Science) 2nd Class Honor Thammasat University : 1994	Faculty of Information and Communication Technology
12	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Thanwadee Sunetnanta	Ph.D. (Distributed Software Engineering) Imperial College, United Kingdom : 1999 M.Sc. (Foundation of Advanced Information Technology) Imperial College, United Kingdom : 1993 B.Sc. (Computer Science) 2nd Class Honor Thammasat University : 1991	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
13	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Thitinan Tantidham	Ph.D. (Computer Science) RWTH Aachen University, Germany : 2010 M.Sc. (Computer Science) Mahidol University : 1997 B.Eng. (Computer Engineering) Kasetsart University : 1993	Faculty of Information and Communication Technology
14	x-xxxx-xxxxx-xx-x Lecturer Dr. Akara Supratak	Ph.D. (Computing Research) Imperial College London, United Kingdom : 2018 M.Sc. (Computing) Imperial College London, United Kingdom : 2013 B.Sc. (Information and Communication Technology) Mahidol University : 2011	Faculty of Information and Communication Technology
15	x-xxxx-xxxxx-xx-x Lecturer Dr. Assadarat Khurat	Dr.-Ing. (Computer Security) Hamburg University of Technology, Germany : 2014 M.Sc. (Information and Communication Systems) Hamburg University of Technology, Germany : 2005 B.Eng. (Telecommunication Engineering) 2nd Class Honor King Mongkut's Institute of Technology Ladkrabang : 2001	Faculty of Information and Communication Technology
16	x-xxxx-xxxxx-xx-x Lecturer Dr. Chaiyong Ragkhitwetsagul	Ph.D. (Computer Science) University College London, United Kingdom : 2018 M.S. (Information Technology) Carnegie Mellon University, USA : 2008 B.Eng. (Computer Engineering) Kasetsart University : 2005	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
17	x-xxxx-xxxxx-xx-x Lecturer Dr. Dolvara Guna-Tilaka	Ph.D. (Computer Science) Washington University in Saint Louis, USA : 2019 M.Sc. (Computer Science) Washington University in Saint Louis, USA : 2013 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2010	Faculty of Information and Communication Technology
18	x-xxxx-xxxxx-xx-x Lecturer Dr. Ittipon Rassameeroj	Ph.D. (Computer Science) University of California, Davis, USA : 2019 M.Sc. (Computer Science) Mahidol University : 2008 B.Sc. (Computer Science) Mahidol University : 2005	Faculty of Information and Communication Technology
19	x-xxxx-xxxxx-xx-x Lecturer Dr. Jidapa Kraisangka	Ph.D. (Information Science) University of Pittsburgh, USA : 2019 M.S. (Information Science) University of Pittsburgh, USA : 2013 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2010	Faculty of Information and Communication Technology
20	x-xxxx-xxxxx-xx-x Lecturer Dr. Pattanasak Mongkolwat	Ph.D. (Computer Science) Illinois Institute of Technology, USA : 1996 M.Sc. (Computer Science) McNeese State University, USA : 1991 B.Sc. (Computer Science) University of the Thai Chamber of Commerce : 1988	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
21	x-xxxx-xxxxx-xx-x Lecturer Dr. Petch Sajjacholapunt	Ph.D. (Computer Science) The University of Warwick, United Kingdom : 2016 M.Phil. (Computer Science with IT Management) The University of Manchester, United Kingdom : 2012 M.Sc. (Computer Science) The University of Manchester, United Kingdom : 2010 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2007	Faculty of Information and Communication Technology
22	x-xxxx-xxxxx-xx-x Lecturer Dr. Pisit Praiwattana	Ph.D. (Computer Science) Liverpool John Moores University, United Kingdom : 2018 M.S. (Computer Science) University of Southern California, USA : 2012 B.Sc. (Information and Communication Technology) Mahidol University : 2009	Faculty of Information and Communication Technology
23	x-xxxx-xxxxx-xx-x Lecturer Dr. Siripen Pongpaichet	Ph.D. (Computer Science) University of California, Irvine, USA : 2016 M.S. (Computer Science) University of California, Irvine, USA : 2011 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2008	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
24	x-xxxx-xxxxx-xx-x Lecturer Dr. Songpon Teerakanok	D.Eng. (Information Science and Engineering) Ritsumeikan University, Japan : 2019 M.Eng. (Information Science and Engineering) Ritsumeikan University, Japan : 2016 B.Eng. (Computer Engineering) Prince of Songkla Unversity : 2013	Faculty of Information and Communication Technology
25	x-xxxx-xxxxx-xx-x Lecturer Dr. Thanapon Noraset	Ph.D. (Computer Science) Northwestern University, USA : 2018 M.S. (Computer Science) Northwestern University, USA : 2018 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2010	Faculty of Information and Communication Technology
26	x-xxxx-xxxxx-xx-x Lecturer Dr. Tipajin Thaipisutikul	Ph.D. (Computer Science) 1st Class Honor National Central University, Taiwan : 2021 M.Sc. (Information Technology) 2nd Class Honor University of Sydney, Australia : 2012 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2010	Faculty of Information and Communication Technology
27	x-xxxx-xxxxx-xx-x Lecturer Dr. Thitivatr Patanasakpinyo	Ph.D. (Computer Science) Iowa State University, USA : 2017 M.S. (Computer Science) Iowa State University, USA : 2013 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2007	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
28	x-xxxx-xxxxx-xx-x Lecturer Dr. Wudhichart Sawangphol	Ph.D. (Information Technology) Monash University, Australia : 2017 MIT Honours (Software Engineering and Data Management) Monash University, Australia : 2012 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2009	Faculty of Information and Communication Technology

3.2.2 Full time instructors

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
1	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Ananta Srisuphab	Ph.D. (Computer Science) Mahidol University : 2009 M.Sc. (Computer Science) Mahidol University : 2002 B.Sc. (Computer Science) Mahidol University : 1991	Faculty of Information and Communication Technology
2	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Piyanuch Silapachote	Ph.D. (Computer Science) University of Massachusetts Amherst, USA : 2011 M.S. (Computer Science) University of Massachusetts Amherst, USA : 2006 B.S. (Computer Science) Cornell University, USA : 2001	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
3	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Rawesak Tanawongsuwan	Ph.D. (Computer Science) Georgia Institute of Technology, USA : 2003 M.S. (Computer Science) Georgia Institute of Technology, USA : 1999 B.S. (Computer Science and Mathematics) University Honors Carnegie Mellon University, USA : 1996	Faculty of Information and Communication Technology
4	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Srisupa Palakvangsa Na Ayudhya	Ph.D. (Computation) University of Manchester, United Kingdom : 2006 M.S. (Advanced Computing) Imperial College of Science, Technology and Medicine, United Kingdom : 2000 B.Sc. (Computer Science) 1st Class Honor Thammasat University : 1998	Faculty of Information and Communication Technology
5	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Sukanya Phongsuphap	Ph.D. (Intelligent System Science) Tokyo Institute of Technology, Japan : 1999 M.Eng. (Intelligence Science) Tokyo Institute of Technology, Japan : 1996 B.S. (Mathematics) 1st Class Honor Chiang Mai University : 1984	Faculty of Information and Communication Technology

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
6	x-xxxx-xxxxx-xx-x Lecturer Dr. Pawitra Liamruk	Ph.D. (Computer Science) University of Bath, United Kingdom : 2015 M.Sc. (Software Systems Engineering) University College London, United Kingdom : 2010 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2008	Faculty of Information and Communication Technology
7	x-xxxx-xxxxx-xx-x Lecturer Dr. Pilailuck Panphattarasap	Ph.D. (Computer Science) University of Bristol, United Kingdom : 2019 M.Sc. (Computer Science) University of Bristol, United Kingdom : 2014 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2011	Faculty of Information and Communication Technology

4. Details of Practicum

None

5. Thesis requirement

5.1 Short Description

To complete the thesis required by this curriculum, a student must identify a research topic in an area of Computer Science according to the list of research projects or advisor's approval, develop a relevant research proposal, conduct research using research methodology appropriate for the topic (including, but not limited to, problem formulation, experiment design, data collection, and data analysis), and present the findings through a dissertation report, presentation at an academic conference, and publication in an academic journal or proceedings. The dissertation process and format of the dissertation must follow the guideline of the Faculty of Graduate Studies, and the dissertation must be submitted to the Faculty of Graduate Studies within the submission deadline designated by the Faculty of Graduate Studies.

5.2 Standard Learning Outcomes

Students will be able to analyze the core knowledge and research problems in the field of computer science, and to conduct research in a related area using appropriate methodology, and of sufficient quality to be presented to the relevant international academic community and the part of the student's thesis must be published in an appropriate scientific journal.

5.3 Thesis duration:

Plan 1.1: From the first semester of the first year of study onwards.

Plan 1.2: From the first semester of the first year of study onwards.

Plan 2.1: From the first semester of the second year of study onwards.

Plan 2.2: From the first semester of the second year of study onwards.

5.4 Number of credits:

Plan 1.1: 48 credits

Plan 1.2: 72 credits

Plan 2.1: 36 credits

Plan 2.2: 48 credits

5.5 Preparation

Student follows thesis preparation and process from the guideline provided at the Faculty of Graduate Studies website including thesis proposal, thesis progress report, and thesis defense. The student is expected to explore research area of interest and approach a faculty member to be a thesis advisor before beginning the thesis.

5.6 Evaluation process

The research process shall be evaluated by the advisor for the student's thesis. Evaluation occurs during each consultation during the period of research. The final oral examination is systematically evaluated by the thesis committee, following the standards of the Faculty of Graduate Studies, Mahidol University. In addition, part or all of the student's thesis must be published in an international academic journal.

Section 4 Learning Outcome, Teaching Strategies and Evaluation

1. Development of Students' Specific Qualifications

Key characteristics for students according to the objectives of the program

Special Characteristics	Teaching Strategies or Student Activities
1. T-shaped knowledge and skills	**Activity**: Weekly lab meeting organized by the research cluster of students **Teaching strategy**: Coaching, discussion, criticizing, questions and answers **Requirement**: Attend at least 8 times per semester **Evaluation**: Participation rate, formative feedback, peer reviews
	Activity: Lab Assistant **Teaching strategy**: Coaching **Requirement**: Volunteer-based, attend at least 15 hours per semester. **Evaluation**: Peer reviews, course evaluation and feedback
	Activity: Study/Join activities to obtain soft skills (such as creative and innovative, leadership and management, research skill) from the Faculty of Graduate School, Mahidol Univerisity **Teaching strategy**: Online courses **Requirement**: Following the graduation criteria of the Faculty of Graduate School, Mahidol University **Evaluation**: Completion certificates
2. Ethical and professional code of conduct	**Activity**: ICT Graduation Student Orientation **Teaching strategy**: Coaching, discussion **Requirement**: Attend one time prior to study **Evaluation**: Participation rate
	Activity: Study in Human Subjects Research in CITI program **Teaching strategy**: Online course **Requirement**: Obtain at least 1 CITI program certificate related to Human Subjects Research **Evaluation**: Completion certificates

Special Characteristics	Teaching Strategies or Student Activities
	Activity: Data Protection Principles for Mahidol University's Students and Staff via MUS **Teaching strategy**: Online course **Requirement**: Attend one time prior to study **Evaluation**: Completion certificates
3. Collaborative skill / Teamwork	**Activity**: Research project management workshop **Teaching strategy**: Interactive lecture, Case study **Requirement**: Attend once per academic year **Evaluation**: Participation rate

2. Development of Learning Outcome in Each Objective

Expected Outcome	Teaching Strategies	Evaluation Strategies
1. Knowledge 1.1 Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories. 1.2 Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically	1.1 Interaction-based lectures, case studies, discussion, seminar 1.2 Interaction-based lectures, project-based learning, problem-based learning, coaching, seminar	1.1 Assessment from written examination and presentation during the class 1.2 Assessment from assignments, class projects, and dissertations.
2. Skills 2.1 Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review.	2.1 Lectures, case studies, discussion, and project-based learning.	2.1 Assessment from written and presentation during seminar classes, progress report, and dissertation proposal and defense.

Expected Outcome	Teaching Strategies	Evaluation Strategies
3. Ethics 3.1 Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers.	3.1 Interaction-based lecture, coaching, and experience-based case studies	3.1 Assessment from observation, assignments, and dissertation.
4. Character 4.1 Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility. 4.2 Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	4.1 Project-based learning 4.2 Individual or group assignments, class projects and presentations, seminar and group discussions	4.1 Assessment from assignments, observation, and peer review. 4.2 Assessment of the ability to present and/or write work effectively using English in class.

3. Curriculum Mapping

See Appendix C**.**

Section 5 Criteria for Student Evaluation

1. Grading System

The system for grading and graduation shall comply with the criteria stated in the Regulations of Mahidol University on Graduate studies.

2. Evaluation Process for the Learning Outcome of Students

2.1 Evaluation for the learning outcome of students during study.

2.1.1 Students learning outcomes are evaluated in courses by course instructors and thesis proposal and defense committee according to the learning outcome mapping with courses and thesis.

2.2.2. Students learning outcomes may be evaluated through the quality of journal publication student published.

2.2.3 Student's PLOs achievement assessment are evaluated at the end of the year's of study based on yearly the expected learning outcome

2.2 Evaluation for the learning outcome of students after graduation

2.2.1 Survey of the employment situations of graduates, evaluation by alumni in terms of time to find jobs, and opinions on the knowledge and skills graduates gained from the curriculum for careers in computing.

2.2.2 Survey of PLOs achievement assessment

2.2.3 Survey of employer satisfaction with graduates by interview and questionnaires.

2.2.4 Survey of career advancement of graduates.

2.2.5 Survey of graduate preparedness and knowledge from external experts evaluating the curriculum.

2.2.6 Evaluation by the curriculum committee of graduate employment situations, employer satisfaction, graduate career advancement, and opinions of external experts to verify students' learning outcomes after graduation.

3. Graduation Requirement

Plan 1 Research only

1) Students must complete their courses as stated in the curriculum

2) Students must pass the Qualifying Examination

3) Pass English Proficiency test following the Faculty of Graduate Studies's criteria

4) Propose Dissertation to the committee appointed by the Faculty Graduate Studies and to the public and pass oral thesis examination as the final stage

5) The complete or part of the thesis has to be published or accepted in at least two qualified international journals as announced by the committee, published or accepted to be published in at least one qualified international journal as announced by the committee, granted at least one patent, accepted as one innovation, or acknowledged as one creative product that can be applied commercially, socially, and economically. In the case of innovative or creative product, the thesis shall be evaluated by at least 3 external thesis committees from the same field or related field who are knowledgeable, experienced, and highly recognized and approved by the University Council.

6) Other requirements shall follow those that specified by the Faculty of Graduate Studies

Plan 2 Course work and research

1) Students must complete their courses as stated in the curriculum with a minimum CUM-GPA of 3.00.

2) Students must pass the Qualifying Examination

3) Pass English Proficiency test following the Faculty of Graduate Studies's criteria

4) Propose Dissertation to the committee appointed by the Faculty Graduate Studies and to the public and pass oral thesis examination as the final stage

5) The complete or part of the thesis has to be published, or at least accepted to be published, in a qualified international journal as announced by the committee, granted a patent, accepted as an innovation, or acknowledged as a creative product to be applied commercially, socially, and economically. In the case of innovative or creative product, the thesis shall be evaluated by at least 3 external thesis committees from the same field or related field who are knowledgeable, experienced, and highly recognized and approved by the University Council.

6) Other requirements shall follow those that specified by the Faculty of Graduate Studies

Section 6 Faculty Development

1. The Orientation for New Faculty Members

1.1 New faculty members have to attend an orientation that aims to provide knowledge and understanding about the policies of Mahidol University and the faculty/institute/college.

1.2 New full-time and part-time faculty members are trained to acknowledge and understand the curriculum, including divisional activities.

1.3 The head of the program explains relevant disciplines, curriculum, process of teaching, and assignments to the new faculty members.

1.4 First orientation is required for the new faculty members to know and understand the policies and philosophy of the university and the faculty.

1.5 To understand the process of teaching and research, the new faculty members are required to be a co-advisor of a thesis.

2. Skill and Knowledge Development for New Faculty Members

2.1 Skills Development in Teaching and Evaluation.

2.1.1 Provide workshops to develop skills on teaching and student evaluation methods.

2.1.2 Allow the new instructor to participate in the teaching and evaluation of courses.

2.2 Other Academic and Professional Skill Development.

2.2.1 Support instructors in their research projects.

2.2.2 Support instructors publishing in national and international conferences and journals.

2.2.3 Support instructors to attend meetings, training sessions, seminars and studies at other institutes and organizations.

Section 7 Quality Assurance

1. Regulatory Standard

1.1. The program follows the regulations of Thailand's Ministry of Higher Education, Science and Innovation relevant to the development and management of postgraduate academic programs such as

- The Permanent Secretary, Ministry of Higher Education, Science and Innovation's Postgraduate Curriculum Standard Criterion B.E. 2565.
- Mahidol University Regulations for Postgraduate Studies B.E. 2563.

The quality of the program is assured by identifying performance indicators for evaluating effectiveness and efficiency in accordance with the regulations mentioned above.

The program also follows the visions, goals, strategies and regulations of Mahidol University in order to ensure the students are produced according to the demand of the country, and who will contribute to the society. The regulations include the establishment of a program administrative committee consisting of 3 responsible faculty appointed by the Faculty of ICT. This will plan the teaching strategies along with the administrators of the Faculty of ICT, as well as follow-up and collect performance data in order to continuously improve the program.

The teaching and learning approach follows the educational goals of the Faculty of ICT and Mahidol University. The expected learning outcomes of students, the program structure, teaching methods, and assessment methods are regularly reviewed with all stakeholders, including current students, alumni, teachers and employers in order to ensure that the program is up-to-date and correspond to the demands of stakeholders. The expected learning outcomes are monitored and adjusted to satisfy the demands of employers. Teaching and assessment methods are adjusted in order to support the achievement of the expected learning outcomes for students in the form of quality learning through the regular revision of program (at least once every five years).

To promote quality learning, the program committee and teachers spearhead the development and improvement of a teaching-learning plan through the revision of program (TQF 2) and creating a learning environment that enables individuals to learn and participate. The program must be flexible and enable learners to make meaningful

choices in terms of subject content, program routes, approaches to assessment and modes and duration of study. The teaching and learning approach should promote learning, learning how to learn, and instill in students a commitment to lifelong learning (e.g. commitment to critical inquiry, information-processing skills, a willingness to experiment with new ideas and practices, etc.) under the five learning objectives of the Ministry of Education, including ethics, body of knowledge, problem-solving skills, teamwork and analytical, IT and communication skills.

The quality of the program is managed, assessed and monitored according to the Permanent Secretary, Ministry of Higher Education, Science and Innovation's Postgraduate Curriculum Standard Criterion B.E. 2565, Internal Quality Assurance B.E. 2557, and ASEAN University Network-Quality Assurance (AUN-QA).

1.2. The planning development and evaluation of the program according to the time duration specified in the regulations of the Ministry of Education. Each year, the program submits an annual program evaluation report, TQF 7, to Mahidol University and Ministry of Education. The program is also updated every 5 years.

1.3. The program follows the Internal Quality Assurance regulations of the Office of the Higher Education Commission as follows

1.3.1. At least 80 percent of the program's responsible faculty members are involved in meetings for planning, follow-up and review of the operation of the program.

1.3.2. The program produces TQF 2 document (this document) in accordance to Office of the Higher Education Commission's Thai Qualifications Framework for Higher Education.

1.3.3. The program produces TQF 3 and TQF 4 documents describing the details of each course prior to the start of each semester.

1.3.4. The program reports the results of the operations of each course in the form of TQF 5 and TQF 6 after the end of each semester according to the regulations of the Faculty of Graduate Studies.

1.3.5. The program submits the reports describing the performance evaluation of all courses and the entire program according to the regulations of the Faculty of Graduate Studies.

2. Graduates

To produce quality graduates, the program follows the regulations of Thailand's Ministry of Higher Education, Science and Innovation relevant to the development and management of postgraduate academic programs such as

- The Permanent Secretary, Ministry of Higher Education, Science and Innovation's Postgraduate Curriculum Standard Criterion B.E. 2565.
- Mahidol University Regulations for Postgraduate Studies B.E. 2563.

The program measures graduate quality with respect to the program's expected learning outcomes in order to align graduates' competencies with the demands of employers. The quality of the graduates is managed, assessed and monitored according to the Office of Higher Education Commission's Thai Qualifications Framework for Higher Education B.E. 2552 and its related guidelines (B.E. 2552, 2554, 2558), Internal Quality Assurance B.E. 2557, Baldrige's Education Performance Excellence (EdPEx) and ASEAN University Network-Quality Assurance (AUN-QA) via performance indicators of each regulatory standard. In addition, the program includes employability- related performance indicators such as employer's satisfaction level and ability of graduates evaluated by employers and graduates themselves.

3. Students

The quality of graduate students is managed according to the Permanent Secretary, Ministry of Higher Education, Science and Innovation's Postgraduate Curriculum Standard Criterion B.E. 2565, Internal Quality Assurance B.E. 2557, Baldrige's Educational Performance Excellence (EdPEx) and ASEAN University Network-Quality Assurance (AUN-QA).

The program ensures that the students achieve the expected learning outcomes with good performance by regularly monitoring student learning. The program collects information concerning student quality as performance indicators according to the following regulations:

- Student intake policy and admission criteria are clearly defined in this curriculum document (section 2) and the program admits students according to the policy under supervision of the Faculty of Graduate Studies.
- The program together with the Faculty of Graduate Studies provide adequate student monitoring system to follow up on student's academic performance and progress as well as their involvement in extracurricular activities.
- The program provides clear student performance indicators, reflecting the students' learning outcomes in section 2 and characteristics in section 4, along with clear

assessment methods for each indicator. Students are informed of the assessments that the program uses so they know what is expected of them.

- The program committee regularly reviews student performance indicators in addition to instructor's grade evaluation reports. The Faculty of ICT and the Faculty of Graduate Studies also monitor student progress and the assessment methods of the program every semester through the student information system in order to ensure effectiveness.
- The program assigns an academic advisor for each student to help students improve their learning ability and achieve their learning outcomes effectively.

The program committee will make adjustment in the management of the program, including teaching strategies, expected learning outcomes, facilities, and staff in order to ensure that students achieve expected learning outcomes.

4. Academic Staff

The program ensures that the instructors effectively deliver program content which leads to students' achievement of the expected learning outcomes with good performance by regularly monitoring instructors' performance and encouraging instructors to participate career development programs. The management of academic staff follows the regulations of Thailand's Ministry of Education relevant to the development and management of postgraduate academic programs such as

- The Permanent Secretary, Ministry of Higher Education, Science and Innovation's Postgraduate Curriculum Standard Criterion B.E. 2565.
- Mahidol University Regulations for Postgraduate Studies B.E. 2563.
- Office of the Higher Education Commission's Internal Quality Assurance B.E. 2557
- Baldrige's Educational Performance Excellence (EdPEx)
- ASEAN University Network-Quality Assurance (AUN-QA).

a. Intake and selection of academic staff

Both short-term and long-term planning for academic staff including recruitment, career development and contingency planning (including succession, promotion, re-deployment, termination, and retirement plans) are carried out to ensure that the quality and quantity of academic staff fulfil the needs for education, research and service required by Mahidol University. The staff-to-student ratio and workload are properly

planned, measured and monitored in order to improve the quality of education, research and service.

b. The development of academic staff

Training and development needs for academic staff are systematically identified, and appropriate training and development activities are promoted to fulfil the identified needs. New faculty members will be provided teacher orientation programs. While all faculty members usually conduct self-study to keep up with new knowledge and technology, they are encouraged to participate in academic development programs annually including participating in conferences, workshops and seminars.

Competences of academic staff are identified and evaluated. A competent academic staff member will be able to:

- Design and deliver a coherent teaching and learning curriculum, and have the ability to express it in teaching documents, according to the requirements of the Ministry of Education including but not limited to TQF3, TQF5 and TQF7.
- Apply a range of teaching and learning methods and select the most appropriate assessment methods to achieve the expected learning outcomes.
- Develop and use a variety of instructional media.
- Monitor and evaluate their own teaching performance and evaluate the courses they deliver.
- Reflect upon their own teaching practices.
- Conduct research and provide services to benefit stakeholders

c. Support for the Production of Academic Outputs

The program supports research activities conducted by academic staff. The academic outputs are established, monitored and benchmarked for improvement. Faculty members are encouraged to use some of the findings of their research to improve and update course content and student research activities. Performance appraisal strategies such as rewards and recognition are implemented to motivate and support academic, research and service activities.

d. Career development

Mahidol University and the Faculty of ICT support career development of academic staff by providing academic promotion ladders, research grants, conference travel grants, academic training, and curriculum management.

e. Engagement Development

Mahidol University and Faculty of ICT encourage academic staff to participate in university and faculty activities in order to engage academic staff in university mission and plan.

f. Special Faculty Appointment

The program recognizes the importance of education diversification especially from private industry and researchers from other areas. Occasionally, the program invites experts and technicians from public and private sectors to provide knowledge and skills used in industry and other areas. The qualifications of the external experts follow the aforementioned regulations.

5. Curriculum, Teaching and Learning, and Learner's evaluation

5.1. Curriculum

The program designs the curriculum based on the Outcome Based Education (OBE) principles which focuses on the development of graduates to meet the demands of employers according to the present and future market based on stakeholder surveys and trends of technology, economy, social, and culture. The stakeholders include faculty members, employers, alumni, current students, and recent graduates. The demand of employers is converted into expected learning outcomes that graduates must achieve.

5.2. Teaching and Learning

The program director designs the study plans of students in each academic year and plans the courses that will be offered, including course instructors and facilities, in order to ensure students achieve the expected learning outcomes. Students can freely choose elective courses under the guidance of an academic advisor and the program director in order to purse individual academic interests. The teaching methods and learning facility are regularly reviewed in program committee meetings.

5.3. Learner's Evaluation

Students' performance in courses is measured as grades. Students' academic advisors and the program committee regularly review students' performance every semester and advise students to achieve expected learning outcomes and graduate within the plan of study. The program director reports the students' performance to the faculty committee and the Faculty of Graduate Studies for faculty-wide and university-wide review of students' performance.

6. Learning Support

The program, through the Faculty of ICT, offers quality learning spaces, classrooms, equipment, materials and information technology to support student learning and development, as well as teacher and research development. Environmental, health and safety standards and access for people are fundamental to running of the program. The supporting resources are regularly updated and monitored to ensure their availability and their relevance to the objective of the program.

Information technology systems including hardware, software and network are key to the quality learning of the program. Key systems such as the student information system, learning management system, computing and networking tools are provided to students in order to ensure that students effectively achieve the learning outcomes, and teachers can prepare and conduct teaching, research, services and administration effectively. Mahidol University provides access to information resources through the university library via both online and physical channels.

The quality of the learning support follows the Office of the Higher Education Commission's Thai Qualifications Framework for Higher Education B.E. 2552 and its related guidelines (B.E. 2552, 2554, 2558), Internal Quality Assurance B.E. 2557, and ASEAN University Network-Quality Assurance (AUN-QA).

7. Key Performance Indicators

The Doctor of Philosophy Program in Computer Science (International Program), Faculty of Information and Communication Technology, uses key performance indicators based for the curriculum according to the standards of the Thai Qualifications Framework. These are subject to the following conditions: (1) the compulsory performance indicators (numbers 1-5) must meet or exceed expectations for at least two consecutive years, and (2) at least 80% of all performance indicators must meet expectations or exceed each year. The Key Performance Indicators are as follows:

Key Performance Indicators	Academic Year				
	2023	2024	2025	2026	2027
1. At least 80% of faculty members responsible for the curriculum participate in a curriculum meeting in order to plan, follow-up and review the operation of the curriculum.	✓	✓	✓	✓	✓
2. The program has the details of the curriculum according to TQF2, which is associated with the Thai Qualifications Framework.	✓	✓	✓	✓	✓
3. The program has course specifications and field experience specifications (if any) according to TQF3 and TQF4 before the beginning of each trimester.	✓	✓	✓	✓	✓
4. Instructors must produce course reports and file experience reports (if any) according to TQF5 and TQF6 within 30 days after the end of each semester.	✓	✓	✓	✓	✓
5. Instructors must produce program reports according to TQF7 within 60 days after the end of each academic year.	✓	✓	✓	✓	✓
6. Instructors revise the grading of students according to the learning standards indicated in TQF3 and TQF4 (if any) for at least 25 percent of courses that are offered each academic year.	✓	✓	✓	✓	✓
7. Instructors must assess the development and/or improvement of teaching methods, teaching techniques or the grading system from the evaluation results in TQF 7 of the previous year.	–	✓	✓	✓	✓
8. Every new instructor (if any) participates in orientation or otherwise receives adequate information on the college's teaching requirements.	✓	✓	✓	✓	✓
9. Full-time instructors in the curriculum receive academic and/or profession development at least once a year.	✓	✓	✓	✓	✓
10. At least 50 percent of supporting staff (if any) receive academic and/or professional development each year.	✓	✓	✓	✓	✓
11. The average satisfaction score for curriculum quality from the previous year's students and new graduates is at least 3.5 out of 5.	–	–	✓	✓	✓

Key Performance Indicators	Academic Year				
	2023	2024	2025	2026	2027
12. The average satisfaction score from employers of new graduates is at least 3.5 out of 5.	–	–	–	✓	✓

Section 8 Evaluation and Improvement of the Curriculum Implementation

1. Evaluation on the Teaching Efficiency

1.1 Evaluation of Teaching Strategies

1.1.1 Analysis of students' evaluation of courses and instructors.

1.1.2 Analysis of TQF5 evaluated by course instructors.

1.2 Evaluation of Instructors' Skills in Using Teaching Strategies

1.2.1 Analysis of students' evaluation of courses and instructors.

1.2.2 Analysis of TQF5 evaluated by course instructors.

2. Overall Evaluation of the Curriculum

2.1 Survey instructors' opinions toward students and vice versa.

2.2 Survey on jobs of graduates from graduates and employers.

2.3 Curriculum evaluation from internal and external experts according to the Office of the Higher Education Commission's Internal Quality Assurance B.E. 2557, and ASEAN University Network-Quality Assurance (AUN-QA).

2.4 Survey on employer satisfaction with graduates.

3. Evaluation of Curriculum Implementation in Accordance with the Curriculum

Evaluation is made annually by the program chair according to the key performance indicators of section 7, item 7. The criteria of curriculum evaluation are

- "Fair" means the first 10 key performance indicators were not achieved.
- "Good" means the first 10 key performance indicators were achieved but not all key performance indicators are achieved.
- "Excellent" means the program satisfies achieves all key performance indicators

4. Review of the Evaluation and Plans for Improvement

4.1 Collecting all information, advice, and evaluations from new graduates, users/stakeholders, and experts.

4.2 Review and analysis of the above information by the program committee.

4.3 Presenting the evaluation report and improvement plan for the program as TQF7 and AUN-QA documents.

APPENDIX A

Course Description

Appendix A
Course Description

1. Required Courses

Credits (lecture – practice – self-study)

ITCS 523 Data Sciences Essentials 3 (3-0-6)

ทสคพ ๕๒๓ ส่วนสำคัญของวิทยาการข้อมูล

An overview of data science principles; data science applications and tools; foundation of mathematics for data science; foundation of computer algorithms for data science; artificial intelligence and machine learning techniques for data science; fundamentals of databases and big data; understanding of big data and domain knowledge; extract/ transform/ load (ETL) for big data; exploratory data analysis and data visualization; research challenges associated with data science

หลักการของวิทยาการข้อมูล การประยุกต์วิทยาการข้อมูลและเครื่องมือทางวิทยาการข้อมูล รากฐานทางคณิตศาสตร์สำหรับวิทยาการข้อมูล รากฐานระเบียบวิธีทางคอมพิวเตอร์สำหรับวิทยาการข้อมูล เทคนิคทางปัญญาประดิษฐ์และการเรียนรู้เชิงเครื่องจักรสำหรับวิทยาการข้อมูล พื้นฐานของระบบฐานข้อมูลและข้อมูลขนาดใหญ่ การทำความเข้าใจความหมายของข้อมูลขนาดใหญ่และความรู้ในแต่ละสาขา การสกัดข้อมูล การแปลงข้อมูล และการดึงข้อมูลสำหรับข้อมูลขนาดใหญ่ การวิเคราะห์ข้อมูลเชิงสำรวจ การนำเสนอข้อมูลในรูปแบบของภาพ ความท้าทายเชิงวิจัยที่เกี่ยวข้องกับวิทยาการข้อมูล

ITCS 531 Mathematics for Computer Science 2 (2-0-4)

ทสคพ ๕๓๑ คณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์

Fundamentals of advanced mathematics used in Computer Science; High-level sets and logics; Proof methods for advanced Computer Science theories; Formal logic; Mathematical induction; Graph theory; Number theory in Computer Science; Numerical analysis; Combinatorial principles; Discrete probability; State machines; Boolean algebra; Finite automata; Context free language

รากฐานของคณิตศาสตร์ขั้นสูงที่ใช้ในด้านวิทยาการคอมพิวเตอร์ เซตและตรรกศาสตร์ระดับสูง วิธีการพิสูจน์ทฤษฎีขั้นสูงทางวิทยาการคอมพิวเตอร์ ตรรกศาสตร์รูปนัย คณิตศาสตร์อุปนัย ทฤษฎีกราฟ ทฤษฎีจำนวนเชิงวิทยาการคอมพิวเตอร์ การวิเคราะห์เชิงตัวเลข หลักการเชิงการจัด ความน่าจะเป็นเชิงวิยุต เครื่องสถานะ พีชคณิตบูลีน ออโตมาตาแบบจำกัด ภาษาไม่พึ่งบริบท

Credits (lecture – practice – self-study)

ITCS 532 Foundations of Computational Science 2 (2-0-4)

ทสคพ ๕๓๒ รากฐานของวิทยาศาสตร์เชิงคำนวณ

Fundamentals of computing theory used in Computer Science; Algorithm analysis and design; Computational complexity; Models of computation; Scientific computing; Applications of Computational Science; Simulation techniques; Numerical methods; High performance computing; Concurrent and parallel computing; Dynamic programming; Optimization model; Automata; Turing machine

รากฐานทฤษฎีการคำนวณที่ใช้ในวิทยาการคอมพิวเตอร์ การออกแบบและวิเคราะห์ขั้นตอนวิธี ความซับซ้อนเชิงคำนวณ ตัวแบบการคำนวณ การคำนวณทางวิทยาศาสตร์ การประยุกต์ของวิทยาศาสตร์เชิงคำนวณ เทคนิคการจำลอง วิธีเชิงตัวเลข การคำนวณเชิงสมรรถนะสูง การคำนวณเชิงพร้อมกันและขนาน กำหนดการพลวัต ตัวแบบการหาค่าเหมาะที่สุด ออโตมาตา เครื่องทัวริง

ITCS 533 Research Methodology in Computer Science 2 (2-0-4)

ทสคพ ๕๓๓ ระเบียบวิธีวิจัยทางวิทยาการคอมพิวเตอร์

Research development process and methodology; research design and planning; experimental design; data gathering; sampling; data management; statistical data analysis; reviewing research works; writing research proposals; qualitative and quantitative research methodology; writing conclusions and reports of research in computer science; research ethics

กระบวนการพัฒนางานวิจัยและระเบียบวิธีวิจัย การวางแผนและออกแบบงานวิจัย การออกแบบการทดลอง การรวบรวมข้อมูล การสุ่มตัวอย่าง การจัดการข้อมูล การวิเคราะห์ข้อมูลเชิงสถิติ การทบทวนงานวิจัย การเขียนโครงร่าง งานวิจัย วิธีวิจัยเชิงปริมาณและเชิงคุณภาพ การเขียนสรุปและรายงานงานวิจัยทางวิทยาการคอมพิวเตอร์ จริยธรรมในการวิจัย

ITCS 671 Seminar in Computer Science I 1 (1-0-2)

ทสคพ ๖๗๑ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๑

State- of- the- art research in computer science; Knowledge of basic methodologies of conducting research project in computer science; Issues, questions and basic solutions in theories and applicatons of computer science and information technology; Ethics and professionalism of computer scientist and plagiarism

ความรู้ในหัวข้อปัจจุบันของงานวิจัยด้านวิทยาการคอมพิวเตอร์ ความรู้ระเบียบวิธีทำวิจัยด้านวิทยาการคอมพิวเตอร์เบื้องต้น ประเด็น ปัญหาและวิธีการแก้ปัญหาเบื้องต้นเกี่ยวกับทฤษฎีและการประยุกต์ใช้วิทยาการคอมพิวเตอร์และเทคโนโลยีสารสนเทศ คุณธรรม จริยธรรม จรรยาบรรณและความเป็นมืออาชีพของนักวิทยาการคอมพิวเตอร์และการโจรกรรมทางวรรณกรรม

Credits (lecture – practice – self-study)

ITCS 672 Seminar in Computer Science II 1 (1-0-2)

ทสคพ ๖๗๒ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๒

State-of-the-art research in Computer Science; Application of methodologies for conducting research project in Computer Science; Issues, questions and solutions in theories and applications of computer science and information technology; Ethics and professionalism of computer scientist and plagiarism

ความรู้ในหัวข้อปัจจุบันของงานวิจัยด้านวิทยาการคอมพิวเตอร์ การประยุกต์ใช้ระเบียบวิธีทำวิจัยด้านวิทยาการคอมพิวเตอร์ ประเด็น ปัญหาและวิธีการแก้ปัญหาเกี่ยวกับทฤษฎีและการประยุกต์ใช้วิทยาการคอมพิวเตอร์และเทคโนโลยีสารสนเทศ คุณธรรม จริยธรรม จรรยาบรรณและความเป็นมืออาชีพของนักวิทยาการคอมพิวเตอร์และการโจรกรรมทางวรรณกรรม

ITCS 673 Seminar in Computer Science III 1 (1-0-2)

ทสคพ ๖๗๓ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๓

State-of-the-art research in computer science; Application of methodologies for conducting research projects in specific Computer Science areas; Issues, questions, and solutions in theories and applications of computer science and information technology; Ethics and professionalism of computer scientist and plagiarism

ความรู้ในหัวข้อปัจจุบันของงานวิจัยด้านวิทยาการคอมพิวเตอร์ การประยุกต์ใช้ระเบียบวิธีทำวิจัยด้านวิทยาการคอมพิวเตอร์ ประเด็น ปัญหาและวิธีการแก้ปัญหาเกี่ยวกับทฤษฎีและการประยุกต์ใช้วิทยาการคอมพิวเตอร์และเทคโนโลยีสารสนเทศที่เฉพาะเจาะจง คุณธรรม จริยธรรม จรรยาบรรณและความเป็นมืออาชีพของนักวิทยาการคอมพิวเตอร์และการโจรกรรมทางวรรณกรรม

2. Elective Courses

(1) Database

ITCS 621 Database Design and Administration 3 (3-0-6)

ทสคพ ๖๒๑ การออกแบบและการบริหารฐานข้อมูล

Principles of database design; relational model; data semantics; logical and physical design; database administration; transaction processing; query processing and optimization; data storage management; advanced indexing techniques; database recovery and backup; database performance evaluation; object-oriented databases; modern database models; column-based databases; database security and privacy; ethics and legal issues; research issues in database design

หลักการการออกแบบฐานข้อมูล ตัวแบบความสัมพันธ์ ความหมายของข้อมูล การออกแบบเชิงตรรกะและเชิงกายภาพ การบริหารฐานข้อมูล การประมวลผลรายการข้อมูล การประมวลผลข้อคำถามและการหาค่าเหมาะที่สุด การจัดการที่เก็บข้อมูล เทคนิคการทำดัชนีขั้นสูง การกู้และการสำรองฐานข้อมูล การประเมินประสิทธิภาพของฐานข้อมูล ฐานข้อมูลเชิงวัตถุ ตัวแบบฐานข้อมูลที่ทันสมัย ฐานข้อมูลเชิงคอลัมน์ ความมั่นคงและความเป็นส่วนตัวของฐานข้อมูล ประเด็นทางจริยธรรมและกฎหมาย ประเด็นงานวิจัยด้านการออกแบบฐานข้อมูล

Credits (lecture – practice – self-study)

ITCS 668 Cloud Database and Big Data Technology 3 (3-0-6)

ทสคพ ๖๖๘ ฐานข้อมูลระบบคลาวด์และเทคโนโลยีข้อมูลขนาดใหญ่

Principles of big data management; applications, tools and techniques used with cloud database and big data; cloud database infrastructure and architectural models; distributed storage technologies; cloud storage performance, resource management of cloud environments; applications of data mining and machine learning methods in big data

หลักการของการบริหารข้อมูลขนาดใหญ่ การประยุกต์ใช้ เครื่องมือ และเทคนิคที่เกี่ยวข้องกับฐานข้อมูลแบบคลาวด์และข้อมูลขนาดใหญ่ ระบบพื้นฐานและระบบจำลองทางโครงสร้างของฐานข้อมูลแบบคลาวด์ เทคโนโลยีการเก็บข้อมูลแบบกระจาย ประสิทธิภาพของฐานข้อมูลระบบคลาวด์ การบริหารจัดการทรัพยากรสำหรับสภาพแวดล้อมของระบบคลาวด์ การประยุกต์ใช้วิธีการทำเหมืองข้อมูลและการเรียนรู้เชิงเครื่องจักรกับข้อมูลขนาดใหญ่

ITCS 682 Advanced Database Systems 3 (3-0-6)

ทสคพ ๖๘๒ ระบบฐานข้อมูลขั้นสูง

Advanced database management systems; Advanced query processing. Parallel and distributed databases; Data warehousing; Online analytical processing; Web and semi-structured data management; NoSQL databases; NewSQL databases; Multimedia databases; Temporal databases; Spatial databases

ระบบจัดการฐานข้อมูลขั้นสูง การประมวลผลข้อคำถามขั้นสูง ฐานข้อมูลเชิงขนานและเชิงกระจาย คลังข้อมูล การประมวลผลเชิงวิเคราะห์แบบออนไลน์ การจัดการข้อมูลเว็บและกึ่งโครงสร้าง ฐานข้อมูลโนเอสคิวแอล ฐานข้อมูลนิวเอสคิวแอล ฐานข้อมูลสื่อประสม ฐานข้อมูลชั่วคราว ฐานข้อมูลเชิงพื้นที่

(2) Network and Security

ITCS 551 Service-oriented and Cloud Computing 3 (3-0-6)

ทสคพ ๕๕๑ การคำนวณเชิงบริการและคลาวด์

Concepts, theories, and techniques for service-oriented computing; Web services and service-oriented architecture (SOA); Cloud architecture and components; Virtualization; Serverless storage and services; Systems for real-world applications; Could security, threats, and privacy; Emerging topics in cloud computing

แนวคิด ทฤษฎี และเทคนิคสำหรับการคำนวณเชิงบริการ การบริการทางเว็บและสถาปัตยกรรมเชิงบริการ สถาปัตยกรรมและส่วนประกอบของคลาวด์ ความเสมือนจริง การเก็บข้อมูลและการบริการแบบไร้เซิร์ฟเวอร์ ระบบสำหรับการประยุกต์ใช้งานจริง ความมั่นคงแบบคลาวด์ การคุกคาม และความเป็นส่วนตัว หัวข้อใหม่ด้านการคำนวณของคลาวด์

Credits (lecture – practice – self-study)

ITCS 554 Information Security Management 3 (3-0-6)
ทสคพ ๕๕๔ การจัดการความมั่นคงของสารสนเทศ

Access control principles and policies, issues, and administration; Communication security on telecommunication networks, network security and Internet security; Risk management and business continuity planning; Security policy, standards, and organization; Computer architecture and system security; Law, investigation and ethics; Application program security; Cryptography; Computer operations security; Physical security; Disaster recovery plans and management; Information technology auditing

หลักการและนโยบายควบคุมการเข้าถึง ประเด็นและการบริหาร ความมั่นคงของการสื่อสารบนเครือข่ายโทรคมนาคม ความมั่นคงของเครือข่าย และความมั่นคงของอินเตอร์เน็ต การจัดการความเสี่ยงและการวางแผนความต่อเนื่องทางธุรกิจ นโยบาย มาตรฐาน และองค์การความมั่นคง สถาปัตยกรรมคอมพิวเตอร์และความมั่นคงของระบบ กฎหมาย การสอบสวนและจริยธรรม ความมั่นคงของโปรแกรมประยุกต์ วิทยาการเข้ารหัสลับ ความมั่นคงของการปฏิบัติงานคอมพิวเตอร์ ความมั่นคงทางกายภาพ แผนการและการจัดการกู้คืนภัยพิบัติ การตรวจสอบด้านเทคโนโลยีสารสนเทศ

ITCS 638 Networks and Distributed Systems Security 3 (3-0-6)
ทสคพ ๖๓๘ ความมั่นคงของระบบเครือข่ายและระบบแบบกระจาย

Cloud system architecture; Cloud security vulnerabilities and attacks; Vulnerabilities in cloud networks; Cloud security; Virtualization system security; Virtualization system vulnerabilities; Virtualization system attacks; Technologies for virtualization- based security enhancement; Cloud governance

สถาปัตยกรรมของระบบคลาวด์ จุดอ่อนและการโจมตีของความมั่นคงระบบคลาวด์ จุดอ่อนของระบบเครือข่ายคลาวด์ ความมั่นคงของระบบคลาวด์ ความมั่นคงของระบบเสมือนจริงในคลาวด์ จุดอ่อนของระบบเสมือนจริงในคลาวด์ และการโจมตีของระบบเสมือนจริงในคลาวด์ เทคโนโลยีในการเสริมสร้างความมั่นคงของระบบเสมือนจริง การกำกับดูแลระบบคลาวด์

ITCS 687 Advanced Computer Security 3 (3-0-6)
ทสคพ ๖๘๗ ความมั่นคงของคอมพิวเตอร์ขั้นสูง

Principles of security; Principles of software security; Security models; Protection and security in operating systems; Protection and security in database systems; Network security; Vulnerabilities; Threats and protection; Privacy; Practical cryptography; Authentication; Malware; Information assurance; Management of security

หลักการความมั่นคง หลักการความมั่นคงด้านซอฟต์แวร์ รูปแบบความมั่นคง การป้องกันและความมั่นคงในระบบปฏิบัติการ การป้องกันและความมั่นคงในระบบฐานข้อมูล ความมั่นคงของเครือข่ายสื่อสาร จุดอ่อน การคุกคาม และการป้องกัน ความเป็นส่วนตัว การเข้ารหัสที่ใช้ได้ การพิสูจน์ตัวตน ซอฟต์แวร์ที่ไม่พึงประสงค์ การประกันสารสนเทศ การจัดการความมั่งคง

(3) Artificial Intelligence

Credits (lecture – practice – self-study)

ITCS 517 Machine Learning 3 (3-0-6)

ทสคพ ๕๑๗ การเรียนรู้เชิงเครื่องจักร

Supervised learning for classification and regression; unsupervised learning such as clustering and dimensionality reduction; reinforcement learning and adaptive control; mathematical and statistical analysis concepts underlying machine learning algorithms; numerical methods and optimization related to machine learning algorithms

การเรียนรู้แบบมีผู้สอนสำหรับการจำแนกกลุ่มและการวิเคราะห์การถดถอย การเรียนรู้แบบไม่มีผู้สอน เช่น การจัดกลุ่ม การลดมิติ การเรียนรู้แบบเสริมและการควบคุมการปรับ แนวคิดการวิเคราะห์เชิงคณิตศาสตร์และสถิติที่สนับสนุนระเบียบวิธีการเรียนรู้เชิงเครื่องจักร ระเบียบวิธีและการเพิ่มประสิทธิภาพเชิงตัวเลขที่เกี่ยวข้องกับอัลกอริทึมในการเรียนรู้ของเครื่อง

ITCS 518 Image Analysis and Understanding 3 (3-0-6)

ทสคพ ๕๑๘ วิเคราะห์และความเข้าใจภาพ

Image formation and acquisition; pixels and cameras; light and colors; interpolation and convolution; filtering in spatial and frequency domain; image de-noising and restoration; edge and corner detection; shape and texture; morphology and transformation; projective geometry for image analysis; depth recovery; surface reconstruction; perceptual grouping and scene understanding

การสร้างและการได้มาของภาพ พิกเซลและกล้อง แสงและสี การแทรกและการบิดภาพ การกรองภาพเชิงพื้นที่และเชิงความถี่ การลดสัญญาณรบกวนในภาพและการบูรณะภาพ การตรวจจับขอบและมุมในภาพ ลักษณะเชิงรูปร่างและแก่นสารของภาพ ลักษณะทางสัณฐานวิทยาของภาพและการเปลี่ยนแปลงภาพ การคาดการณ์ลักษณะทางเรขาคณิตของภาพเพื่อวิเคราะห์เชิงภาพฉาย การฟื้นฟูความลึกของภาพ การบูรณะพื้นผิว การจัดกลุ่มเชิงความหมายและความเข้าใจทัศนียภาพ

ITCS 661 Advanced Artificial Intelligence 3 (3-0-6)

ทสคพ ๖๖๑ ปัญญาประดิษฐ์ขั้นสูง

Principles, methodology, and applications of artificial intelligence; AI agents; problem-solving by searching and heuristic strategies; constrained satisfaction problems; knowledge representation and reasoning; probabilistic and statistical inference; expert systems; evolutionary computing; artificial neural networks; AI technologies and research

แนวคิด วิธีการ และการประยุกต์การใช้งานปัญญาประดิษฐ์ ตัวตนปัญญาประดิษญ์ การแก้ปัญหาด้วยการค้นหาและวิธีกลยุทธ์การค้นหาที่ไม่มีแนวทางหรือกฎเกณฑ์ที่ชัดเจนตายตัว ความพึงพอใจของปัญหาข้อจำกัด ปัญหาของการแทนความรู้และการใช้เหตุผล การอนุมานเชิงสิถิติและความน่าจะเป็น ระบบผู้เชี่ยวชาญ ขั้นตอนวิธีเชิงพันธุกรรม เครือข่ายประสาท เทคโนโลยีและงานวิจัยทางด้านปัญญาประดิษฐ์

Credits (lecture – practice – self-study)

ITCS 665 Natural Language Processing 3 (3-0-6)

ทสคพ ๖๖๕ การประมวลผลภาษาธรรมชาติ

The role of knowledge in language processing; Models and algorithms; Languages; Thought and understanding; Regular expressions and automata; Morphology and finite- state transducers; N-gram models of syntax; Word classes and part- of- speech tagging; Context- free grammars; Parsing with context-free grammar; Features and unification; Language and complexity; Representing meaning; Semantic analysis; Lexical semantics; Word sense disambiguation and information retrieval; Discourse; Dialog; Conversational agents; Natural language generation; Machine translation

บทบาทของความรู้ในการประมวลผลภาษา ตัวแบบและขั้นตอนวิธี ภาษา ความคิดและความเข้าใจ การแสดงแบบปกติและอัตโนมัติ สัณฐานและตัวเปลี่ยนแปรแบบสถานะจำกัด ตัวแบบเอ็นแกรมของไวยากรณ์ ป้ายระบุชั้นคำและส่วนของคำพูด ไวยากรณ์ที่ไม่ขึ้นกับบริบท การตัดคำด้วยไวยากรณ์ที่ไม่ขึ้นกับบริบท ลักษณะและการรวมกัน ภาษาและความซับซ้อน การแทนความหมาย การวิเคราะห์ความหมาย อรรถศาสตร์เชิงศัพท์ ความกำกวมของคำและการค้นคืนสารสนเทศ วจนิพนธ์ การโต้ตอบ เอเจนต์ของการสนทนา การสร้างภาษาธรรมชาติ เครื่องแปลภาษา

ITCS 667 Advanced Computer Vision 3 (3-0-6)

ทสคพ ๖๖๗ คอมพิวเตอร์วิทัศน์ขั้นสูง

Analysis, interpretation, and inference of complex scenes using primate visual perception; The process of inference from noisy and uncertain data using probabilistic, statistical, and data- driven approaches; Image processing; Image representations; Frequency analysis; Texture models; Image segmentation and grouping; Boundary detection; Object detection; Motion estimation and tracking; Extraction of structures from motion; Bayesian inference; Object and scene recognition; Multi-view geometry; Image database

การวิเคราะห์ การตีความ และการอนุมานจากฉากที่ซับซ้อนโดยการรับรู้ภาพเบื้องต้น กระบวนการอนุมานจากข้อมูลที่มีสัญญารบกวน และไม่แน่นอน โดยใช้แนวทางความน่าจะเป็น แนวทางเชิงสถิติ และแนวทางขับเคลื่อนด้วยข้อมูล การประมวลผลภาพ การแทนข้อมูลภาพ การวิเคราะห์ความถี่ ต้นแบบเนื้อหา การแบ่งและรวมกลุ่มภาพ การตรวจหาขอบ การตรวจหาวัตถุ การคาดคะเนการเคลื่อนไหวและการติดตาม การแยกแยะโครงสร้างจากการเคลื่อนไหว การอนุมานแบบเบย์ การรู้จำวัตถุและฉาก เรขาคณิตในหลายมุมมอง ฐานข้อมูลภาพ

Credits (lecture – practice – self-study)

ITCS 692 Advanced Topics in Artificial Intelligence 3 (3-0-6)
ทสคพ ๖๙๒ หัวข้อขั้นสูงด้านปัญญาประดิษฐ์

New research and industry trends in artificial intelligence; Advanced topics in machine learning theories and techniques; Advanced artificial intelligence systems

แนวโน้มงานวิจัยและอุตสาหกรรมใหม่ด้านปัญญาประดิษฐ์ หัวข้อชั้นสูงทางทฤษฎีและเทคนิคของการเรียนรู้เชิงเครื่องจักร ระบบปัญญาประดิษฐ์ชั้นสูง

(4) Software Engineering

ITCS 613 Tools and Environments for Software Development 3 (3-0-6)
ทสคพ ๖๑๓ เครื่องมือและสภาพแวดล้อมสำหรับการพัฒนาซอฟต์แวร์

Tools and environments for software engineering tasks; version and configuration management; build and testing tools; continuous integration and continuous delivery tools; debugging and profiling tools; software analysis; code auditing

เครื่องมือและสภาพแวดล้อมสำหรับงานวิศวกรรมซอฟต์แวร์ การจัดการเวอร์ชันและองค์ประกอบ เครื่องมือสำหรับการสร้างและการทดสอบ เครื่องมือสำหรับการรวมและการส่งมอบอย่างต่อเนื่อง เครื่องมือในการแก้จุดบกพร่องและโปรไฟล์ การวิเคราะห์ซอฟต์แวร์ การตรวจสอบรหัส

ITCS 615 Empirical Software Engineering 3 (3-0-6)
ทสคพ ๖๑๕ วิศวกรรมซอฟต์แวร์เชิงประจักษ์

Empirical methods applied to the field of software engineering; quantitative and qualitative evaluation methods in software engineering; applications of machine learning and data analysis to mining software repositories

วิธีเชิงประจักษ์ที่ประยุกต์ใช้กับสาขาวิชาวิศวกรรมซอฟต์แวร์ วิธีการประเมินเชิงปริมาณและเชิงคุณภาพในวิศวกรรมซอฟต์แวร์ การประยุกต์ใช้การเรียนรู้เชิงเครื่องจักรและการวิเคราะห์ข้อมูลเพื่อขุดค้นที่เก็บซอฟต์แวร์

ITCS 642 Software Engineering Management 3 (3-0-6)
ทสคพ ๖๔๒ การจัดการวิศวกรรมซอฟต์แวร์

Activities, methods, and processes to manage software engineering and software development projects using current best practices; The differences and the similarities in managing software versus hardware projects; Definition and description of software development project framework; Main activities and umbrella activities; Software development project organization and enactment; project organization, project directing, project control, review, evaluation, and project closure; Risk management; Software process improvement standards; CMMI and ISO

กิจกรรม วิธีการ และกระบวนการสำหรับจัดการวิศวกรรมซอฟต์แวร์และโครงการพัฒนาซอฟต์แวร์โดยใช้วิธีปฏิบัติที่เป็นเลิศในปัจจุบัน ความแตกต่างและความเหมือนในการจัดการโครงการด้านซอฟต์แวร์และฮาร์ดแวร์ นิยามและคำบรรยายของกรอบโครงการพัฒนาซอฟต์แวร์ กิจกรรมหลักและกิจกรรมภาพรวม การจัดระเบียบและการบัญญัติโครงการพัฒนาซอฟต์แวร์ การจัดระเบียบโครงการ การอำนวยการโครงการ การควบคุมโครงการ การทบทวน การประเมิน และการปิดโครงการ การจัดการความเสี่ยง มาตรฐานการปรับปรุงกระบวนการซอฟต์แวร์ ซีเอ็มเอ็มไอและไอเอสโอ

Credits (lecture – practice – self-study)

ITCS 644 Software Quality Assurance 3 (3-0-6)

ทสคพ ๖๔๔ การประกันคุณภาพซอฟต์แวร์

Roles, functions, and responsibilities of a quality assurance group; Quality assurance work plan in software development; Quality assurance methods; Software reuse; Metrics and models in software quality engineering

บทบาท หน้าที่ และความรับผิดชอบของกลุ่มประกันคุณภาพ แผนงานของการประกันคุณภาพในการพัฒนาซอฟต์แวร์ วิธีการประกันคุณภาพ การนำซอฟต์แวร์มาใช้อีกครั้ง ตัววัดและตัวแบบในด้านวิศวกรรมคุณภาพของซอฟต์แวร์

ITCS 646 Requirements Engineering 3 (3-0-6)

ทสคพ ๖๔๖ วิศวกรรมความต้องการ

Concepts and activities in systems requirements engineering; Requirements elicitation, analysis, modeling and specification of software engineering requirements; Requirements Validation; Requirements change management; Requirements traceability; Measurement and quality of requirements

แนวคิดหลักและกิจกรรมในวิศวกรรมความต้องการของระบบ การสกัดความต้องการ การวิเคราะห์ การจำลอง และข้อกำหนดความต้องการของวิศวกรรมซอฟต์แวร์ การตรวจสอบความสมเหตุสมผลของความต้องการ การจัดการการเปลี่ยนแปลงความต้องการ การตรวจสอบความต้องการย้อนกลับ การวัดและคุณภาพของความต้องการ

ITCS 693 Advanced Topics in Software Engineering 3 (3-0-6)

ทสคพ ๖๙๓ หัวข้อขั้นสูงด้านวิศวกรรมซอฟต์แวร์

New trends in software engineering approaches, practices, tools and techniques; Advanced topics in software engineering research, such as techniques used in the modeling and analysis of large-scaled, complex systems or new kinds of application, such as data science projects; Practical work in an area of advanced software engineering of contemporary interest

แนวโน้มใหม่ด้านวิธีการ การปฏิบัติ เครื่องมือ และเทคนิคทางวิศวกรรมซอฟต์แวร์ หัวข้อชั้นสูงด้านการวิจัยวิศวกรรมซอฟต์แวร์ อาทิ เทคนิคที่ใช้ในการสร้างแบบจำลองและการวิเคราะห์ระบบขนาดใหญ่ที่มีความซับซ้อน หรือการประยุกต์ในโครงการใหม่ อาทิ โครงการวิทยาการข้อมูล การปฏิบัติงานงานในด้านวิศวกรรมซอฟต์แวร์ชั้นสูงที่เป็นปัจจุบัน

(5) Other Elective Courses

Credits (lecture – practice – self-study)

ITCS 503 Design and Analysis of Algorithms 3 (3-0-6)

ทสคพ ๕๐๓ การออกแบบและวิเคราะห์ขั้นตอนวิธี

Data structures; design and evaluation of algorithms; searching; sorting; hashing; brute-force algorithms; greedy algorithms; divide-and-conquer; backtracking; heuristics; graph algorithms; string matching algorithms; arithmetic algorithms; geometric algorithms; parallel algorithms

โครงสร้างข้อมูล การออกแบบและการประเมินผลของขั้นตอนวิธี การค้นหา การจัดเรียงลำดับ การทำแฮช ขั้นตอนวิธีเชิงการใช้กำลังบังคับ ขั้นตอนวิธีเชิงตะกละ ขั้นตอนวิธีการแบ่งแยกและเอาชนะ การย้อนถอยหลัง วิทยาการศึกษาสำนึก ขั้นตอนวิธีเชิงกราฟ ขั้นตอนวิธีสำหรับการจับคู่สายอักขระ ขั้นตอนวิธีเชิงเลข ขั้นตอนวิธีเชิงเรขาคณิต ขั้นตอนวิธีเชิงขนาน

ITCS 655 Computer Graphics 3 (3-0-6)

ทสคพ ๖๕๕ คอมพิวเตอร์กราฟิกส์

Basic principles for computer graphics; 2d and 3d graphical image synthesis; principles of displaying objects in 3d; computation of visualized surfaces; light and shades; light and color in image synthesis; synthesis of surface mapping, shadows, curves, and areas; geometric transformation; interactive techniques; hidden surface elimination; writing graphics software on video display interfaces; research issues in computer graphics

หลักการพื้นฐานของคอมพิวเตอร์กราฟฟิกส์ การสร้างภาพกราฟฟิกส์แบบ ๒ มิติ และแบบ ๓ มิติ หลักการแสดงวัตถุใน ๓ มิติ การคำนวณพื้นผิวที่มองเห็น แสงและการไล่เฉด แสงและสีในการสร้างภาพ การสร้างแผนที่ ผิว เงา เส้นโค้งและพื้นผิว การเปลี่ยนรูปทรงทางเรขาคณิต เทคนิคการโต้ตอบแบบทันที การลบพื้นผิวซ่อน การเขียนโปรแกรมที่ทำงานบนการ์ดแสดงผล ประเด็นงานวิจัยด้านคอมพิวเตอร์กราฟิกส์

ITCS 694 Bioinformatics 3 (3-0-6)

ทสคพ ๖๙๔ ชีวสารสนเทศศาสตร์

Overview applications of computational methods to biological data such as Genomics and Proteomics; Methods to analyze DNA sequences; Aligning DNA sequences; Methods to analyze the evolution of elements in DNA sequences; Structure and function of DNA sequences; Technologies regarding the genetic sequence; Techniques to detect patterns in sequence data.

ภาพรวมของการประยุกต์ใช้วิธีการทางการคำนวณกับข้อมูลทางด้านชีวภาพ เช่น Genomics and Proteomics วิธีการวิเคราะห์ข้อมูล DNA วิธีการจัดเรียงระหว่าง DNA สองชุด วิธีการวิเคราะห์การพัฒนาการของตำแหน่งต่าง ๆ บน DNA โครงสร้างและหน้าที่ของ DNA เทคโนโลยีที่เกี่ยวข้องกับการประมวลผลข้อมูลพันธุกรรม เทคนิคที่ใช้ในการค้นพบรูปแบบในข้อมูลพันธุกรรม

Credits (lecture – practice – self-study)

ITCS 695 Independent Study 3 (0-6-3)
ทสคพ ๖๙๕ การศึกษาอิสระ

In-depth topics in Computer Science specific to individual student's interest
หัวข้อเชิงลึกเฉพาะทางวิทยาการคอมพิวเตอร์ที่นักศึกษาสนใจ

ITCS 696 Advanced Topics in Computer Science 3 (0-6-3)
ทสคพ ๖๙๖ หัวข้อขั้นสูงด้านวิทยาการคอมพิวเตอร์

Advanced and contemporary research topics in computer science; in- depth analysis of computer science topics

หัวข้อวิจัยชั้นสูงและที่เป็นปัจจุบันด้านวิทยาการคอมพิวเตอร์ การวิเคราะห์เชิงลึกของหัวข้อด้านวิทยาการคอมพิวเตอร์

3. Thesis

ITCS 699 Dissertation 36 (0-108-0)
ทสคพ ๖๙๙ วิทยานิพนธ์
ITCS 799 Dissertation 48 (0-144-0)
ทสคพ ๗๙๙ วิทยานิพนธ์
ITCS 898 Dissertation 48 (0-144-0)
ทสคพ ๘๙๘ วิทยานิพนธ์
ITCS 899 Dissertation 72 (0-216-0)
ทสคพ ๘๙๙ วิทยานิพนธ์

Methods to formulate research questions; Research methodologies; Data collection, analysis, and interpretation; Types of research publications and other academic outputs; Writing and presentation techniques of research articles; Ethics and research integrity; Time management and research project planning

วิธีการตั้งคำถามงานวิจัย ระเบียบวิธีวิจัย การรวบรวมข้อมูล การวิเคราะห์ข้อมูล และการตีความผลการวิจัย ประเภทของผลงานตีพิมพ์และผลทางวิชาการอื่น ๆ เทคนิคการเขียนและการนำเสนอผลงานวิจัย จริยธรรมและจรรยาบรรณการวิจัย การบริหารจัดการเวลาและการวางแผนโครงงานวิจัย

APPENDIX B

Curriculum Vitae of the Faculty in Charge of the Program

Appendix B

Curriculum Vitae of the Faculty

Full time instructors of the curriculum

1. Name Professor Dr. Peter Fereed Haddawy

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Illinois at Urbana-Champaign, USA	1991
M.Sc.	Computer Science	University of Illinois at Urbana-Champaign, USA	1987
B.A.	Mathematics	Pomona College, Claremont, California, USA	1981

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Artificial Intelligence, Intelligence Medical Training Systems, Scientometrics

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Siriapisith T, Kusakunniran W, **Haddawy P**. A retrospective study of 3D deep learning approach incorporating coordinate information to improve the segmentation of pre- and post-operative abdominal aortic aneurysm. PeerJ Computer Science Jul 2022;8:e1033.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Yin MS, **Haddawy P**, Ziemer T, Wetjen F, Supratak A, Chiamsakul K, Siritanakorn W, Chantanalertvilai T, Sriwichai P, Sa-ngamuang C. A deep learning-based pipeline for mosquito detection and classification from wingbeat sounds. Multimedia Tools and Applications Jun 2022. https://doi.org/10.1007/s11042-022-13367-0.	12/1.0	2022
Published research work	Kaluschke M, Yin MS, **Haddawy P**, Suebnukarn S, Zachmann G. The Impact of 3D stereopsis and hand-tool alignment on effectiveness of a VR-based simulator for dental training. In: the 2022 IEEE 10th International Conference on Healthcare Informatics (ICHI); 2022 Jun 11-14; Rochester, MN, USA; 2022. pp. 449-455.	11/0.4	2022
Published research work	Vogtle F, **Haddawy P**, Yin MS, Barkowsky T, Bicout D, Prachyabrued M, Lawpoolsri S. A collaborative platform supporting distributed teams in visualization and analysis of infectious disease data. In: the 2022 IEEE 10th International Conference on Healthcare Informatics (ICHI); 2022 Jun 11-14; Rochester, MN, USA; 2022. pp. 226-232.	11/0.4	2022
Published research work	Yin MS, **Haddawy P**, Nirandmongkol B, Kongthaworn T, Chaisumritchoke C, Supratak A, Sa-Ngamuang C, Sriwichai P. A lightweight deep learning approach to mosquito classification from wingbeat sounds. In: the ACM International Conference on Information Technology for Social Good (GoodIT); 2021 Sep 9-11; Roma, Italy; 2021. pp. 37–42.	11/0.4	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Vasconcelos D, Yin MS, Wetjen F, Herbst A, Ziemer T, Förster A, Barkowsky T, Nunes N, **Haddawy P**. Counting mosquitoes in the wild: An internet of things approach. In: the ACM International Conference on Information Technology for Social Good (GoodIT); 2021 Sep 9-11; Roma, Italy; 2021. pp. 43–48.	11/0.4	2021
Published research work	Kaluschke M, Su Yin M, **Haddawy P**, Srimaneekarn N, Saikaew P, Zachmann G. A shared haptic virtual environment for dental surgical skill training. In: the 2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW); 27 Mar-1 Apr 2021; Lisbon, Portugal. pp. 347-352.	11/0.4	2021
Published research work	**Haddawy P**, Lawpoolsri S, Sa-ngamuang C, Su Yin M, Barkowsky T, Wiratsudakul A, Kaewkungwal J, Khamsiriwatchara A, Sa-angchai P, Sattabongkot J, Cui L. Effects of COVID-19 government travel restrictions on mobility in a rural border area of norther Thailand: a mobile phone tracking study. PLOS ONE Feb 2021;16(2):e0245842.	12/1.0	2021
Published research work	Su Yin M, **Haddawy P**, Suebnukarn S, Kulapichitr F, Rhienmora P, Jatuwat V, Uthaipattanacheep N. Formative feedback generation in a VR-based dental surgical skill training simulator. Journal of Biomedical Informatics Feb 2021;114:103659.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Yin MS, Pomarlan M, **Haddawy P**, Tabassam MR, Chaimanakarn C, Srimaneekarn N, Hassan S. Automated extraction of causal relations from text for teaching surgical concepts. In: the 2020 IEEE International Conference on Healthcare Informatics (ICHI); 2020 Nov 30 – Dec 3; Oldenburg, Germany; 2020. pp. 1-3.	11/0.4	2020
Published research work	Tuarob S, Kang S, Wettayakorn P, Pornprasit C, Sachati T, Hassan S, **Haddawy P**. Automatic classification of algorithm citation functions in scientific literature. IEEE Transactions on Knowledge and Data Engineering Oct 2020;32(10):1881-1896.	12/1.0	2020
Published research work	Yin M, **Haddawy P**, Hosp B, Sa-ngasoongsong P, Tanprathumwong T, Sayo M, Yangyuenpradorn S, Supratak A. A study of expert/novice perception in arthroscopic shoulder surgery. In: the 4th International Conference on Medical and Health Informatics (ICMHI); 2020 Aug 14-16; Kamakura City, Japan; 2020. pp. 71-77.	11/0.4	2020
Published research work	Sa-ngamuang C, **Haddawy P**, Lawpoolsri S, Barkowsky T, Sa-angchai P. A study of individual human mobility patterns related to malaria transmission along the Thai-Myanmar border. In: the 4th International Conference on Medical and Health Informatics (ICMHI); 2020 Aug 14-16; Kamakura City, Japan; 2020. pp. 223–229.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Haddawy P**, Wettayakorn P, Nonthaleerak B, Su Yin M, Schoning J, Laosiritaworn Y, Balla K, Euaungkanakul S, Quengdaeng P, Choknitipakin K, Traivijithhun S, Erawan B, Kraisang T. Large Scale Detailed Mapping of Dengue Vector Breeding Sites Using Street View Images. PLOS Neglected Tropical Diseases Jul 2019;13(7): e0007555.	12/1.0	2019
Published research work	Siriapisith T, Kusakunniran W, **Haddawy P**. 3D segmentation of exterior wall surface of abdominal aortic aneurysm from CT images using variable neighborhood search. Computers in Biology and Medicine Apr 2019;107:73-85.	12/1.0	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

2. Name Associate Professor Dr. Chomtip Pornpanomchai

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Asian Institute of Technology	2000
M.Sc.	Computer Science	Chulalongkorn University	1986
B.Sc.	General Science	Kasetsart University	1981

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Pattern Recognition, Image Processing, Artificial Intelligence

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Pornpanomchai C**, Pornpanomchai V. Plant leaf image recognition based on convolutional neural network. SWU. Sci. J. Dec 2021;37(2):78-92.	13/0.8	2021
Published research work	**Pornpanomchai C**, Jongsriwattanaporn S, Pattanakul T, Suriyun W. Image analysis on color and texture for chili (Capsicum frutescence) seed germination. Science, Engineering and Health Studies Sep 2020;14(3):169–183.	12/1.0	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Pornpanomchai C**. ASEAN+3 banknote recognition system. In: the International Conference of Business Economics and Management in the Age of Intelligence (ICBEM); 2019 Jun 3-5; Taipei, Taiwan; 2019.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

3. Name Associate Professor Dr. Suppawong Tuarob

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science and Engineering	Pennsylvania State University, USA	2015
M.S.	Industrial Engineering	Pennsylvania State University, USA	2015
M.SE.	Computer Science and Engineering	University of Michigan, Ann Arbor, USA	2010
B.SE.	Computer Science	University of Michigan, Ann Arbor, USA	2009

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Machine Learning Applications, Data Science and Engineering, Data and Social Media Mining, Natural Language Processing

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Thaipisutikul T, Tatiyamaneekul P, Lin CY, **Tuarob S**. A deep feature-level fusion model for masked face identity recommendation system. Journal of Ambient Intelligence and Humanized Computing Sep 2022. https://doi.org/10.1007/s12652-022-04380-0.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Assavakamhaenghan N, Tanaphantaruk W, Suwanworaboon P, Choetkiertikul M, **Tuarob S**. Quantifying effectiveness of team recommendation for collaborative software development. Automated Software Engineering Aug 2022;29(51):1-48.	12/1.0	2022
Published research work	Sajjacholapunt P, Supratak A, **Tuarob S**. Automatic measurement of acidity from roasted coffee beans images using efficient deep learning. Journal of Food Process Engineering Aug 2022. https://doi.org/10.1111/jfpe.14147.	12/1.0	2022
Published research work	Pongpalchet S, Nirunwiroj K, **Tuarob S**. Automatic assessment and identification of leadership in college students. IEEE Access Jul 2022;10:79041-79060.	12/1.0	2022
Published research work	Noraset T, Chatrinan K, Tawichsri T, Thaipisutikul T, **Tuarob S**. Language-agnostic deep learning framework for automatic monitoring of population-level mental health from social networks. J Biomed Inform Jul 2022;133:104145.	12/1.0	2022
Published research work	Manzoor MA, Hassan S, Muazzam A, **Tuarob S**, Nawaz R. Social mining for sustainable cities: thematic study of gender-based violence coverage in news articles and domestic violence in relation to COVID-19. Journal of Ambient Intelligence and Humanized Computing Apr 2022. https://doi.org/10.1007/s12652-021-03401-8.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Pornprasit C, Liu X, Kiattipadungkul P, Kertkeidkachorn N, Kim K, Noraset T, Hassan S, **Tuarob S**. Enhancing citation recommendation using citation network embedding. Scientometrics Jan 2022;127:233–264.	12/1.0	2022
Published research work	**Tuarob S**, Assavakamhaenghan N, Tanaphantaruk W, Suwanworaboon P, Ul Hassan S, Choetkiertikul M. Automatic team recommendation for collaborative software development. Empirical Software Engineering May 2021;26(64).	12/1.0	2021
Published research work	Said A, Ul Hassan S, **Tuarob S**, Nawaz R, Shabbir M. DGSD: Distributed graph representation via graph statistical properties. Future Generation Computer Systems Feb 2021;119:166-175.	12/1.0	2021
Published research work	Wang W, Liu J, Tang T, **Tuarob S**, Xia F, Gong Z, King I. Attributed collaboration network embedding for academic relationship mining. ACM Transactions on the Web Feb 2021;15(1):1-20.	12/1.0	2021
Published research work	Noraset T, Lowphansirikul L, **Tuarob S**. WabiQA: A Wikipedia-based Thai question-answering system. Information Processing & Management Jan 2021;58(1):102431.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Thaipisutikul T, **Tuarob S**, Pongpalchet S, Amornvatcharapong A, K. Shih T. Automated classification of criminal and violent activities in Thailand from online news articles. In: the 2021 13th International Conference on Knowledge and Smart Technology (KST); 2021 Jan 21-24; Chonburi, Thailand; 2021. pp.170-175.	11/0.4	2021
Published research work	Sangtunchai P, Kim KS, Kim T, Noraset T, **Tuarob S**. Intelligent distributed customer anticipation approach for taxi routing optimization. In: the 2020 12th International Conference on Knowledge and Smart Technology (KST); 2020 Jan 29 – Feb 1; Pattaya, Thailand; 2020. pp. 149-154.	11/0.4	2020
Published research work	Safder I, Hassan S-U, Visvizi A, Noraset T, Nawaz R, **Tuarob S**. Deep learning-based extraction of algorithmic metadata in full-text scholarly documents. Information Processing and Management Nov 2020;57(6):102269.	12/1.0	2020
Published research work	**Tuarob S**, Kang S, Wettayakorn P, Pornprasit C, Sachati T, Hassan S, Haddawy P. Automatic classification of algorithm citation functions in scientific literature. IEEE Transactions on Knowledge and Data Engineering Oct 2020;32(10):1881-1896.	12/1.0	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Assavakamhaenghan N, Suwanworaboon P, Tanaphantaruk W, **Tuarob S**, Choetkiertikul M. Towards team formation in software development: a case study of moodle. In: the 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2020 Jun 24-27; Phuket, Thailand; 2020. pp. 157–160.	11/0.4	2020
Published research work	Pongpaichet S, T. Unprasert T, **Tuarob S**, Sajjacholapunt P. SGD-Rec: a matrix decomposition based model for personalized movie recommendation. In: the 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2020 Jun 24-27; Phuket, Thailand; 2020. pp. 588-591.	11/0.4	2020
Published research work	Suwanworaboon P, Lynden S, **Tuarob S**. Enhancing visualization applications using open data sources. In: the 2020 17th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2020 Nov 4-6; Bangkok, Thailand; 2020. pp. 30-35.	11/0.4	2020
Published research work	Pornprasit C, Liu X, Kertkeidkachorn N, Kim K, Noraset T, **Tuarob S**. ConvCN: a CNN based citation network embedding algorithm towards citation recommendation. In: the ACM/IEEE Joint Conference on Digital Libraries (JCDL); 2020 Aug 1-5; Wuhan, Hubei, P. R. China; 2020. pp. 433–436.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Assavakamhaenghan N, Choetkiertikul M, **Tuarob S**, Kula R, Hata H, Ragkhitwetsagul C, Sunetnanta T, Matsumoto K. Software team member configurations: a study of team effectiveness in moodle. In: 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 19-195.	11/0.4	2019
Published research work	Taveekarn W, Yimudom C, Sukkanta S, Lynden S, Sawangphol W, **Tuarob S**. DATA++: an automated tool for intelligent data augmentation using Wikidata. In: the 2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2019 Jul 10-12; Chonburi, Thailand; 2019. pp. 91-96.	11/0.4	2019
Published research work	Lowphansirikul C, Kim K, Vinayaraj P, **Tuarob S**. 3D semantic segmentation of large-scale point-clouds in urban areas using deep learning. In: the 2019 11th International Conference on Knowledge and Smart Technology (KST); 2019 Jan 23-26; Phuket, Thailand; 2019. pp. 238-243.	11/0.4	2019
Published research work	Puengdang S, **Tuarob S**, Sattabongkot T, Sakboonyarat B. EEG-based person authentication method using deep learning with visual stimulation. In: the 2019 11th International Conference on Knowledge and Smart Technology (KST); 2019 Jan 23-26; Phuket, Thailand; 2019. pp. 6-10.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

4. Name Associate Professor Dr. Vasaka Visoottiviseth

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Engineering	Nara Institute of Science and Technology, Japan	2003
M.Eng.	Computer Engineering	Tokyo University of Agriculture and Technology, Japan	1999
B.Eng.	Computer Engineering	Tokyo University of Agriculture and Technology, Japan	1997

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Multicast, Routing, IPv6, Traffic Measurement and Network Monitoring, Network Security, Internet Architecture

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Katsura Y, Sakarin P, Yamai N, Kimiyama H, **Visoottiviseth V**. Quick blocking operation of firewall system cooperating with IDS and SDN. In: the 2022 24th International Conference on Advanced Communication Technology (ICACT); 2022 Feb 13-16; Pyeongchang, Korea; 2022. pp. 393-398.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Min NM, **Visoottiviseth V**, Teerakanok S, Yamai N. OWASP IoT top 10 based attack dataset for machine learning. In: the 2022 24th International Conference on Advanced Communication Technology (ICACT); 2022 Feb 13-16; Pyeongchang, Korea; 2022. pp. 317-322.	11/0.4	2022
Published research work	**Visoottiviseth V**, Khengthong T, Kesorn K, PatcharadechathornJ. ASPAHI: application for security and privacy awareness education for home IoT devices. In: the 2021 25th International Computer Science and Engineering Conference (ICSEC); 2021 Nov 18-20; Chiang Rai, Thailand; 2021. pp. 388-393.	11/0.4	2021
Published research work	**Visoottiviseth V**, Jongjariyangkul T, Khambanguay P, Toranathumkul C. ICNET: an edutainment web application for learning computer networks. In: the 2021 25th International Computer Science and Engineering Conference (ICSEC); 2021 Nov 18-20; Chiang Rai, Thailand; 2021. pp. 206-211.	11/0.4	2021
Published research work	**Visoottiviseth V**, Sakarin P, Thongwilai J, Choobanjong T. Signature-based and behavior-based attack detection with machine learning for home IoT devices. In: the 2020 IEEE Region 10 Conference (TENCON); 2020 Nov 16-19; Osaka, Japan. pp. 829-834.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Visoottiviseth V**, Chutaporn G, Kungvanruttana S, Paisarnduangjan J. PITI: Protecting internet of things via intrusion detection system on raspberry Pi. In: the 2020 International Conference on Information and Communication Technology Convergence (ICTC); 2020 Oct 21-23; Jeju, South Korea. pp. 75-80.	11/0.4	2020
Published research work	Pojsomphong N, **Visoottiviseth V**, Sawangphol W, Khurat A, Falls D. Investigation of drone vulnerability and its countermeasure. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Malaysia; 2020. pp. 251-255.	11/0.4	2020
Published research work	Prinyavitit S, **Visoottiviseth V**, Haga J, Takano R. Digital poster management system on SAGE2. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Malaysia; 2020. pp. 64-67.	11/0.4	2020
Published research work	Puakalong C, Takano R, **Visoottiviseth V**, Khurat A, Sawangphol W. A network bandwidth limitation with the DEMU network emulator. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Malaysia; 2020. pp. 151-154.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Reantongcome V, **Visoottiviseth V**, Sawangphol W, Khurat A, Falls D. Securing and trustworthy blockchain-based multi-tenant cloud computing. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Penang, Malaysia. pp. 256-261.	11/0.4	2020
Published research work	Phan-udom P, **Visoottiviseth V**, Ryousei T. Intercontinental Disk-to-Disk data transfer experiment with a lightweight DTN software stack. In: the 2020 22nd International Conference on Advanced Communication Technology (ICACT); 2020 Feb 16-19; Phoenix Park, South Korea. pp. 485-490.	11/0.4	2020
Published research work	Chockwanich N, **Visoottiviseth V**. Intrusion detection by deep learning with TensorFlow. In: the 2019 21st International Conference on Advanced Communication Technology (ICACT); 2019 Feb 17-20; PyeongChang, South Korea; 2019. pp. 654-659.	11/0.4	2019
Published research work	**Visoottiviseth V**, Poonsiri K. The study of DNSSEC deployment status in Thailand. In: the 2019 IEEE 6th Asian Conference on Defence Technology (ACDT); 2019 Nov 13-15; Bali, Indonesia; 2019. pp. 13-18.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Visoottiviseth V**, Kotarasu C, Cheunprapanusorn N, Chamornmarn T. A mobile application for security assessment towards the internet of thing devices. In: the 2019 IEEE 6th Asian Conference on Defence Technology (ACDT); 2019 Nov 13-15; Bali, Indonesia; 2019. pp. 1-7.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

5. Name Associate Professor Dr. Worapan Kusakunniran

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science and Engineering	University of New South Wales, Australia	2013
B.Eng. (1st Class Honor)	Computer Engineering	University of New South Wales, Australia	2008

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Gait Recognition, Biometrics, Pattern Recognition, Medical Image Processing, Computer Vision, Machine Learning, Action and Behavioral Analysis, Image and Video Processing, Object Tracking, Object Classification and Retrieval

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Yao L, **Kusakunniran W**, Wu Q, Xu J, Zhang J. Recognizing gaits across walking and running speeds. ACM Transactions on Multimedia Computing, Communications and Applications Aug 2022;18(3):75.	12/1.0	2022
Published research work	Siriapisith T, **Kusakunniran W**, Haddawy P. A retrospective study of 3D deep learning approach incorporating coordinate information to improve the segmentation of pre- and post-operative abdominal aortic aneurysm. PeerJ Computer Science Jul 2022;8:e1033.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Saramas K, Kraisangka J, Supratak A, Noraset T, Yimwadsana B, **Kusakunniran W**. Human detection and social distancing measurement in a video. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-4.	11/0.4	2022
Published research work	Karnjanapreechakorn S, **Kusakunniran W**, Siriapisith T, Saiviroonporn P. Multi-level pooling encoder–decoder convolution neural network for MRI reconstruction. PeerJ Computer Science Mar 2022;8:e934.	12/1.0	2022
Published research work	**Kusakunniran W**, Aukkapinyo K, Borwarnginnn P, Imaromkul T, Thongkanchorn K, Wattanadhirach D, Mongkolluksamee S, Thammasudjarit R, Ritthipravat P, Tuakta P, Benjapornlert P. Measurement of tongue motion using optical flows on segmented areas. In: the 2022 14th International Conference on Knowledge and Smart Technology (KST); 2022 Jan 26-29; Chonburi, Thailand; 2022. pp. 24-28.	11/0.4	2022
Published research work	Yao L, **Kusakunniran W**, Wu Q, Zhang J, Tang Z, Yang W. Robust gait recognition using hybrid descriptors based on Skeleton Gait Energy Image. Pattern Recognition Letters Oct 2021; 150:289-296.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Kusakunniran W**, Charoenpanich P, Smunyarnoraset P, Suksai S, Kanchanapreechakorn S, Wu Q, Zhang J. Hybrid learning of vessel segmentation in retinal images. ECTI Transactions on Computer and Information Technology (ECTI-CIT) Apr 2021;15(1):1-11.	12/1.0	2021
Published research work	Yao L, **Kusakunniran W**, Wu Q, Zhang J. Gait recognition using a few gait frames. PeerJ Computer Science Mar 2021;7:e382.	12/1.0	2021
Published research work	Borwarmginn P, **Kusakunniran W**, Kanchanapreechakorn S, Thongkanchorn K. Knowing Your Dog Breed: Identifying a Dog Breed with Deep Learning. International Journal of Automation and Computing Feb 2021;18(1):45-54.	12/1.0	2021
Published research work	**Kusakunniran W**, Wiratsudakul A, Chuachan U, Kanchanapreechakorn S, Imaromkul T, Suksriupatham N, Thongkanchorn K. Biometric for cattle identification using muzzle patterns. International Journal of Pattern Recognition and Artificial Intelligence Nov 2020;34(12):2056007.	12/1.0	2020
Published research work	Aukkapinyo K, Sawangwong S, Pooyoi P, **Kusakunniran W**. Localization and classification of rice-grain images using region proposals-based convolutional neural network. International Journal of Automation and Computing Apr 2020;17:233-246.	12/1.0	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Natakuaithung P, **Kusakunniran W**. Development of AR learning assistance tool for clay-sculpting 3D model. In: the 2020 12th International Conference on Knowledge and Smart Technology (KST); 2020 Jan 29 – Feb 1; Pattaya, Thailand; 2020. pp. 109-114.	11/0.4	2020
Published research work	Li N, **Kusakunniran W**, Hotta S. Detection of animal behind cages using convolutional neural network. In: the 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2020 Jun 24-27; Phuket, Thailand; 2020. pp. 242-245.	11/0.4	2020
Published research work	Aukkapinyo K, Sawangwong S, Pooyoi P, **Kusakunniran W**. Localization and classification of rice-grain images using region proposals-based convolutional neural network. International Journal of Automation and Computing Apr 2020;17:233-246.	12/1.0	2020
Published research work	Borwarnginn P, Thongkanchorn K, Kanchanapreechakorn S, **Kusakunniran W**. Breakthrough conventional based approach for dog breed classification using CNN with transfer learning. In: the 2019 11th International Conference on Information Technology and Electrical Engineering (ICITEE); 2019 Oct 10-11; Pattaya, Thailand; 2019. pp. 1-5.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Thongkanchorn K, Kanchanapreechakorn S, Borwarnginn P, **Kusakunniran W**. Thai character segmentation in handwriting images using four directional depth first search. In: the 2019 11th International Conference on Information Technology and Electrical Engineering (ICITEE); 2019 Oct 10-11; Pattaya, Thailand; 2019. pp. 1-5.	11/0.4	2019
Published research work	Pooyoi P, Borwarnginn P, Haga JH, **Kusakunniran W**. Snow scene segmentation using CNN-based approach with transfer learning. In: the 2019 16th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2019 Jul 10-13; Pattaya, Thailand; 2019. pp. 97-100.	11/0.4	2019
Published research work	**Kusakunniran W**, Kanchanapreechakorn S, Thongkanchorn K. Instance-based learning for blood vessel segmentation in retinal images. In: the 15th International Conference on Computing and Information Technology (IC2IT); 2019 Jul 4-5; Bangkok, Thailand; 2019. pp. 111-118.	11/0.4	2019
Published research work	Siriapisith T, **Kusakunniran W**, Haddawy P. 3D segmentation of exterior wall surface of abdominal aortic aneurysm from CT images using variable neighborhood search. Computers in Biology and Medicine Apr 2019;107:73-85.	12/1.0	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

6. Name Assistant Professor Dr. Boonsit Yimwadsana

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Electrical Engineering	Columbia University, USA	2007
M.S.	Electrical Engineering	Columbia University, USA	2001
B.S.	Electrical Engineering	Columbia University, USA	2000

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Computer Communications and Networks, Computer Science

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Saramas K, Kraisangka J, Supratak A, Noraset T, **Yimwadsana B**, Kusakunniran W. Human detection and social distancing measurement in a video. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-4.	11/0.4	2022
Published research work	**Yimwadsana B**, Chanthapeth P. Determining natural rubber humidity level using rubber color. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-5.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Yimwadsana B**, Vichhaiy S. Improving accuracy of an AoA-based Wi-Fi indoor localization using Kalman filter. In: the 2020 17th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2020 Nov 4-6; Bangkok, Thailand. pp. 155-159.	11/0.4	2020
Published research work	Tao Q, Cao Y, **Yimwadsana B**, Fu X, RSS-based underwater acoustic distance measurement with multiple frequencies. Ocean Engineering Nov 2020;215(107772).	12/1.0	2020
Published research work	Liu R, Guo B, Zhang A, **Yimwadsana B**. Research on GPS precise point positioning algorithm with a Sea Surface Height Constraint. Ocean Engineering Feb 2020;197(106826).	12/1.0	2020
Published research work	**Yimwadsana B**, Serey V, Sanghlao S. Performance analysis of an AoA-based Wi-Fi indoor positioning system. In: the 2019 19th International Symposium on Communications and Information Technologies (ISCIT); 2019 Sep 25-27; Ho Chi Minh City, Vietnam; 2019. pp. 36-41.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	533	Research Methodology in Computer Science	2 (2-0-4)
ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

7. Name Assistant Professor Dr. Charnyote Pluempitiwiriyawej

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Engineering-CISE	University of Florida, USA	2001
M.S.	Computer Science	University of Maryland, USA	1997
B.Eng. (2nd Class Honor)	Computer Engineering	King Mongkut's institute of Technology Thonburi	1994

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Data and Knowledge Management, Data Warehousing, Data Mining, Data Engineering, Data Science, Natural Language Processing and Information Retrieval.

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Pluempitiwiriyawej C**. Comparison of learning achievement between online and onsite learning in database design course. Journal of Information and Learning Aug 2022; 33(2):45-56.	9/0.6	2022
Published research work	Phon U, **Pluempitiwiriyawej C**. Khmer WordNet construction. In: the 2020 5th International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 122-127.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Ya Aung S, **Pluempitiwiriyawej C**. Blockchain-based implementation for integration of DNA profiles information systems. In: the 2020 5th International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 110-115.	11/0.4	2020

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

8. Name Assistant Professor Dr. Morakot Choetkiertikul

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Wollongong, Australia	2018
M.Sc.	Computer Science	Mahidol University	2012
B.Sc.	Information and Communication Technology	Mahidol University	2007

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Artificial Intelligence for Software Engineering, Software Engineering Analytics, Software Maintenance and Evolution, Software Process Improvement, Distributed Software Development

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Assavakamhaenghan N, Tanaphantaruk W, Suwanworaboon P, **Choetkiertikul M**, Tuarob S. Quantifying effectiveness of team recommendation for collaborative software development. Automated Software Engineering Aug 2022;29(51):1-48.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kangwanwisit P, **Choetkiertikul M**, Ragkhitwetsagul C, Sunetnanta T, Maipradit R, Hata H, Matsumoto K. A component recommendation model for issues in software projects. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-6.	11/0.4	2022
Published research work	Ragkhitwetsagul C, Krinke J, **Choetkiertikul M**, Sunetnanta T, Sarro F. Identifying software engineering challenges in software SMEs: a case study in Thailand. In: the 2022 IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER); 2022 Mar 15-18; Honolulu, USA; 2022. pp. 218-222.	11/0.4	2022
Published research work	Phaithoon S, Wongnil S, Pussawong P, **Choetkiertikul M**, Ragkhitwetsagul C, Sunetnanta T, Maipradit R, Hata H, Matsumoto K. FixMe: a GitHub bot for detecting and monitoring on-hold self-admitted technical debt. In: the 2021 36th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2021 Nov 15-19; Melbourne, Australia; 2021. pp. 1257-1261.	11/0.4	2021
Published research work	Tuarob S, Assavakamhaenghan N, Tanaphantaruk W, Suwanworaboon P, Ul Hassan S, **Choetkiertikul M**. Automatic team recommendation for collaborative software development. Empirical Software Engineering May 2021;26(64).	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Choetkiertikul M**, Dam HK, Tran T, Pham T, Ragkhitwetsagul C, Ghose A. Automatically recommending components for issue reports using deep learning. Empirical Software Engineering Feb 2021;26(14):1-39.	12/1.0	2021
Published research work	Assavakamhaenghan N, Suwanworaboon P, Tanaphantaruk W, Tuarob S, **Choetkiertikul M**. Towards team formation in software development: a case study of moodle. In: the 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2020 Jun 24-27; Phuket, Thailand; 2020. pp. 157–160.	11/0.4	2020
Published research work	Phan-udom P, Wattanakul N, Sakulniwat T, Ragkhitwetsagul C, Sunetnanta T, **Choetkiertikul M**, Kula R. Teddy: automatic recommendation of pythonic idiom usage for pull-based software projects. In: the 2020 IEEE International Conference on Software Maintenance and Evolution (ICSME); 2020 Sep 28 – Oct 2; Adelaide, SA, Australia; 2020. pp. 806-809.	11/0.4	2020
Published research work	Khanan C, Luewichana W, Pruktharathikoon K, Jiarpakdee J, Tantithamthavorn C, **Choetkiertikul M**, Ragkhitwetsagul C, Sunetnanta T. JITBot: an explainable just-in-time defect prediction bot. In: the 2020 35th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2020 Sep 21-25; Melbourne, VIC, Australia; 2020. pp. 1336-1339.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Assavakamhaenghan N, **Choetkiertikul M**, Tuarob S, Kula R, Hata H, Ragkhitwetsagul C, Sunetnanta T, Matsumoto K. Software team member configurations: a study of team effectiveness in moodle. In: 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 19-195.	11/0.4	2019
Published research work	Bunkerd T, Wang D, Kula R, Ragkhitwetsagul C, **Choetkiertikul M**, Sunetnanta T, Ishio T, Matsumoto K. How do contributors impact code naturalness? an exploratory study of 50 python projects. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 7-75.	11/0.4	2019
Published research work	Arammongkolvichai V, Koschke R, Ragkhitwetsagul C, **Choetkiertikul M**, Sunetnanta T. Improving clone detection precision using machine learning techniques. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 31-315.	11/0.4	2019
Published research work	Sakulniwat T, Kula R, Ragkhitwetsagul C, **Choetkiertikul M**, Sunetnanta T, Wang D, Ishio T, Matsumoto K. Visualizing the usage of pythonic idioms over time: a case study of the with open Idiom. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 43-435.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Wattanakriengkrai S, Srisermphoak N, Sintoplertchaikul S, **Choetkiertikul M**, Ragkhitwetsagul C, Sunetnanta T, Hata H, Matsumoto K. Automatic classifying self-admitted technical debt using n-gram IDF. In: the 2019 26th Asia-Pacific Software Engineering Conference (APSEC); 2019 Dec 2-5; Putrajaya, Malaysia; 2019. pp. 316-322.	11/0.4	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

9. Name Assistant Professor Dr. Mores Prachyabrued

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Louisiana at Lafayette, USA	2013
M.S.	Computer Science	University of Louisiana at Lafayette, USA	2007
M.Eng.	Computer Engineering	Kasetsart University	2002
B.Eng.	Computer Engineering	Kasetsart University	1998

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Virtual Reality, Entertainment Computing, Computer Graphics, Artificial Intelligence

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Vogtle F, Haddawy P, Yin MS, Barkowsky T, Bicout D, **Prachyabrued M**, Lawpoolsri S. A collaborative platform supporting distributed teams in visualization and analysis of infectious disease data. In: the 2022 IEEE 10th International Conference on Healthcare Informatics (ICHI); 2022 Jun 11-14; Rochester, MN, USA; 2022. pp. 226-232.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Prachyabrued M**, Haddawy P, Tengputtipong K, Su Yin M, Bicout D, Laosiritaworn Y. Immersive visualization of dengue vector breeding sites extracted from street view images. In: the 2020 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR); 2020 Dec 18-20; Online conference; 2020. pp. 33-42.	11/0.4	2020
Published research work	**Prachyabrued M**, Wattanadhirach D, Dudrow RB, Krairojananan N, Fuengfoo P. Toward virtual stress inoculation training of prehospital healthcare personnel: a stress-inducing environment design and investigation of an emotional connection factor. In: the 2019 IEEE Conference on Virtual Reality and 3D User Interfaces (VR); 2019 Mar 23-27; Osaka, Japan; 2019. pp. 671-679.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

10. Name Assistant Professor Dr. Preecha Tangworakitthaworn

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Southampton, United Kingdom	2014
M.Sc.	Computer Science	Mahidol University	2006
B.Sc.	Computer Science	Mahidol University	1998

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Conceptualization, Conceptual Modeling, Instructional Design, Intended Learning Outcome, Competency, Outcome-Based Education, ELearning, Technology-Enhanced Learning

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Huu PN, **Tangworakitthaworn P**, Gilbert L. The design and development of an adaptive intelligent tutoring system based on constructive alignment and cognitive theories. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-6.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Huu PN, **Tangworakitthaworn P**, Gilbert L. Towards self-regulated individual learning path generation using outcome taxonomies and constructive alignment. In: the 2021 IEEE International Conference on Engineering, Technology & Education (TALE); 2021 Dec 5-8; Wuhan, Hubei Province, China; 2021. pp. 465-472.	11/0.4	2021
Published research work	Nguyen PH, **Tangworakitthaworn P**, Gilbert L. Measuring individual learning effectiveness based on cognitive taxonomies. In: the 2020 IEEE Region 10 Conference (TENCON); 2020 November 16-19; Osaka, Japan; 2020. pp. 1002-1006.	11/0.4	2020
Published research work	**Tangworakitthaworn P**, Tengchaisri V, Sudjaidee P. Serious game enhanced learning for agricultural engineering education: two games development based on IoT technology. In: the 2020 - 5th International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 82-86.	11/0.4	2020
Published research work	**Tangworakitthaworn P**, Owatsuwan P, Nongyai N, Arayapong N. An image-based vocabulary learning system based on multi-agent system. In: the 2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2019 Jul 10-12; Chonburi, Thailand; 2019. pp. 324-329.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

11. Name Assistant Professor Dr. Songsri Tangsripairoj

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Oklahoma State University, USA	2004
M.Sc.	Computer Science	Mahidol University	1996
B.Sc. (2^{nd} Class Honor)	Computer Science	Thammasat University	1994

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Database systems, Data Warehousing, Data Mining, Software Engineering

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Tangsripairoj S**, Sutanaphanit P, Treenitikul S, Wongaod W, Maneeintr K. Stockify: A web application of fundamental stock analysis for new investors. In: the 2020 5^{th} International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 76-81.	11/0.4	2020
Published research work	**Tangsripairoj S**, Wongkham N, Leelalerkiat B, Chuenpukdi S. WhatTheHealth: An android application for consumers of healthy food. In: the 2019 16^{th} International Joint Conference on Computer Science and Software Engineering (JCSSE); 2019 Jul 10-12; Chonburi, Thailand; 2019. pp. 61-66.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Tangsripairoj S**, Sukkhet M, Sumanotham J, Yusuk B. Kiddy manner: a game-based mobile application for children learning Thai social etiquette. In: the 2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2019 Jul 10-12; Chonburi, Thailand; 2019. pp. 109-114.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

12. Name Assistant Professor Dr. Thanwadee Sunetnanta

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Distributed Software Engineering	Imperial College, United Kingdom	1999
M.Sc.	Foundation of Advanced Information Technology	Imperial College, United Kingdom	1993
B.Sc. (2nd Class Honor)	Computer Science	Thammasat University	1991

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Software Engineering (in particular, requirement engineering, software process improvement, qualitative software quality), Knowledge Engineering, Internet Technology, Software Engineering Education

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kangwanwisit P, Choetkiertikul M, Ragkhitwetsagul C, **Sunetnanta T**, Maipradit R, Hata H, Matsumoto K. A component recommendation model for issues in software projects. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-6.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Ragkhitwetsagul C, Krinke J, Choetkiertikul M, **Sunetnanta T**, Sarro F. Identifying software engineering challenges in software SMEs: a case study in Thailand. In: the 2022 IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER); 2022 Mar 15-18; Honolulu, USA; 2022. pp. 218-222.	11/0.4	2022
Published research work	Phaithoon S, Wongnil S, Pussawong P, Choetkiertikul M, Ragkhitwetsagul C, **Sunetnanta T**, Maipradit R, Hata H, Matsumoto K. FixMe: a GitHub bot for detecting and monitoring on-hold self-admitted technical debt. In: the 2021 36th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2021 Nov 15-19; Melbourne, Australia; 2021. pp. 1257-1261.	11/0.4	2021
Published research work	Srisuphab A, Kaakkurivaara N, Silapachote P, Tangkit K, Meunpong P, **Sunetnanta T**. Illegal logging listeners using IoT networks. In: the 2020 IEEE Region 10 Conference (TENCON); 2020 Nov 16-19; Osaka, Japan; 2020. pp. 1277-1282.	11/0.4	2020
Published research work	Phan-udom P, Wattanakul N, Sakulniwat T, Ragkhitwetsagul C, **Sunetnanta T**, Choetkiertikul M, Kula R. Teddy: automatic recommendation of pythonic idiom usage for pull-based software projects. In: the 2020 IEEE International Conference on Software Maintenance and Evolution (ICSME); 2020 Sep 28 – Oct 2; Adelaide, SA, Australia; 2020. pp. 806-809.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Khanan C, Luewichana W, Pruktharathikoon K, Jiarpakdee J, Tantithamthavorn C, Choetkiertikul M, Ragkhitwetsagul C, **Sunetnanta T**. JITBot: an explainable just-in-time defect prediction bot. In: the 2020 35th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2020 Sep 21-25; Melbourne, VIC, Australia; 2020. pp. 1336-1339.	11/0.4	2020
Published research work	Bunkerd T, Wang D, Kula R, Ragkhitwetsagul C, Choetkiertikul M, **Sunetnanta T**, Ishio T, Matsumoto K. How do contributors impact code naturalness? an exploratory study of 50 python projects. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 7-75.	11/0.4	2019
Published research work	Arammongkolvichai V, Koschke R, Ragkhitwetsagul C, Choetkiertikul M, **Sunetnanta T**. Improving clone detection precision using machine learning techniques. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 31-315.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Assavakamhaenghan N, Choetkiertikul M, Tuarob S, Kula R, Hata H, Ragkhitwetsagul C, **Sunetnanta T**, Matsumoto K. Software team member configurations: a study of team effectiveness in moodle. In: 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 19-195.	11/0.4	2019
Published research work	Sakulniwat T, Kula R, Ragkhitwetsagul C, Choetkiertikul M, **Sunetnanta T**, Wang D, Ishio T, Matsumoto K. Visualizing the usage of pythonic idioms over time: a case study of the with open Idiom. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 43-435.	11/0.4	2019
Published research work	Wattanakriengkrai S, Srisermphoak N, Sintoplertchaikul S, Choetkiertikul M, Ragkhitwetsagul C, S**unetnanta T**, Hata H, Matsumoto K. Automatic classifying self-admitted technical debt using n-gram IDF. In: the 2019 26th Asia-Pacific Software Engineering Conference (APSEC); 2019 Dec 2-5; Putrajaya, Malaysia; 2019. pp. 316-322.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

13. Name Assistant Professor Dr. Thitinan Tantidham

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	RWTH Aachen University, Germany	2010
M.Sc.	Computer Science	Mahidol University	1997
B.Eng.	Computer Engineering	Kasetsart University	1993

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Computer and Data Communications, Green Computing and Applications, Embedded System and Applications

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Hu C, Kuo L, Chen Y, **Tantidham T**, Mongkolwat P. QoS-prioritised media delivery with adaptive data throughput in IoT-based home networks. International Journal of Web and Grid Services Mar 2021;17(1):60-80.	12/1.0	2021
Published research work	Bamrung C, Kamintra W, Hui L, Hu C, **Tantidham T**, Mongkolwat P. Self-organized unstructured network architecture for device and service deployment in smart home. In: the 2020 IEEE 2nd Global Conference on Life Sciences and Technologies (LifeTech); 2020 Mar 10-12; Kyoto, Japan; 2020. pp. 288-289.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Konngern S, Kaibutr N, Konru N, **Tantidham T**, Hu C, Thaipisutikul T, Timothy K. Shih TK, Mongkolwat P. Assistive robot with action planner and schedule for family. In: the 2019 Twelfth International Conference on Ubi-Media Computing (Ubi-Media); 2019 Aug 5-8; Bali, Indonesia; 2019. pp. 171-176.	11/0.4	2019
Published research work	**Tantidham T**, Aung YN. Emergency service for smart home system using ethereum blockchain: system and architecture. In the 2019 IEEE International Conference on Pervasive Computing and Communications Workshops (PerCom Workshops); 2019 Mar 11-15; Kyoto, Japan; 2019. pp. 888-893.	11/0.4	2019
Published research work	Aung YN, **Tantidham T**. Ethereum-based emergency service for smart home system: smart contract implementation. In: the 2019 21st International Conference on Advanced Communication Technology (ICACT); 2019 Feb 17-20; PyeongChang, South Korea; 2019. pp. 147-152.	11/0.4	2019
Published research work	Maliwan Y, Chiencharoentanakij T, Sornanunkul N, **Tantidham T**. Rehabilitation Exercise Prescription on Android System. In: the 2019 4th International Conference on Information Technology (InCIT); 2019 Oct 24-25; Bangkok, Thailand; 2019. pp. 120-125.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

14. Name Lecturer Dr. Akara Supratak

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computing Research	Imperial College London, United Kingdom	2018
M.Sc.	Computing	Imperial College London, United Kingdom	2013
B.Sc.	Information and Communication Technology	Mahidol University	2011

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Biosignal Analysis, Computer Vision, Deep Learning, Machine Learning

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Ruenin P, Choetkiertikul M, **Supratak A**, Tuarob S. Automatic recommendation of developers for open-source software tasks using knowledge graph embedding. Science, Engineering and Health Studies Dec 2022;16:22020006.	13/0.8	2022
Published research work	Sajjacholapunt P, **Supratak A**, Tuarob S. Automatic measurement of acidity from roasted coffee beans images using efficient deep learning. Journal of Food Process Engineering Aug 2022. https://doi.org/10.1111/jfpe.14147.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Yin MS, Haddawy P, Ziemer T, Wetjen F, **Supratak A**, Chiamsakul K, Siritanakorn W, Chantanalertvilai T, Sriwichai P, Sa-ngamuang C. A deep learning-based pipeline for mosquito detection and classification from wingbeat sounds. Multimedia Tools and Applications Jun 2022. https://doi.org/10.1007/s11042-022-13367-0.	12/1.0	2022
Published research work	Kaewtapee C, Thepparak S, Rakangthong C, Bunchasak C, **Supratak A**. Objective scoring of footpad dermatitis in broiler chickens using image segmentation and a deep learning approach: camera-based scoring system. British Poultry Science Aug 2022;63(4):427-433.	12/1.0	2022
Published research work	Saramas K, Kraisangka J, **Supratak A**, Noraset T, Yimwadsana B, Kusakunniran W. Human detection and social distancing measurement in a video. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-4.	11/0.4	2022
Published research work	Yin MS, Haddawy P, Nirandmongkol B, Kongthaworn T, Chaisumritchoke C, **Supratak A**, Sa-Ngamuang C, Sriwichai P. A lightweight deep learning approach to mosquito classification from wingbeat sounds. In: the ACM International Conference on Information Technology for Social Good (GoodIT); 2021 Sep 9-11; Roma, Italy; 2021. pp. 37–42.	11/0.4	2021
Published research work	Kaewtapee C, **Supratak A**. Yolk color measurement using image processing and deep learning. IOP Conference Series: Earth and Environmental Science Mar 2021;686(1):012054.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Yin M, Haddawy P, Hosp B, Sa-ngasoongsong P, Tanprathumwong T, Sayo M, Yangyuenpradorn S, **Supratak A**. A study of expert/novice perception in arthroscopic shoulder surgery. In: the 4th International Conference on Medical and Health Informatics (ICMHI); 2020 Aug 14-16; Kamakura City, Japan; 2020. pp. 71-77.	11/0.4	2020
Published research work	**Supratak A**, Guo Y. TinySleepNet: an efficient deep learning model for sleep stage scoring based on raw single-channel EEG. In: the 2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC); 2020 Jul 20-24; Montreal, QC, Canada; 2020. pp. 641-644.	11/0.4	2020
Published research work	Noiplab T, Sakdanupab M, **Supratak A**, Intharah T. Construction of a mobile video retrieval dataset in the cloud: dos, don'ts, and the analysis. In: the 2019 19th International Symposium on Communications and Information Technologies (ISCIT); 2019 Sep 25-27; Ho Chi Minh City, Vietnam; 2019. pp. 470-475.	11/0.4	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

15. Name Lecturer Dr. Assadarat Khurat

Education

Degree	Degree Name	Institute	Year of Graduation
Dr.-Ing.	Computer Security	Hamburg University of Technology, Germany	2014
M.Sc.	Information and Communication Systems	Hamburg University of Technology, Germany	2005
B.Eng. (2nd Class Honor)	Telecommunication Engineering	King Mongkut's Institute of Technology Ladkrabang	2001

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Privacy Policy Languages, Access Control, Ontology, Intrusion Detection System, Risk Analysis

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Khurat A**, Sangkhachantharanan P. An automatic networking device auditing tool based on CIS benchmark. In: the 2021 18th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2021 May 19-22; Chiang Mai, Thailand; 2021. pp. 409-412.	11/0.4	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Noiprasong P, **Khurat A**. An IDS rule redundancy verification. In: the 2020 17th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2020 Nov 4-6; Bangkok, Thailand; 2020. pp. 110-115.	11/0.4	2020
Published research work	Pojsomphong N, Visoottiviseth V, Sawangphol W, **Khurat A**, Falls D. Investigation of drone vulnerability and its countermeasure. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Malaysia; 2020. pp. 251-255.	11/0.4	2020
Published research work	Puakalong C, Takano R, Visoottiviseth V, **Khurat A**, Sawangphol W. A network bandwidth limitation with the DEMU network emulator. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Malaysia; 2020. pp. 151-154.	11/0.4	2020
Published research work	Reantongcome V, Visoottiviseth V, Sawangphol W, **Khurat A**, Falls D. Securing and trustworthy blockchain-based multi-tenant cloud computing. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Penang, Malaysia. pp. 256-261.	11/0.4	2020
Published research work	**Khurat A**, Siriphun N, Saingthong J, Sriwiphasathit J. An open-source based automatic car detection system using IoT. In: the 2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2019 Jul 10-12; Chonburi, Thailand; 2019. pp. 283-288.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Khurat A**, Sawangphol W. An ontology for SNORT rule. In: the 2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2019 Jul 10-12; Chonburi, Thailand; 2019. pp. 49-55.	11/0.4	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

16. Name Lecturer Dr. Chaiyong Ragkhitwetsagul

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University College London, United Kingdom	2018
M.S.	Information Technology	Carnegie Mellon University, USA	2008
B.Eng.	Computer Engineering	Kasetsart University	2005

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Software Engineering: Code search, Clone detection, Mining of software repository

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kangwanwisit P, Choetkiertikul M, **Ragkhitwetsagul C**, Sunetnanta T, Maipradit R, Hata H, Matsumoto K. A component recommendation model for issues in software projects. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-6.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Ragkhitwetsagul C**, Paixao M. Recommending code improvements based on stack overflow answer edits. In: the 19th International Conference on Mining Software Repositories (MSR); 2022 May 23-24; Pittsburgh, USA; 2022. https://doi.org/10.1145/1122445.1122456.	11/0.4	2022
Published research work	Robles G, Kula RG, **Ragkhitwetsagul C**, Sakulniwat T, Matsumoto K, Gonzalez-Barahona JM. pycefr: python competency level through code analysis. In: the 2022 IEEE/ACM 30th International Conference on Program Comprehension (ICPC); 2022 May 16-17; Pittsburgh, USA; 2022. pp. 173-177.	11/0.4	2022
Published research work	**Ragkhitwetsagul C**, Krinke J, Choetkiertikul M, Sunetnanta T, Sarro F. Identifying software engineering challenges in software SMEs: a case study in Thailand. In: the 2022 IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER); 2022 Mar 15-18; Honolulu, USA; 2022. pp. 218-222.	11/0.4	2022
Published research work	Phaithoon S, Wongnil S, Pussawong P, Choetkiertikul M, **Ragkhitwetsagul C**, Sunetnanta T, Maipradit R, Hata H, Matsumoto K. FixMe: a GitHub bot for detecting and monitoring on-hold self-admitted technical debt. In: the 2021 36th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2021 Nov 15-19; Melbourne, Australia; 2021. pp. 1257-1261.	11/0.4	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	White R, Krinke J, Barr ET, Sarro F, **Ragkhitwetsagul C**. Artefact relation graphs for unit test reuse recommendation. In: the 2021 14th IEEE Conference on Software Testing, Verification and Validation (ICST); 2021 Apr 12-16; Porto de Galinhas, Brazil; 2021. pp. 137-147.	11/0.4	2021
Published research work	Choetkiertikul M, Dam HK, Tran T, Pham T, **Ragkhitwetsagul C**, Ghose A. Automatically recommending components for issue reports using deep learning. Empirical Software Engineering Feb 2021;26(14):1-39.	12/1.0	2021
Published research work	Han D, **Ragkhitwetsagul C**, Krinke J, Paixao M, Rosa G. Does code review really remove coding convention violations? In: the 2020 IEEE 20th International Working Conference on Source Code Analysis and Manipulation (SCAM); 2020 Sep 28 – Oct 2; Adelaide, SA, Australia; 2020. pp. 43-53.	11/0.4	2020
Published research work	Phan-udom P, Wattanakul N, Sakulniwat T, **Ragkhitwetsagul C**, Sunetnanta T, Choetkiertikul M, Kula R. Teddy: automatic recommendation of pythonic idiom usage for pull-based software projects. In: the 2020 IEEE International Conference on Software Maintenance and Evolution (ICSME); 2020 Sep 28 – Oct 2; Adelaide, SA, Australia; 2020. pp. 806-809.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Khanan C, Luewichana W, Pruktharathikoon K, Jiarpakdee J, Tantithamthavorn C, Choetkiertikul M, **Ragkhitwetsagul C**, Sunetnanta T. JITBot: an explainable just-in-time defect prediction bot. In: the 2020 35th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2020 Sep 21-25; Melbourne, VIC, Australia; 2020. pp. 1336-1339.	11/0.4	2020
Published research work	Bunkerd T, Wang D, Kula R, **Ragkhitwetsagul C**, Choetkiertikul M, Sunetnanta T, Ishio T, Matsumoto K. How do contributors impact code naturalness? an exploratory study of 50 python projects. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 7-75.	11/0.4	2019
Published research work	Arammongkolvichai V, Koschke R, **Ragkhitwetsagul C**, Choetkiertikul M, Sunetnanta T. Improving clone detection precision using machine learning techniques. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 31-315.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Assavakamhaenghan N, Choetkiertikul M, Tuarob S, Kula R, Hata H, **Ragkhitwetsagul C**, Sunetnanta T, Matsumoto K. Software team member configurations: a study of team effectiveness in moodle. In: 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 19-195.	11/0.4	2019
Published research work	Sakulniwat T, Kula R, **Ragkhitwetsagul C**, Choetkiertikul M, Sunetnanta T, Wang D, Ishio T, Matsumoto K. Visualizing the usage of pythonic idioms over time: a case study of the with open Idiom. In: the 2019 10th International Workshop on Empirical Software Engineering in Practice (IWESEP); 2019 Dec 13-14; Tokyo, Japan; 2019. pp. 43-435.	11/0.4	2019
Published research work	Wattanakriengkrai S, Srisermphoak N, Sintoplertchaikul S, Choetkiertikul M, **Ragkhitwetsagul C**, Sunetnanta T, Hata H, Matsumoto K. Automatic classifying self-admitted technical debt using n-gram IDF. In: the 2019 26th Asia-Pacific Software Engineering Conference (APSEC); 2019 Dec 2-5; Putrajaya, Malaysia; 2019. pp. 316-322.	11/0.4	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

17. Name Lecturer Dr. Dolvara Guna-Tilaka

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Washington University in Saint Louis, USA	2019
M.Sc.	Computer Science	Washington University in Saint Louis, USA	2013
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2010

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Wireless Networks, Internet of Things, Cyber-Physical Systems

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Gunatilaka D,** Sanbundit P, Puengchim S, Boontham C. AiRadar: a sensing platform for indoor air quality monitoring. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-6.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Gunatilaka D**. An IoT-enabled acoustic sensing platform for noise pollution monitoring. In: the 2021 IEEE 12th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON); 2021 Dec 1-4; New York, NY, USA; 2021. pp. 0383-0389.	11/0.4	2021
Published research work	**Gunatilaka D**, Lu C. REACT: an agile control plane for industrial wireless sensor-actuator networks. In: the 2020 IEEE/ACM Fifth International Conference on Internet-of-Things Design and Implementation (IoTDI); 2020 Apr 21-24; Sydney, NSW, Australia; 2020. pp. 53-65.	11/0.4	2020

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

18. Name Lecturer Dr. Ittipon Rassameeroj

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of California, Davis, USA	2019
M.Sc.	Computer Science	Mahidol University	2008
B.Sc.	Computer Science	Mahidol University	2005

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Cyber security, Big data, data analytics and engineering; Internet architecture, protocol, and measurement; Social computing, network theory/science

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Rassameeroj I**, Jomkhamsri P, Thaithaweewattana N. Student request system prototype using low-code development platform. In: the 2022 International Conference on Algorithms, Data Mining, and Information Technology (ADMIT); 2022 Sep 23-25; Xi'an, China; 2022. pp. 190-194.	11/0.4	2022
Published research work	**Rassameeroj I**, Wu SF. Effect of social algorithms on media source publishers in social media ecosystems. Communications in Computer and Information Science May 2021;1410:362–375.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Rassameeroj I**, Wu SF. How do fake news propagators exploit social algorithms to promote their contents? In: the 17th International Conference on Web Based Communities and Social Media; 2020 Jul 21-23; Zagreb, Croatia; 2020. pp. 157-164.	11/0.4	2020

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

19. Name Lecturer Dr. Jidapa Kraisangka

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Information Science	University of Pittsburgh, USA	2019
M.S.	Information Science	University of Pittsburgh, USA	2013
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2010

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Probabilistic and Decision-theoretic Methods in Decision Support Systems, Clinical Decision Support System, Data Visualization

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Phankamolsil Y, Rittima A, Teerapunyapong P, Surakit K, Tabucanon A, Sawangphol W, **Kraisangka J**, Talaluxmana Y, Vudhivanich V. Comparative assessment of groundwater recharge estimation using physical-based models and empirical methods in Upper Greater Mae Klong Irrigation Project, Thailand. Agriculture and Natural Resources Sep 2022;56(4):737-750.	13/0.8	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Saramas K, **Kraisangka J**, Supratak A, Noraset T, Yimwadsana B, Kusakunniran W. Human detection and social distancing measurement in a video. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; pp. 1-4.	11/0.4	2022
Published research work	**Kraisangka J**, Rittima A, Sawangphol W, Phankamolsil Y, Tabucanon AS, Talaluxmana Y, Vudhivanich V. Application of machine learning in daily reservoir inflow prediction of the Bhumibol Dam, Thailand. In: the 2022 19th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2022 May 24-27; Prachuap Khiri Khan, Thailand; 2022. pp. 1-4.	11/0.4	2022
Published research work	Rantasewee S, Teerapunyapong P, Rittima A, Surakit K, Phankamolsil Y, Tabucanon A, Sawangphol W, **Kraisangka J**, Talaluxmana Y. Impacts of the 2011 Thailand flood on groundwater recharge potential in flood retention area in the Middle Reach of Tha Chin River. Engineering Access Apr 2022;8(2):186-191.	9/0.6	2022
Published research work	Phankamolsil Y, Rittima A, Rantasewee S, Talaluxmana Y, Surakit K, Tabucanon AS, Sawangphol W, **Kraisangka J**. Analysis of potential site for managed aquifer recharge scheme in the upper greater Mae Klong Irrigation Project, Thailand. Applied Environmental Research Mar 2022;44(1):80-94.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Tabucanon AS, Rittima A, Raveephinit D, Phankamolsil Y, Sawangphol W, **Kraisangka J**, Talaluxmana Y, Vudhivanich V, Xue W. Impact of climate change on reservoir reliability: A case of Bhumibol Dam in Ping River Basin, Thailand. Environment and Natural Resources Journal May 2021;19(4):266-281.	12/1.0	2021
Published research work	Kyaw KM, Rittima A, Phankamolsil Y, Tabucanon AS, Sawangphol W, **Kraisangka J**, Talaluxmana Y, Vudhivanich V. Tracing crop water demand in the lower ping river basin, Thailand using cloud–based irrisat application. In: the 22nd Congress of International Association for Hydro Environment Engineering and Research (IAHR) and Asia Pacific Division (APD); 2020 Sep 14-17; Sapporo, Japan; 2020. pp. 1-8.	11/0.4	2020
Published research work	Kanwar MK, Gomberg-Maitland M, Hoeper M, Pausch C, Pittrow D, Strange G, Anderson J, Zhao C, Scott JV, Druzdzel M, **Kraisangka J**, Lohmueller L, Antaki J, Benza RL. Risk stratification in pulmonary arterial hypertension using Bayesian analysis. European Respiratory Journal Aug 2020; 56(2):2000008.	12/1.0	2020
Published research work	Kanwar M, Raina A, Lohmueller L, **Kraisangka J**, Benza R. The use of risk assessment tools and prognostic scores in managing patients with pulmonary arterial hypertension. Current Hypertension Reports Apr 2019; 21(6):45.	12/1.0	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

20. Name Lecturer Dr. Pattanasak Mongkolwat

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Illinois Institute of Technology, USA	1996
M.Sc.	Computer Science	McNeese State University, USA	1991
B.Sc.	Computer Science	University of the Thai Chamber of Commerce	1988

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Medical and imaging Informatics, Software Engineering, Object-Oriented Programming

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Yang A, Beheshti M, Hudson TE, Vedanthan R, Riewpaiboon W, **Mongkolwat P**, Feng C, Rizzo JR. Unav: an infrastructure-independent vision-based navigation system for people with blindness and low vision. Sensors Nov 2022;22(22):8894. doi: 10.3390/s22228894.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Thaipisutikul T, Shih TK, Enkhbat A, Aditya W, Shih H, **Mongkolwat P**. Beyond fear go viral: a machine learning study on infodemic detection during covid-19 pandemic. In: the 2022 14th International Conference on Knowledge and Smart Technology (KST); 2022 Jan 26-29; Chonburi, Thailand; 2022. pp. 1-6.	11/0.4	2022
Published research work	Bai X, Wang H, Ma L, Xu Y, Gan J, Fan Z, Yang F, Ma K, Yang J, Bai S, Shu C, Zou X, Huang R, Zhang C, Liu X, Tu D, Xu C, Zhang W, Wang X, Chen A, Zeng Y, Yang D, Wang MW, Holalkere N, Halin NJ, Kamel IR, Wu J, Peng X, Wang X, Shao J, **Mongkolwat P**, Zhang J, Liu W, Roberts M, Teng Z, Beer L, Sanchez LE, Sala E, Rubin DL, Weller A, Lasenby J, Zheng C, Wang J, Li Z, Schönlieb C, Xia T. Advancing COVID-19 diagnosis with privacy-preserving collaboration in artificial intelligence. Nature Machine Intelligence Dec 2021;3:1081–1089.	12/1.0	2021
Published research work	Hu C, Kuo L, Chen Y, Tantidham T, **Mongkolwat P**. QoS-prioritised media delivery with adaptive data throughput in IoT-based home networks. International Journal of Web and Grid Services Mar 2021;17(1):60-80.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Rizzo JR, Beheshti M, Hudson TE, **Mongkolwat P**, Riewpaiboon W, Seiple W, Ogedegbe OG, Vedanthan R. The global crisis of visual impairment: an emerging global health priority requiring urgent action. Disability and Rehabilitation: Assistive Technology Dec 2020; doi: 10.1080/17483107.2020.1854876.	12/1.0	2020
Published research work	Rizzo JR, Feng C, Riewpaiboo W, **Mongkolwat P**. A low-vision navigation platform for economies in transition countries. In: the 2020 IEEE World Congress on Services (SERVICES); 2020 Oct 18.23; Beijing, China; 2020. pp. 1-3.	11/0.4	2020
Published research work	Bamrung C, Kamintra W, Hui L, Hu C, Tantidham T, **Mongkolwat P**. Self-organized unstructured network architecture for device and service deployment in smart home. In: the 2020 IEEE 2nd Global Conference on Life Sciences and Technologies (LifeTech); 2020 Mar 10-12; Kyoto, Japan; 2020. pp. 288-289.	11/0.4	2020
Published research work	Hu CL, Bamrung C, Kamintra W, Ruengittinun S, **Mongkolwat P**, Hui L, Lo SH. Using camera array to detect elderly falling and distribute alerting media for smart home care. In: the 2019 8th International Conference on Innovation, Communication and Engineering (ICICE); 2019 Oct 25-30; Zhengzhou, China; 2019. pp. 98-101.	11/0.4	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Konngern S, Kaibutr N, Konru N, Tantidham T, Hu C, Thaipisutikul T, Timothy K. Shih TK, **Mongkolwat P**. Assistive robot with action planner and schedule for family. In: the 2019 Twelfth International Conference on Ubi-Media Computing (Ubi-Media); 2019 Aug 5-8; Bali, Indonesia; 2019. pp. 171-176.	11/0.4	2019
Published research work	Thaipisutikul T, Chen YC, Hui L, Chen SC, **Mongkolwat P**, Shih TK, The matter of deep reinforcement learning towards practical AI applications. In: the 2019 Twelfth International Conference on Ubi-Media Computing (Ubi-Media); 2019 Aug 5-8; Bali, Indonesia; 2019. pp. 24-29.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

21. Name Lecturer Dr. Petch Sajjacholapunt

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	The University of Warwick, United Kingdom	2016
M.Phil.	Computer Science with IT Management	The University of Manchester, United Kingdom	2012
M.Sc.	Computer Science	The University of Manchester, United Kingdom	2010
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2007

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Computer Vision, Computer Graphics

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Sajjacholapunt P**, Supratak A, Tuarob S. Automatic measurement of acidity from roasted coffee beans images using efficient deep learning. Journal of Food Process Engineering Aug 2022. https://doi.org/10.1111/jfpe.14147.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kitsathan N, **Sajjacholapunt P**, Praiwattana P. ARSci: the framework for building augmented reality in scientific learning. In: the 2021 5th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT); 2021 Oct 21-23; Ankara, Turkey; 2021. pp. 246-251.	11/0.4	2021
Published research work	**Sajjacholapunt P**, Permpholphattana S, Sariyarsheeva K, Phanphila P, Jatuviriyapornchai W. Pattana: An online course learning outcome assessment application. In: the 2020 5th International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 167-172.	11/0.4	2020
Published research work	Pongpaichet S, T. Unprasert T, Tuarob S, **Sajjacholapunt P**. SGD-Rec: a matrix decomposition based model for personalized movie recommendation. In: the 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2020 Jun 24-27; Phuket, Thailand; 2020. pp. 588-591.	11/0.4	2020
Published research work	Pipatnoraseth T, Phongsuphap S, Tanawongsuwan R, **Sajjacholapunt P**, Shimizu I. Breast microcalcification visualization using pseudo-color image processing. In: the 2019 12th Biomedical Engineering International Conference (BMEiCON); 2019 Nov 19-22; Ubon Ratchathani, Thailand; 2019. pp. 1-5.	11/0.4	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

22. Name Lecturer Dr. Pisit Praiwattana

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Liverpool John Moores University, United Kingdom	2018
M.S.	Computer Science	University of Southern California, USA	2012
B.Sc.	Information and Communication Technology	Mahidol University	2009

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Computer Graphics, Multimedia Systems, Crisis Scenario Simulation, Multi-Agents, Serious-Game, Game Development

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Sawangphol W, Panphattarasap P, **Praiwattana P**, Kraisangka J, Noraset T, Prommin D. Foot arch classification via ML-based image classification. Computer-Aided Design and Applications 2023;20(4):200-213.	12/1.0	2023

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kitsathan N, Sajjacholapunt P, **Praiwattana P**. ARSci: the framework for building augmented reality in scientific learning. In: the 2021 5th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT); 2021 Oct 21-23; Ankara, Turkey; 2021. pp. 246-251.	11/0.4	2021
Published research work	Sawangphol W, Noraset T, Panphattarasap P, **Praiwattana P**, Sutthiratpanya P, Talanon N, Tungsupanich K, Prommin D. Foot arch posture classification using image processing. Journal of Information Science and Technology (JIST). Jun 2021;11(1): 80-87.	9/0.6	2021

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

23. Name Lecturer Dr. Siripen Pongpaichet

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of California, Irvine, USA	2016
M.S.	Computer Science	University of California, Irvine, USA	2011
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2008

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Situation Recognition, Spatial-Temporal Data Analytics, Event Streams Processing Engines, Micro-Reporting Systems, Database Design and Models, Personal to Public Health Decision Systems

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Pongpalchet S**, Nirunwiroj K, Tuarob S. Automatic assessment and identification of leadership in college students. IEEE Access Jul 2022;10:79041-79060.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Pongpalchet S**, Thabsuwan C, Boonthanom K. The spatio-temporal distribution of residential real estate price monitoring system. In: the 2021 13th International Conference on Knowledge and Smart Technology (KST); 2021 Jan 21-24; Chonburi, Thailand; 2021. pp.159-164.	11/0.4	2021
Published research work	Thaipisutikul T, Tuarob S, **Pongpalchet S**, Amornvatcharapong A, K. Shih T. Automated classification of criminal and violent activities in Thailand from online news articles. In: the 2021 13th International Conference on Knowledge and Smart Technology (KST); 2021 Jan 21-24; Chonburi, Thailand; 2021. pp.170-175.	11/0.4	2021
Published research work	**Pongpaichet S**, T. Unprasert T, Tuarob S, Sajjacholapunt P. SGD-Rec: a matrix decomposition based model for personalized movie recommendation. In: the 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2020 Jun 24-27; Phuket, Thailand; 2020. pp. 588-591.	11/0.4	2020
Published research work	**Pongpaichet S**, Jankapor S, Janchai S, Tongsanit T. Early detection at-risk students using machine learning. In: the 2020 International Conference on Information and Communication Technology Convergence (ICTC); 2020 Oct 21-23; Jeju, South Korea; 2020. pp. 283-287.	11/0.4	2020

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

24. Name Lecturer Dr. Songpon Teerakanok

Education

Degree	Degree Name	Institute	Year of Graduation
D.Eng.	Information Science and Engineering	Ritsumeikan University, Japan	2019
M.Eng.	Information Science and Engineering	Ritsumeikan University, Japan	2016
B.Eng.	Computer Engineering	Prince of Songkla Unversity	2013

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Cybersecurity, Digital Forensics

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Min NM, **Visoottiviseth V**, Teerakanok S, Yamai N. OWASP IoT top 10 based attack dataset for machine learning. In: the 2022 24th International Conference on Advanced Communication Technology (ICACT); 2022 Feb 13-16; Pyeongchang, Korea; 2022. pp. 317-322.	11/0.4	2022
Published research work	**Teerakanok S**, Uehara T, Inomata A. A secure cloud-centric IoT framework for smart device registration. Journal of Information Processing (JIP) May 2021;29: 381-391.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Teerakanok S**, Uehara T, Inomata A. Migrating to zero trust architecture: reviews and challenges. Security and Communication Networks May 2021;9947347:1-10.	12/1.0	2021
Published research work	Yamakawa D, Okimoto T, **Teerakanok S**, Uehara T, Inomata A. Enhancing digital certificate usability in long lifespan IoT devices by utilizing private CA. Security and Communication Networks Feb 2021;6610863):1-14.	12/1.0	2021
Published research work	Nguyen HN, **Teerakanok S**, Inomata A, Uehara T. The comparison of word embedding techniques in RNNs for vulnerability detection. In Paolo Mori, Gabriele Lenzini, Steven Furnell, editors. Proceedings of the 7th International Conference on Information Systems Security and Privacy (ICISSP); 2021 Feb 11-13; Online Streaming; pp. 109-120.	11/0.4	2021
Published research work	Nguyen HV, **Teerakanok S**, Inomata A, Uehara T. The proposal of double agent architecture using actor-critic algorithm for penetration testing. In Paolo Mori, Gabriele Lenzini, Steven Furnell, editors. Proceedings of the 7th International Conference on Information Systems Security and Privacy (ICISSP); 2021 Feb 11-13; Online Streaming. pp. 440-449.	11/0.4	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kosakatani S, Uehara T, **Teerakanok S**. Japan's act on wiretapping for criminal investigation: how the system is implemented and how it should be. In: the 2020 15th International Conference for Internet Technology and Secured Transactions (ICITST); 2020 Dec 8-10; London, United Kingdom. pp. 1-6.	11/0.4	2020
Published research work	**Teerakanok S**, Yasuki H, Uehara T. A practical solution against business email compromise (BEC) attack using invoice checksum. In: the 2020 IEEE 20th International Conference on Software Quality, Reliability and Security Companion (QRS-C); 2020 Dec 11-14; Macau, China. pp. 160-167.	11/0.4	2020

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

25. Name Lecturer Dr. Thanapon Noraset

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Northwestern University, USA	2018
M.S.	Computer Science	Northwestern University, USA	2018
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2010

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Natural Language Processing, Biomedical Image Analysis, Deep Learning, Machine Learning

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Noraset T**, Chatrinan K, Tawichsri T, Thaipisutikul T, Tuarob S. Language-agnostic deep learning framework for automatic monitoring of population-level mental health from social networks. J Biomed Inform Jul 2022;133:104145.	12/1.0	2022
Published research work	Saramas K, Kraisangka J, **Supratak A**, Noraset T, Yimwadsana B, Kusakunniran W. Human detection and social distancing measurement in a video. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-4.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Yodrabum N, Rudeejaroonrung K, Chaikangwan I, Prompattanapakdee J, **Noraset T**. Precision of low-cost augmented reality in prefabricated cutting guide for fibular free flap surgery. J Craniofac Surg May 2022;33(3):916-919.	12/1.0	2022
Published research work	Pornprasit C, Liu X, Kiattipadungkul P, Kertkeidkachorn N, Kim K, **Noraset T**, Hassan S, Tuarob S. Enhancing citation recommendation using citation network embedding. Scientometrics Jan 2022;127:233–264.	12/1.0	2022
Published research work	Tuarob S, Wettayakorn P, Phetchai P, Traivijitkhun S, Lim S, **Noraset T**, Thaipisutikul T. DAViS: a unified solution for data collection, analyzation, and visualization in real-time stock market prediction. Financial Innovation Jul 2021;7(1):1-32.	12/1.0	2021
Published research work	Sawangphol W, **Noraset T**, Panphattarasap P, Praiwattana P, Sutthiratpanya P, Talanon N, Tungsupanich K, Prommin D. Foot arch posture classification using image processing. Journal of Information Science and Technology (JIST) Jun 2021;11(1):75-82.	12/1.0	2021
Published research work	**Noraset T**, Lowphansirikul L, Tuarob S. WabiQA: a wikipedia-based Thai question-answering system. Information Processing & Management Jan 2021;58(1): 102431.	12/1.0	2021
Published research work	Safder I, Hassan S-U, Visvizi A, **Noraset T**, Nawaz R, Tuarob S. Deep learning-based extraction of algorithmic metadata in full-text scholarly documents. Information Processing and Management Nov 2020;57(6):102269.	12/1.0	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Pornprasit C, Liu X, Kertkeidkachorn N, Kim K, **Noraset T**, Tuarob S. ConvCN: a CNN based citation network embedding algorithm towards citation recommendation. In: the ACM/IEEE Joint Conference on Digital Libraries (JCDL); 2020 Aug 1-5; Wuhan, Hubei, P. R. China; 2020. pp. 433–436.	11/0.4	2020
Published research work	Sangtunchai P, Kim KS, Kim T, **Noraset T**, Tuarob S. Intelligent distributed customer anticipation approach for taxi routing optimization. In: the 2020 12th International Conference on Knowledge and Smart Technology (KST); 2020 Jan 29 – Feb 1; Pattaya, Thailand; 2020. pp. 149-154.	11/0.4	2020

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

26. Name Lecturer Dr. Tipajin Thaipisutikul

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D. (1st Class Honor)	Computer Science	National Central University, Taiwan	2021
M.Sc. (2nd Class Honor)	Information Technology	University of Sydney, Australia	2012
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2010

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Sequence Learning, Deep Learning, Applied Intelligence, Social Media Mining, Recommender System

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Thaipisutikul T**, Tatiyamaneekul P, Lin CY, Tuarob S. A deep feature-level fusion model for masked face identity recommendation system. Journal of Ambient Intelligence and Humanized Computing Sep 2022. https://doi.org/10.1007/s12652-022-04380-0.	12/1.0	2022
Published research work	Aditya W, Shih TK, **Thaipisutikul T**, Fitriajie AS, Gochoo M, Utaminingrum F, Lin CY. Novel spatio-temporal continuous sign language recognition using an attentive multi-feature network. Sensors. Aug 2022;22(17):6452. https://doi.org/10.3390/s22176452.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Lin Y, Rojanasarit A, **Thaipisutikul T**, Lung CW, Akhyar F. An improved face mask-aware recognition system based on deep learning. In: Shukla S, Gao XZ, Kureethara JV, Mishra D. (eds) Data Science and Security. Lecture Notes in Networks and Systems. Springer, Singapore; Jul 2022;462:15-29. Available from: https://doi.org/10.1007/978-981-19-2211-4_2	11/0.4	2022
Published research work	Noraset T, Chatrinan K, Tawichsri T, **Thaipisutikul T**, Tuarob S. Language-agnostic deep learning framework for automatic monitoring of population-level mental health from social networks. J Biomed Inform Jul 2022;133:104145.	12/1.0	2022
Published research work	**Thaipisutikul T**, Lin CY, Chen SC. Multivariate time series analysis on variables that influence pandemic expansion. In: the 2022 19th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2022 Jun 22-25; Bangkok, Thailand; 2022. pp. 1-6.	11/0.4	2022
Published research work	**Thaipisutikul T**. An adaptive temporal-concept drift model for sequential recommendation. ECTI Transactions on Computer and Information Technology (ECTI-CIT). Jun 2022;16(2):222-236.	12/1.0	2022
Published research work	Wang Y, Lin C, **Thaipisutikul T**, Shih TK. Single-head lifelong learning based on distilling knowledge. IEEE Access. Feb 2022;10:35469-35478.	12/1.0	2022
Published research work	**Thaipisutikul T**, Shih TK, Enkhbat A, Aditya W. Exploiting long- and short-Term preferences for deep context-aware recommendations. IEEE Transactions on Computational Social Systems. Aug 2022;9(4);1237-1248.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Thaipisutikul T**, Shih TK, Enkhbat A, Aditya W, Shih H, Mongkolwat P. Beyond fear go viral: a machine learning study on infodemic detection during covid-19 pandemic. In: the 2022 14th International Conference on Knowledge and Smart Technology (KST); 2022 Jan 26-29; Chonburi, Thailand; 2022. pp. 1-6.	11/0.4	2022
Published research work	Banditsingha P, **Thaipisutikul T**, Shih TK Lin C, A decision machine learning support system for human skin disease classifier. In: the 2022 Joint International Conference on Digital Arts, Media and Technology with ECTI Northern Section Conference on Electrical, Electronics, Computer and Telecommunications Engineering (ECTI DAMT & NCON); 2022 Jan 26-28; Chiang Rai, Thailand; 2022. pp. 200-204.	11/0.4	2022
Published research work	Jamaluddin I, Thaipisutikul T, Chen YN, Chuang CH, Hu CL. MDPrePost-Net: A Spatial-Spectral-Temporal Fully Convolutional Network for Mapping of Mangrove Degradation Affected by Hurricane Irma 2017 Using Sentinel-2 Data. Remote Sensing. Dec 2021;13(24):5402. Available from: https://doi.org/10.3390/rs13245042	12/1.0	2021
Published research work	Said A, Janjua MU, Hassan S, Muzammal Z, Saleem T, **Thaipisutikul T**, Tuarob S, Nawaz R. Detailed analysis of Ethereum network on transaction behavior, community structure and link prediction. PeerJ Computer Science. Dec 2021;7:e815. Available from: https://doi.org/10.7717/peerj-cs.815	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Tuarob S, Wettayakorn P, Phetchai P, Traivijitkhun S, Lim S, Noraset T, **Thaipisutikul T**. DAViS: a unified solution for data collection, analyzation, and visualization in real-time stock market prediction. Financial Innovation. Jul 2021;7(1):1-32.	12/1.0	2021
Published research work	**Thaipisutikul T**, Chen CY. A context-aware poi recommendation. In: the TENCON 2021 - 2021 IEEE Region 10 Conference (TENCON); 2021 Dec 7-10; Auckland, New Zealand; 2021. pp. 357-362.	11/0.4	2021
Published research work	**Thaipisutikul T**, Prompol K, Lin CY, Chang WT, Muchtar K. A door detection system for convenience stores in Taiwan. In: the 2021 International Conference on Computer System, Information Technology, and Electrical Engineering (COSITE); 2021 Oct 20-21; Banda Aceh, Indonesia; 2021. pp. 24-29.	11/0.4	2021
Published research work	**Thaipisutikul T**, Tuarob S, Pongpalchet S, Amornvatcharapong A, K. Shih T. Automated classification of criminal and violent activities in Thailand from online news articles. In: the 2021 13th International Conference on Knowledge and Smart Technology (KST); 2021 Jan 21-24; Chonburi, Thailand; 2021. pp.170-175.	11/0.4	2021

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

27. Name Lecturer Dr. Thitivatr Patanasakpinyo

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Iowa State University, USA	2017
M.S.	Computer Science	Iowa State University, USA	2013
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2007

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Human Computer Interaction (Design for Different Spatial Visualization), Model Checking, Computational Theory (Computability and Reducibility), Database

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**PatanasakPinyo T**, Chen N, Singsornsri N, Kanchanaporn N. Verifying and assessing a performance of an automatic vacuum robot under different room conditions. EPiC Series in Computing. Mar 2022;82:11-20.	12/1.0	2022
Published research work	**Patanasakpinyo T**. Exploiting a real-time non-geolocation data to classify a road type with different altitudes for strengthening accuracy in navigation. International Journal of Computers and Their Applications (IJCA). Mar 2021;28(1):55-64.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Patanasakpinyo T**, Miller L. UI error reduction for high spatial visualization users when using adaptive software to verify addresses. In: the 35th International Conference on Computers and Their Applications (CATA); 2020 Mar 23-25; San Francisco, California, USA; 2020. pp. 21-31.	11/0.4	2020
Published research work	**Patanasakpinyo T**. Ameliorating accuracy of a map navigation when dealing with different altitude traffics that share exact geolocation. In: the 29th International Conference on Software Engineering and Data Engineering (SEDE); 2020 Oct 19-21; Nevada, USA; 2020. pp. 95-104.	11/0.4	2020
Published research work	**Patanasakpinyo T**. Model checking approach for deadlock detection in an operating system process-resource graph using dynamic model generating and computation tree logic specification. In: the 34th International Conference on Computers and Their Applications (CATA); 2019 Mar 18-20; Honolulu; USA; 2019. pp.55-64.	11/0.4	2019
Published research work	**Patanasakpinyo T**, Batinov G, Whitney K, Suliman A, Miller L. Enhanced prediction models for predicting spatial visualization (VZ) in address verification task. In: the 34th ISCA International Conference on Computers and Their Applications (CATA); 2019 Mar 18-20; Hawaii, USA; 2019. pp. 247-256.	11/0.4	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	531	Mathematics for Computer Science	2 (2-0-4)
ITCS	532	Foundations of Computational Science	2 (2-0-4)
ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

28. Name Lecturer Dr. Wudhichart Sawangphol

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Information Technology	Monash University, Australia	2017
MIT (MIT Honours)	Software Engineering and Data Management	Monash University, Australia	2012
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2009

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Artificial Intelligence, Description Logic, Ontology, Automated Reasoning, Optimisation, Data analysis

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Sawangphol W**, Panphattarasap P, Praiwattana P, Kraisangka J, Noraset T, Prommin D. Foot arch classification via ML-based image classification. Computer-Aided Design and Applications 2023;20(4):200-213.	12/1.0	2023
Published research work	Phankamolsil Y, Rittima A, Teerapunyapong P, Surakit K, Tabucanon A, **Sawangphol W**, Kraisangka J, Talaluxmana Y, Vudhivanich V. Comparative assessment of groundwater recharge estimation using physical-based models and empirical methods in Upper Greater Mae Klong Irrigation Project, Thailand. Agriculture and Natural Resources Sep 2022;56(4):737-750.	13/0.8	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kraisangka J, Rittima A, **Sawangphol W**, Phankamolsil Y, Tabucanon AS, Talaluxmana Y, Vudhivanich V. Application of machine learning in daily reservoir inflow prediction of the Bhumibol Dam, Thailand. In: the 2022 19th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2022 May 24-27; Prachuap Khiri Khan, Thailand; 2022. pp. 1-4.	11/0.4	2022
Published research work	Rantasewee S, Teerapunyapong P, Rittima A, Surakit K, Phankamolsil Y, Tabucanon A, **Sawangphol W**, Kraisangka J, Talaluxmana Y. Impacts of the 2011 Thailand flood on groundwater recharge potential in flood retention area in the Middle Reach of Tha Chin River. Engineering Access Apr 2022;8(2):186-191.	9/0.6	2022
Published research work	Phankamolsil Y, Rittima A, Rantasewee S, Talaluxmana Y, Surakit K, Tabucanon AS, **Sawangphol W**, Kraisangka J. Analysis of potential site for managed aquifer recharge scheme in the upper greater Mae Klong Irrigation Project, Thailand. Applied Environmental Research Mar 2022;44(1):80-94.	12/1.0	2022
Published research work	**Sawangphol W**, Noraset T, Panphattarasap P, Praiwattana P, Sutthiratpanya P, Talanon N, Tungsupanich K, Prommin D. Foot arch posture classification using image processing. Journal of Information Science and Technology (JIST) Jun 2021;11(1):75-82.	12/1.0	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Tabucanon AS, Rittima A, Raveephinit D, Phankamolsil Y, **Sawangphol W**, Kraisangka J, Talaluxmana Y, Vudhivanich V, Xue W. Impact of climate change on reservoir reliability: A case of Bhumibol Dam in Ping River Basin, Thailand. Environment and Natural Resources Journal May 2021;19(4):266-281.	12/1.0	2021
Published research work	Mitrpanont J, **Sawangphol W**, Thongrattana W, Suthinuntasook S, Sillapathadapong S, Kitkhachonkunlaphat K. ICDWiz: Visualizing ICD-11 using 3D force-directed graph. Communications in Computer and Information Science Apr 2021;1371:331-334.	12/1.0	2021
Published research work	Kraisangka J, **Sawangphol W**, Rojcharoenpreeda P, Tangchadakorn C, Vechjatuporn M, Limpasitiponm C, Itthisaeng P, Boonwan S. Getting to know one's role in team through personality-based clustering. In: the 2020 17th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2020 Nov 4-6; Bangkok, Thailand; 2020. pp. 80-85.	11/0.4	2020
Published research work	Mitrpanont J, **Sawangphol W**, Sillapathadapong S, Suthinuntasook S, Thongrattana W, Haga J. MedThaiSAGE2: enhancing the decision support system using rich visualization on SAGE 2. In: the 2020 - 5th International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 128-133.	11/0.4	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kyaw KM, Rittima A, Phankamolsil Y, Tabucanon AS, **Sawangphol W**, Kraisangka J, Talaluxmana Y, Vudhivanich V. Tracing crop water demand in the lower ping river basin, Thailand using cloud–based irrisat application. In: the 22nd Congress of International Association for Hydro Environment Engineering and Research (IAHR) and Asia Pacific Division (APD); 2020 Sep 14-17; Sapporo, Japan; 2020. pp. 1-8.	11/0.4	2020
Published research work	Pojsomphong N, Visoottiviseth V, **Sawangphol W**, Khurat A, Falls D. Investigation of drone vulnerability and its countermeasure. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Malaysia; 2020. pp. 251-255.	11/0.4	2020
Published research work	Puakalong C, Takano R, Visoottiviseth V, Khurat A, **Sawangphol W**. A network bandwidth limitation with the DEMU network emulator. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Malaysia; 2020. pp. 151-154.	11/0.4	2020
Published research work	Reantongcome V, Visoottiviseth V, **Sawangphol W**, Khurat A, Falls D. Securing and trustworthy blockchain-based multi-tenant cloud computing. In: the 2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE); 2020 Apr 18-19; Penang, Malaysia. pp. 256-261.	11/0.4	2020
Published research work	Kang Y, Krishnaswamy S, **Sawangphol W**, Gao L, Li Y. Understanding and improving ontology reasoning efficiency through learning and ranking. Information Systems Jan 2020;87:101412.	12/1.0	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Taveekarn W, Yimudom C, Sukkanta S, Lynden S, **Sawangphol W**, Tuarob S. DATA++: an automated tool for intelligent data augmentation using Wikidata. In: the 2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE); 2019 Jul 10-12; Chonburi, Thailand; 2019. pp. 91-96.	11/0.4	2019

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	799	Dissertation	48 (0-144-0)
ITCS	898	Dissertation	48 (0-144-0)
ITCS	899	Dissertation	72 (0-216-0)

Full time instructors

1. Name Assistant Professor Dr. Ananta Srisuphab

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Mahidol University	2009
M.Sc.	Computer Science	Mahidol University	2002
B.Sc.	Computer Science	Mahidol University	1991

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Computational Intelligence, Connectionist Models and Convolution Networks, AI and Machine Learning, Image and Signal Processing, Embedded Systems, CS and Engineering Education

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Srisuphab A**, Kaakkurivaara N, Silapachote P, Tangkit K, Meunpong P, Sunetnanta T. Illegal logging listeners using IoT networks. In: the 2020 IEEE Region 10 Conference (TENCON); 2020 Nov 16-19; Osaka, Japan; 2020. pp. 1277-1282.	11/0.4	2020

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

2. Name Assistant Professor Dr. Piyanuch Silapachote

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Massachusetts Amherst, USA	2011
M.S.	Computer Science	University of Massachusetts Amherst, USA	2006
B.S.	Computer Science	Cornell University, USA	2001

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Computer Vision, Bio-Inspired Computing, Artificial Intelligence and Machine Learning, Pattern Analysis and Recognition, Image Understanding and Signal Processing, Computer Science and Engineering Education

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Srisuphab A, Kaakkurivaara N, **Silapachote P**, Tangkit K, Meunpong P, Sunetnanta T. Illegal logging listeners using IoT networks. In: the 2020 IEEE Region 10 Conference (TENCON); 2020 Nov 16-19; Osaka, Japan; 2020. pp. 1277-1282.	11/0.4	2020

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

3. Name Assistant Professor Dr. Rawesak Tanawongsuwan

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Georgia Institute of Technology, USA	2003
M.S.	Computer Science	Georgia Institute of Technology, USA	1999
B.S. University Honors	Computer Science and Mathematics	Carnegie Mellon University, USA	1996

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Computer Vision, Computer Graphics

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Pipatnoraseth T, Phongsuphap S, **Tanawongsuwan R**, Sajjacholapunt P, Shimizu I. Breast microcalcification visualization using pseudo-color image processing. In: the 2019 12th Biomedical Engineering International Conference (BMEiCON); 2019 Nov 19-22; Ubon Ratchathani, Thailand; 2019. pp. 1-5.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

4. Name Assistant Professor Dr. Srisupa Palakvangsa Na Ayudhya

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computation	University of Manchester, United Kingdom	2006
M.S.	Advanced Computing	Imperial College of Science, Technology and Medicine, United Kingdom	2000
B.Sc. (1st Class Honor)	Computer Science	Thammasat University	1998

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Data and Knowledge Management

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kriangsakdachai S, **Palakvangsa-Na-Ayudhya S**, Kusakunniran W, Devakula-Na-Ayudhya W, Chantrasagul C, Manasboonpermpool R, Sathianvichitr K, Sangsre P, Surachatkumtonekul T. Anomaly detection in red reflex images using deep learning approaches. In: the 2022 IEEE Region 10 Conference (TENCON); 2022 Nov 1-4; Hong Kong; 2022. pp. 1-6.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Palakvangsa-Na-Ayudhya S**, Sapthamrong T, Sunthornwutthikrai K, Sakiyalak D. GlaucoVIZ: Assisting system for early glaucoma detection using mask R-CNN. In: the 2020 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON); 2020 Jun 24-27; Phuket, Thailand; 2020. pp. 364-367.	11/0.4	2020
Other types of academic work	**ศรีสุภา ปาลกะวงศ์ ณ อยุธยา**, ดารินทร์ สากิยลักษณ์, ฐานันท์ ทรัพย์ธำรงค์, กฤษดา สุนทรวุฒิไกร, เสฏนิพัทธ์ เกรียงศักดาชัย, มนัสนันท์ สิริกุลสุนทร. เกลาโควิช : ระบบช่วยเหลือการวินิจฉัยโรคต้อหินเบื้องต้นสำหรับจักษุแพทย์ทั่วไป (GlaucoVIZ : System for Assisting Glaucoma Diagnosis for Generate Ophthalmologists). รางวัลสภาวิจัยแห่งชาติ : รางวัลผลงานประดิษฐ์คิดค้น (สาขาเทคโนโลยีสารสนเทศและนิเทศศาสตร์) ประจำปีงบประมาณ 2563.	**2/0.6**	2020

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

5. Name Assistant Professor Dr. Sukanya Phongsuphap

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Intelligent System Science	Tokyo Institute of Technology, Japan	1999
M.Eng.	Intelligence Science	Tokyo Institute of Technology, Japan	1996
B.S. (1st Class Honor)	Mathematics	Chiang Mai University	1984

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Artificial Intelligence, Pattern Recognition, Biomedical Image and Signal Processing

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Utanon W, **Phongsuphap S**, Sawangarom W, Singkleewan N. Non-destructive image processing technique and rule-based classification in estimating the quality of fruit. Journal of Information Jun 2020;19(1):129-138.	11/0.4	2020
Published research work	Pipatnoraseth T, **Phongsuphap S**, Tanawongsuwan R, Sajjacholapunt P, Shimizu I. Breast microcalcification visualization using pseudo-color image processing. In: the 2019 12th Biomedical Engineering International Conference (BMEiCON); 2019 Nov 19-22; Ubon Ratchathani, Thailand; 2019. pp. 1-5.	11/0.4	2019

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)
ITCS	699	Dissertation	36 (0-108-0)
ITCS	898	Dissertation	48 (0-144-0)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

6. Name Lecturer Dr. Pawitra Liamruk

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Bath, United Kingdom	2015
M.Sc.	Software Systems Engineering	University College London, United Kingdom	2010
B.Sc. (1^{st} Class Honor)	Information and Communication Technology	Mahidol University	2008

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Cognitive Science, Human-computer Interaction and User Behavioural Model

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Jiang S. **Liamruk P**. Effects of SERP information on academic search behaviours. In: the 2020-5^{th} International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 33-38.	11/0.4	2020

Current Teaching Load

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

7. Name Lecturer Dr. Pilailuck Panphattarasap

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Bristol, United Kingdom	2019
M.Sc.	Computer Science	University of Bristol, United Kingdom	2014
B.Sc. (1st Class Honor)	Information and Communication Technology	Mahidol University	2011

Affiliation: Faculty of Information and Communication Technology, Mahidol University

Interesting Research Topics or Specialties

Image Processing, Vision-based Place Recognition and Localisation, Scene Understanding, Map and Digital Cartography, Computer Graphics

Publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Sawangphol W, **Panphattarasap P**, Praiwattana P, Kraisangka J, Noraset T, Prommin D. Foot arch classification via ML-based image classification. Computer-Aided Design and Applications 2023;20(4):200-213.	12/1.0	2023
Published research work	Sawangphol W, Noraset T, **Panphattarasap P**, Praiwattana P, Sutthiratpanya P, Talanon N, Tungsupanich K, Prommin D. Foot arch posture classification using image processing. Journal of Information Science and Technology (JIST) Jun 2021;11(1): 80-87.	9/0.6	2021

Current Teaching Load

-

Assigned Teaching Load for the Proposed Program

ITCS	671	Seminar in Computer Science I	1 (1-0-2)
ITCS	672	Seminar in Computer Science II	1 (1-0-2)
ITCS	673	Seminar in Computer Science III	1 (1-0-2)
ITCS	695	Independent Study	3 (0-6-3)

APPENDIX C

Curriculum Mapping

Appendix C
Curriculum Mapping

● Major responsibility ○ Minor responsibility

Courses	Knowledge		Skills	Ethics	Character	
	1	2	1	1	1	2
1. Required courses						
ITCS 523 Data Science Essentials	●	●	○	●	●	●
ITCS 531 Mathematics for Computer Science	●	●	○		○	
ITCS 532 Foundations of Computational Science	●		●	●	○	○
ITCS 533 Research Methodology in Computer Science	●	●	○	●	○	
ITCS 671 Seminar in Computer Science I	○	○	●	●	●	●
ITCS 672 Seminar in Computer Science II	○	○	●	●	●	●
ITCS 673 Seminar in Computer Science III	○	○	●	●	●	●
2. Elective Courses						
(1) Database						
ITCS 621 Database Design and Administration	●	●	○		●	●
ITCS 668 Cloud Database and Big Data Technology	●	●			●	●
ITCS 682 Advanced Database Systems		●	●	○	●	●
(2) Network and Security						
ITCS 551 Service-oriented and Cloud Computing	●	●	○		●	●
ITCS 554 Information Security Management	●	●		●	●	●
ITCS 638 Networks and Distributed Systems Security	●	●	○		●	●
ITCS 687 Advanced Computer Security		●	○	●	●	●
(3) Artificial Intelligence						
ITCS 517 Machine Learning	●	●	○		●	●
ITCS 518 Image Analysis and Understanding	●	●			●	●
ITCS 661 Advanced Artificial Intelligence	●	●	○	●	●	●
ITCS 665 Natural Language Processing	●	●			●	●
ITCS 667 Advanced Computer Vision	●	●			●	●
ITCS 692 Advanced topics in Artificial Intelligence		●	●	●	●	●
(4) Software Engineering						
ITCS 613 Tools and Environments for Software Development	●	●	●		●	●
ITCS 615 Empirical Software Engineering	●	●	●		●	●
ITCS 642 Software Engineering Management	●	●			●	●
ITCS 644 Software Quality Assurance	●	●	○	●	●	●
ITCS 646 Requirements Engineering	●	●			●	●
ITCS 693 Advanced Topics in Software Engineering		●	○	●	●	●

Courses	Knowledge		Skills	Ethics	Character	
	1	2	1	1	1	2
(5) Other Elective Courses						
ITCS 503 Design and Analysis of Algorithms	●	●	○		●	●
ITCS 655 Computer Graphics	●	●	○		●	●
ITCS 694 Bioinformatics	●	●		●	●	●
ITCS 695 Independent Study		●	○	○	●	●
ITCS 696 Advanced Topics in Computer Science		●	○	●	●	●
3. Thesis						
ITCS 699 Dissertation	●	●	●	●	●	●
ITCS 799 Dissertation	●	●	●	●	●	●
ITCS 898 Dissertation	●	●	●	●	●	●
ITCS 899 Dissertation	●	●	●	●	●	●

Table of Relationship between Learning Outcomes of the Program and Core Value of Mahidol University

Learning Outcomes (as stated in Section 4, item no. 2)	Core value of Mahidol University
1. Knowledge	
1.1 Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories	Mastery, Determination
1.2 Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically.	Mastery, Determination
2. Skills	
2.1 Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review.	Mastery, Determination, Originality
3. Ethics	
3.1 Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers.	Integrity
4. Character	
4.1 Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility.	Altruism, Harmony, Leadership
4.2 Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively.	Harmony, Leadership

APPENDIX D

Program Learning Outcome

Appendix D

Program Learning Outcomes

Table 1: Comparison between before and after revised objectives of the program

Objectives of the Program B.E. 2561	Revised Objectives of the Program B.E. 2566
1.2.1 To produce graduates the morals and ethics of professionals and academia.	1.2.1 Demonstrate a comprehensive understanding of the foundations of computer science, an in-depth knowledge of emerging topics in computer science, and expertise in research methodology.
1.2.2 To produce graduates with knowledge of foundational computer science, and the ability to independently study related technological advancement in computer science.	1.2.2 Research to discover new computer science knowledge or related computing problems in other fields.
1.2.5 To produce graduates who can effectively use quantitative analytical skills and information technology to solve problems.	1.2.3 Adhere to the value of ethics and code of conduct in research, academic, and computer science careers.
1.2.3 To produce graduates who can analyze and solve computing problems using the principle knowledge and skills through conducting original research and discovering new computer science knowledge.	1.2.4 Foster strong collaboration and communication skills in English.
1.2.4 To produce graduates who have good English communication skills and can work in a team environment.	

Table 2: Relationship between objective of the program and program learning outcome

Objective of the Program	Program Learning Outcome					
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
1.2.1 Demonstrate a comprehensive understanding of the foundations of computer science, an in-depth knowledge of emerging topics in computer science, and expertise in research methodology.		X	X			
1.2.2 Research to discover new computer science knowledge or related computing problems in other fields.	X					X
1.2.3 Adhere to the value of ethics and code of conduct in research, academic, and computer science careers.	X					
1.2.4 Foster strong collaboration and communication skills in English.				X	X	

PLO1	Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers.
PLO2	Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories.
PLO3	Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically.
PLO4	Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility.
PLO5	Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively.
PLO6	Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review.

Table 3: Standard domains of learning outcome and Program Learning Outcomes

Domains	Standard Learning Outcomes (TQF)	Program Learning Outcomes					
		1	2	3	4	5	6
1. Knowledge	1.1 Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories.		X				
	1.2 Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically.			X			
2 Skills	2.1 Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review.		X	X			X
3. Ethics	3.1 Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers.	X					
4. Character	4.1 Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility				X		
	4.2 Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively					X	

Table 4: Learning and Assessment Strategies for Program Learning Outcomes Evaluation

PLOs	Learning Method	Assessment
PLO1: Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers.	- Interaction-based lecture - Coaching - Experience-based case studies	- Observation - Assignments - Dissertation
PLO2: Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories	- Interaction-based lectures - Case studies - Discussion - Seminar	- Written examination - Presentation during the class
PLO3: Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically.	- Interaction-based lectures - Project-based learning - Problem-based learning - Coaching - Seminar	- Assignments - Class projects - Dissertations
PLO4: Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility	Project-based learning	- Assignments - Observation - Peer review
PLO5: Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	- Individual or group assignments - Class projects - Presentations - Group discussions - Seminar	- Presentation - Written assignment
PLO6: Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review.	- Lectures - Case studies - Discussion - Project-based learning	- Written and presentation during seminar classes - Progress report - Dissertation proposal and defense

Table 5: Relationship between Courses of the Program and Program Learning Outcomes

Code	Name	Credits	Program Learning Outcomes					
			1	2	3	4	5	6
1. Required Courses								
ITCS 523	Data Science Essentials	3 (3-0-6)	R	R	R	R	R	
ITCS 531	Mathematics for Computer Science	2 (2-0-4)		R	R			
ITCS 532	Foundations of Computational Science	2 (2-0-4)		R	R			
ITCS 533	Research Methodology in Computer Science	2 (2-0-4)	I	I		I	I	I
ITCS 671	Seminar in Computer Science I	1 (1-0-2)	I	R		I	I	I
ITCS 672	Seminar in Computer Science II	1 (1-0-2)	R	R		R	R	R
ITCS 673	Seminar in Computer Science III	1 (1-0-2)	R	R		R	R	R
2. Elective courses								
(1) Database								
ITCS 621	Database Design and Administration	3 (3-0-6)		R	R	R	R	
ITCS 668	Cloud Database and Big Data Technology	3 (3-0-6)		R	R	R	R	
ITCS 682	Advanced Database Systems	3 (3-0-6)	R	R	R	R	R	
(2) Network and Security								
ITCS 551	Service-oriented and Cloud Computing	3 (3-0-6)		R	R	R	R	
ITCS 554	Information Security Management	3 (3-0-6)	R	R	R	R	R	
ITCS 638	Networks and Distributed Systems Security	3 (3-0-6)		R	R	R	R	
ITCS 687	Advanced Computer Security	3 (3-0-6)	R	R	R	R	R	
(3) Artificial Intelligence								
ITCS 517	Machine Learning	3 (3-0-6)		R	R	R	R	
ITCS 518	Image Analysis and Understanding	3 (3-0-6)		R	R	R	R	
ITCS 661	Advanced Artificial Intelligence	3 (3-0-6)	R		R	R	R	R
ITCS 665	Natural Language Processing	3 (3-0-6)		R	R	R	R	
ITCS 667	Advanced Computer Vision	3 (3-0-6)		R	R	R	R	
ITCS 692	Advanced topics in Artificial Intelligence	3 (3-0-6)	R		R	R	R	R
(4) Software Engineering								
ITCS 613	Tools and Environments for Software Development	3 (3-0-6)		R	R	R	R	
ITCS 615	Empirical Software Engineering	3 (3-0-6)		R	R	R	R	

Code	Name	Credits	Program Learning Outcomes					
			1	2	3	4	5	6
ITCS 642	Software Engineering Management	3 (3-0-6)		R	R	R	R	
ITCS 644	Software Quality Assurancep	3 (3-0-6)	R	R	R	R	R	
ITCS 646	Requirements Engineering	3 (3-0-6)		R	R	R	R	
ITCS 693	Advanced Topics in Software Engineering	3 (3-0-6)	R		R	R	R	R
(5) Other Elective Courses								
ITCS 503	Design and Analysis of Algorithms	3 (3-0-6)		R	R	R	R	
ITCS 655	Computer Graphics	3 (3-0-6)		R	R	R	R	
ITCS 694	Bioinformatics	3 (3-0-6)	R	R	R	R	R	
ITCS 695	Independent Study	3 (0-6-3)			R/P	R	R/P	
ITCS 696	Advanced Topics in Computer Science	3 (3-0-6)	R		R	R	R	R
3. Dissertation								
ITCS 699	Dissertation	36 (0-108-0)	M	M	M	M	M	M
ITCS 799	Dissertation	48 (0-144-0)	M	M	M	M	M	M
ITCS 898	Dissertation	48 (0-144-0)	M	M	M	M	M	M
ITCS 899	Dissertation	72 (0-216-0)	M	M	M	M	M	M

I = ELO is introduced & assessed
R = ELO is reinforced & assessed
P = ELO is practiced & assessed
M = Level of Mastery is assessed

Table 5(1): Relationship between Courses of the Program and Program Learning Outcomes for Plan 1.1

Code	Name	Credits	Program Learning Outcomes					
			1	2	3	4	5	6
Year 1, Semester 1								
ITCS 671	Seminar in Computer Science I	1 (1-0-2)	I	R		I	I	I
ITCS 898	Dissertation (Developing the research topic and planning)	9 (0-27-0)	R	R	R	R	R	R
Year 1, Semester 2								
ITCS 672	Seminar in Computer Science II	1 (1-0-2)	R	R		R	R	R
ITCS 898	Dissertation (Reviewing literature and preparing for data collection)	9 (0-27-0)	R	R	R	R	R	R
Year 2, Semester 1								
ITCS 673	Seminar in Computer Science III	1 (1-0-2)	R	R		R	R	R
ITCS 898	Dissertation (Conducting preliminary experiments and writing the proposal)	9 (0-27-0)	R	R	R	R	R	R
Qualifying Examination								
Year 2, Semester 2								
ITCS 898	Dissertation (Proposing the thesis, conducting experiments, and writing the first manuscript)	9 (0-27-0)	M	M	M	M	M	M
Year 3, Semester 1								
ITCS 898	Dissertation (Conducting experiments and writing the second manuscript)	9 (0-18-0)	M	M	M	M	M	M
Year 3, Semester 2								
ITCS 898	Dissertation (Writing the thesis and thesis defense)	9 (0-18-0)	M	M	M	M	M	M

I = ELO is introduced & assessed R = ELO is reinforced & assessed

P = ELO is practiced & assessed M = Level of Mastery is assessed

Table 5(2): Relationship between Courses of the Program and Program Learning Outcomes for Plan 1.2

Code	Name	Credits	Program Learning Outcomes					
			1	2	3	4	5	6
Year 1, Semester 1								
ITCS 533	Research Methodology in Computer Science	2 (2-0-4)	I	I		I	I	I
ITCS 671	Seminar in Computer Science I	1 (1-0-2)	I	R		I	I	I
ITCS 899	Dissertation (Developing the research topic)	9 (0-27-0)	R	R	R	R	R	R
Year 1, Semester 2								
ITCS 672	Seminar in Computer Science II	1 (1-0-2)	R	R		R	R	R
ITCS 899	Dissertation (Planning and Reviewing literature)	9 (0-27-0)	R	R	R	R	R	R
Year 2, Semester 1								
ITCS 673	Seminar in Computer Science III	1 (1-0-2)	R	R		R	R	R
ITCS 899	Dissertation (Reviewing literature and preparing for data collection)	9 (0-27-0)	R	R	R	R	R	R
Qualifying Examination								
Year 2, Semester 2								
ITCS 899	Dissertation (Conducting preliminary experiments and writing the proposal)	9 (0-27-0)	R	R	R	R	R	R
Year 3, Semester 1								
ITCS 899	Dissertation (Proposing the thesis and conducting experiments)	9 (0-27-0)	R	R	R	R	R	R
Year 3, Semester 2								
ITCS 899	Dissertation (Writing the first manuscript)	9 (0-27-0)	M	M	M	M	M	M
Year 4, Semester 1								
ITCS 899	Dissertation (Conducting experiments and writing the second manuscript)	9 (0-27-0)	M	M	M	M	M	M
Year 4, Semester 2								
ITCS 899	Dissertation (Writing the thesis and thesis defense)	9 (0-27-0)	M	M	M	M	M	M

I = ELO is introduced & assessed
R = ELO is reinforced & assessed
P = ELO is practiced & assessed
M = Level of Mastery is assessed

Table 5(3): Relationship between Courses of the Program and Program Learning Outcomes for Plan 2.1

Code	Name	Credits	Program Learning Outcomes					
			1	2	3	4	5	6
Year 1, Semester 1								
ITCS 531	Mathematics for Computer Science	2 (2-0-4)		R	R			
ITCS 533	Research Methodology in Computer Science	2 (2-0-4)	I	I		I	I	I
ITCS 671	Seminar in Computer Science I	1 (1-0-2)	I	R		I	I	I
Year 1, Semester 2								
ITCS 532	Foundations of Computational Science	2 (2-0-4)		R	R			
ITCS 672	Seminar in Computer Science II	1 (1-0-2)	R	R		R	R	R
ITCS xxx	Elective Course	3 (3-0-6)						
Year 2, Semester 1								
ITCS 673	Seminar in Computer Science III	1 (1-0-2)	R	R		R	R	R
ITCS 699	Dissertation (Developing the research topic, planning, reviewing literature)	9 (0-27-0)	R	R	R	R	R	R
Qualifying Examination								
Year 2, Semester 2								
ITCS 699	Dissertation (Preparing for data collection, conducting preliminary experiments, and writing the proposal, proposing thesis)	9 (0-27-0)	R	R	R	R	R	R
Year 3, Semester 1								
ITCS 699	Dissertation (Conducting experiments, writing the first manuscript)	9 (0-27-0)	M	M	M	M	M	M
Year 3, Semester 2								
ITCS 699	Dissertation (Writing the thesis and thesis defense)	9 (0-27-0)	M	M	M	M	M	M

I = ELO is introduced & assessed
R = ELO is reinforced & assessed
P = ELO is practiced & assessed
M = Level of Mastery is assessed

Table 5(4): Relationship between Courses of the Program and Program Learning Outcomes for Plan 2.2

Code	Name	Credits	Program Learning Outcomes					
			1	2	3	4	5	6
Year 1, Semester 1								
ITCS 523	Data Science Essentials	3 (3-0-6)	R	R	R	R	R	
ITCS 531	Mathematics for Computer Science	2 (2-0-4)		R	R			
ITCS 533	Research Methodology in Computer Science	2 (2-0-4)	I	I		I	I	I
ITCS 671	Seminar in Computer Science I	1 (1-0-2)	I	R		I	I	I
Year 1, Semester 2								
ITCS 532	Foundations of Computational Science	2 (2-0-4)		R	R			
ITCS 672	Seminar in Computer Science II	1 (1-0-2)	R	R		R	R	R
ITCS xxx	Elective Course	3 (3-0-6)						
ITCS xxx	Elective Course	3 (3-0-6)						
Year 2, Semester 1								
ITCS 673	Seminar in Computer Science III	1 (1-0-2)	R	R		R	R	R
ITCS xxx	Elective Course	3 (3-0-6)						
ITCS xxx	Elective Course	3 (3-0-6)						
ITCS 799	Dissertation (Developing the research topic and planning)	3 (0-9-0)	R	R	R	R	R	R
Qualifying Examination								
Year 2, Semester 2								
ITCS 799	Dissertation (Reviewing literature and preparing for data collection)	9 (0-27-0)	R	R	R	R	R	R
Year 3, Semester 1								
ITCS 799	Dissertation (Conducting preliminary experiments and writing the proposal)	9 (0-27-0)	R	R	R	R	R	R
Year 3, Semester 2								
ITCS 799	Dissertation (Proposing thesis and Conducting experiments)	9 (0-27-0)	R	R	R	R	R	R

Code	Name	Credits	Program Learning Outcomes					
			1	2	3	4	5	6
Year 4, Semester 1								
ITCS 799	Dissertation (Writing the first manuscript)	9 (0-27-0)	M	M	M	M	M	M
Year 4, Semester 2								
ITCS 799	Dissertation (Writing the thesis and thesis defense)	9 (0-27-0)	M	M	M	M	M	M

I = ELO is introduced & assessed R = ELO is reinforced & assessed

P = ELO is practiced & assessed M = Level of Mastery is assessed

According to Section 3's 3.1.7 and Table 5, the mapping between expected learning outcomes and year of study is shown below.

Table 6(a): The expectation of learning outcomes at the end of the academic year for Plan 1.1

Year of study	Knowledge, skills, and any other expected learning outcomes	PLOs
1st	After the 1st year of study, the students are expected to - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories. - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically. - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively.	PLO2 PLO3 PLO5
2nd	After the 2nd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers. - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories. - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically. - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively.	PLO1 PLO2 PLO3 PLO4 PLO5
3rd	After the 3rd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers. - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories.	PLO1 PLO2 PLO3 PLO4 PLO5

Year of study	Knowledge, skills, and any other expected learning outcomes	PLOs
	- Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically. - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively. - Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review.	PLO6

Table 6(b): The expectation of learning outcomes at the end of the academic year for Plan 1.2

Year of study	Knowledge, skills, and any other expected learning outcomes	PLOs
1st	After the 1st year of study, the students are expected to - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically	PLO2 PLO3
2nd	After the 2nd year of study, the students are expected to - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	PLO2 PLO3 PLO5
3rd	After the 2nd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers. - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility	PLO1 PLO2 PLO3 PLO4 PLO5

Year of study	Knowledge, skills, and any other expected learning outcomes	PLOs
	- Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	
4th	After the 3rd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively - Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review	PLO1 PLO2 PLO3 PLO4 PLO5 PLO6

Table 6(c): The expectation of learning outcomes at the end of the academic year for Plan 2.1

Year of study	Knowledge, skills, and any other expected learning outcomes	PLOs
1st	After the 1st year of study, the students are expected to - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	PLO2 PLO3 PLO5
2nd	After the 2nd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically. - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	PLO1 PLO2 PLO3 PLO4 PLO5
3rd	After the 3rd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers.	PLO1 PLO2 PLO3 PLO4

Year of study	Knowledge, skills, and any other expected learning outcomes	PLOs
	- Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility. - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively - Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review	PLO5 PLO6

Table 6(d): The expectation of learning outcomes at the end of the academic year for Plan 2.2

Year of study	Knowledge, skills, and any other expected learning outcomes	PLO
1st	After the 1st year of study, the students are expected to - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories	PLO2
2nd	After the 2nd year of study, the students are expected to - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	PLO2 PLO3 PLO5
3rd	After the 2nd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers. - Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories. - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically. - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility. - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively	PLO1 PLO2 PLO3 PLO4 PLO5
4th	After the 3rd year of study, the students are expected to - Commit to appropriate ethics and professional code of conduct in research, academic, and computer science careers	PLO1 PLO2 PLO3 PLO4 PLO5

Year of study	Knowledge, skills, and any other expected learning outcomes	PLO
	- Demonstrate a comprehensive understanding of broad knowledge of computer science principles and theories - Determine methods and techniques in their specialized computer science domains to solve real-world and research problems systematically - Demonstrate the ability to work independently and collaboratively in a multidisciplinary team with self-responsibility - Communicate in English to collaborate, convey computer science knowledge, and present research findings via appropriate information and communication technology tools to both expert and general audiences effectively - Discover new computer science knowledge through original research of international and publishable quality that satisfies peer review	PLO6

APPENDIX E

The revised of Program

Appendix E

The Revision of Doctor of Philosophy Program

in Computer Science (International Program)

Volume B.E. 2561

Faculty of Information and Communication Technology

and Faculty of Graduate Studies, Mahidol University

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1. **The Curriculum was approved by the Office of the Higher Education Commission on** 6 **January B.E. 2564.**

2. **The Mahidol University Council has approved this revised curriculum in the 595 meeting on** August 16, 2023.

3. **The revised curriculum will be effective with student class B.E. 2566 from the 2nd semester of the Academic Year B.E. 2566 onwards.**

4. **Rationale of revision**

   4.1 The program is required to be revised according to the Permanent Secretary, Ministry of Higher Education, Science and Innovation's Undergraduate Curriculum Standard Criterion B.E. 2565.

   4.2 The curriculum structure is needed to be updated based on the stakeholders' requirements.

   4.3 The content of the program is needed to be updated with contemporary body of knowledge in computer science according to the change in computer technology.

5. **The details of the revision**

   5.1 Adjust the list of course instructors and instructors in charge of the course

Instructors of the Current Program	Instructors of the Revised Program
Professor Dr. Peter Fereed Haddawy	Professor Dr. Peter Fereed Haddawy
Associate Professor Dr. Jarernsri Mitrpanont	-
Associate Professor Dr. Chomtip Pornpanomchai	Associate Professor Dr. Chomtip Pornpanomchai
Associate Professor Dr. Sudsanguan Ngamsuriyaroj	-

Instructors of the Current Program	Instructors of the Revised Program
Associate Professor Dr. Suppawong Tuarob	Associate Professor Dr. Suppawong Tuarob
Associate Professor Dr. Vasaka Visoottiviseth	Associate Professor Dr. Vasaka Visoottiviseth
Associate Professor Dr. Worapan Kusakunniran	Associate Professor Dr. Worapan Kusakunniran
Assistant Professor Dr. Ananta Srisuphab	-
Assistant Professor Dr. Apirak Hoonlor	-
Assistant Professor Dr. Boonsit Yimwadsana	Assistant Professor Dr. Boonsit Yimwadsana
Assistant Professor Dr. Charnyote Pluempitiwiriyawej	Assistant Professor Dr. Charnyote Pluempitiwiriyawej
Assistant Professor Dr. Morakot Choetkiertikul	Assistant Professor Dr. Morakot Choetkiertikul
Assistant Professor Dr. Mores Prachyabrued	Assistant Professor Dr. Mores Prachyabrued
Assistant Professor Dr. Piyanuch Silapachote	-
Assistant Professor Dr. Preecha Tangworakitthaworn	Assistant Professor Dr. Preecha Tangworakitthaworn
Assistant Professor Dr. Songsri Tangsripairoj	Assistant Professor Dr. Songsri Tangsripairoj
Assistant Professor Dr. Sukanya Phongsuphap	-
Assistant Professor Dr. Thanwadee Sunetnanta	Assistant Professor Dr. Thanwadee Sunetnanta
Assistant Professor Dr. Thitinan Tantidham	Assistant Professor Dr. Thitinan Tantidham
Lecturer Dr. Akara Supratak	Lecturer Dr. Akara Supratak
-	Lecturer Dr. Assadarat Khurat
Lecturer Dr. Chaiyong Ragkhitwetsagul	Lecturer Dr. Chaiyong Ragkhitwetsagul
-	Lecturer Dr. Dolvara Guna-Tilaka
-	Lecturer Dr. Ittipon Rassameeroj
-	Lecturer Dr. Jidapa Kraisangka
Lecturer Dr. Pattanasak Mongkolwat	Lecturer Dr. Pattanasak Mongkolwat
-	Lecturer Dr. Petch Sajjacholapunt
-	Lecturer Dr. Pisit Praiwattana
-	Lecturer Dr. Siripen Pongpaichet

Instructors of the Current Program	Instructors of the Revised Program
-	Lecturer Dr. Songpon Teerakanok
Lecturer Dr. Thanapon Noraset	Lecturer Dr. Thanapon Noraset
Lecturer Dr. Tipajin Thaipisutikul	Lecturer Dr. Tipajin Thaipisutikul
Lecturer Dr. Thitivatr Patanasakpinyo	Lecturer Dr. Thitivatr Patanasakpinyo
Lecturer Dr. Wudhichart Sawangphol	Lecturer Dr. Wudhichart Sawangphol

5.2 Adjustment of the curriculum structure are as follows:

	Plan 1.1 (credits)	**Plan 1.2 (credits)**	**Plan 2.1 (credits)**	**Plan 2.2 (credits)**
Required courses	-	-	9	12
Elective courses not less than	-	-	3	12
Dissertation	48	72	36	48
Total not less than	**48**	**72**	**48**	**72**

5.3 Adjustment of the courses in the curriculum structure as follows

The Comparison Table of Courses between the Current Program and Revising Program

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
Plan 2.1 For student with Master's Degree		**Plan 2.1 For student with Master's Degree**		
Required Courses 9 credits		**Required Courses 9 credits**		
ITCS 531 Mathematics for Computer Science ทสคพ ๕๓๑ คณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	3 (3-0-6)	ITCS 531 Mathematics for Computer Science ทสคพ ๕๓๑ คณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	2 (2-0-4)	Reduce credits
ITCS 532 Foundations of Computational Science ทสคพ ๕๓๒ รากฐานของวิทยาศาสตร์เชิงคำนวณ	3 (3-0-6)	ITCS 532 Foundations of Computational Science ทสคพ ๕๓๒ รากฐานของวิทยาศาสตร์เชิงคำนวณ	2 (2-0-4)	Reduce credits
		ITCS 533 Research Methodology in Computer Science ทสคพ ๕๓๓ ระเบียบวิธีวิจัยทางวิทยาการคอมพิวเตอร์	2 (2-0-4)	New course
ITCS 671 Seminar in Computer Science I ทสคพ ๖๗๑ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๑	1 (1-0-2)	ITCS 671 Seminar in Computer Science I ทสคพ ๖๗๑ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๑	1 (1-0-2)	Unchanged
ITCS 672 Seminar in Computer Science II ทสคพ ๖๗๒ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๒	1 (1-0-2)	ITCS 672 Seminar in Computer Science II ทสคพ ๖๗๒ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๒	1 (1-0-2)	Unchanged
ITCS 673 Seminar in Computer Science III ทสคพ ๖๗๓ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๓	1 (1-0-2)	ITCS 673 Seminar in Computer Science III ทสคพ ๖๗๓ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๓	1 (1-0-2)	Unchanged
		Plan 2.2 For student with Bachelor's Degree		
		Required Courses 12 credits		
		ITCS 523 Data Science Essentials ทสคพ ๕๒๓ ส่วนสำคัญของวิทยาการข้อมูล	3 (3-0-6)	Add Course
		ITCS 531 Mathematics for Computer Science ทสคพ ๕๓๑ คณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	2 (2-0-4)	Reduce credits
		ITCS 532 Foundations of Computational Science ทสคพ ๕๓๒ รากฐานของวิทยาศาสตร์เชิงคำนวณ	2 (2-0-4)	Reduce credits

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
		ITCS 533 Research Methodology in Computer Science ทสคพ ๕๓๓ ระเบียบวิธีวิจัยทางวิทยาการคอมพิวเตอร์	2 (2-0-4)	New course
		ITCS 671 Seminar in Computer Science I ทสคพ ๖๗๑ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๑	1 (1-0-2)	Unchanged
		ITCS 672 Seminar in Computer Science II ทสคพ ๖๗๒ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๒	1 (1-0-2)	Unchanged
		ITCS 673 Seminar in Computer Science III ทสคพ ๖๗๓ การสัมมนาทางวิทยาการคอมพิวเตอร์ ๓	1 (1-0-2)	Unchanged
Elective Courses **Plan 2.1 For students with Master's Degree not less than 3 credits**		**Elective Courses** **Plan 2.1 For students with Master's Degree not less than 3 credits**		
(1) Database		**(1) Database**		
ITCS 628 Data Mining and Knowledge Discovery ทสคพ ๖๒๘ เหมืองข้อมูลและการค้นพบองค์ความรู้	3 (3-0-6)			Closed course
ITCS 629 Knowledge Engineering ทสคพ ๖๒๙ วิศวกรรมความรู้	3 (3-0-6)			Closed course
ITCS 682 Advanced Database Systems ทสคพ ๖๘๒ ระบบฐานข้อมูล	3 (3-0-6)			Moive course
(2) Network and Security		**(2) Network and Security**		
ITCS 551 Service-oriented and Cloud Computing ทสคพ ๕๕๑ การคำนวณเชิงบริการและคลาวด์	3 (3-0-6)			Moive course
ITCS 554 Information Security Management ทสคพ ๕๕๔ การจัดการความมั่นคงของสารสนเทศ	3 (3-0-6)			Moive course

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
ITCS 634 Queuing Modeling in Computer Communication Networks ทสคพ ๖๓๔ การจำลองแบบแถวคอยในเครือข่ายสื่อสารคอมพิวเตอร์	3 (3-0-6)			Closed course
ITCS 638 Networks and Distributed Systems Security ทสคพ ๖๓๘ ความมั่นคงของระบบเครือข่ายและระบบแบบกระจาย	3 (3-0-6)	ITCS 638 Networks and Distributed Systems Security ทสคพ ๖๓๘ ความมั่นคงของระบบเครือข่ายและระบบแบบกระจาย	3 (3-0-6)	Change course description
ITCS 653 Advanced Computer Architecture ทสคพ ๖๕๓ สถาปัตยกรรมคอมพิวเตอร์ขั้นสูง	3 (3-0-6)			Closed course
ITCS 687 Advanced Computer Security ทสคพ ๖๘๗ ความมั่นคงของคอมพิวเตอร์ขั้นสูง	3 (3-0-6)	ITCS 687 Advanced Computer Security ทสคพ ๖๘๗ ความมั่นคงของคอมพิวเตอร์ขั้นสูง	3 (3-0-6)	Change course description
(3) Artificial Intelligence		**(3) Artificial Intelligence**		
ITCS 660 Heuristic Methods for Optimization ทสคพ ๖๖๐ วิธีการแก้ปัญหาเพื่อเพิ่มประสิทธิภาพ	3 (3-0-6)			Closed course
ITCS 661 Advanced Artificial Intelligence ทสคพ ๖๖๑ ปัญญาประดิษฐ์ขั้นสูง	3 (3-0-6)			Moive course
ITCS 662 Advanced Pattern Recognition ทสคพ ๖๖๒ การรู้จำรูปแบบขั้นสูง	3 (3-0-6)			Closed course
ITCS 663 Image and Signal Processing ทสคพ ๖๖๓ การประมวลผลภาพและสัญญาณ	3 (3-0-6)			Closed course
ITCS 665 Natural Language Processing ทสคพ ๖๖๕ การประมวลผลภาษาธรรมชาติ	3 (3-0-6)			Moive course
ITCS 667 Advanced Computer Vision ทสคพ ๖๖๗ คอมพิวเตอร์วิทัศน์ขั้นสูง	3 (3-0-6)			Moive course

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
		ITCS 692 Advanced topics in Artificial Intelligence ทสคพ ๖๙๒ หัวข้อขั้นสูงด้านปัญญาประดิษฐ์	3 (3-0-6)	New course
(4) Software Engineering		**(4) Software Engineering**		
ITCS 642 Software Engineering Management ทสคพ ๖๔๒ การจัดการวิศวกรรมซอฟต์แวร์	3 (3-0-6)	ITCS 642 Software Engineering Management ทสคพ ๖๔๒ การจัดการวิศวกรรมซอฟต์แวร์	3 (3-0-6)	Unchanged
ITCS 644 Software Quality Assurance ทสคพ ๖๔๔ การประกันคุณภาพซอฟต์แวร์	3 (3-0-6)			Moive course
ITCS 646 Requirements Engineering ทสคพ ๖๔๖ วิศวกรรมความต้องการ	3 (3-0-6)	ITCS 646 Requirements Engineering ทสคพ ๖๔๖ วิศวกรรมความต้องการ	3 (3-0-6)	Unchanged
ITCS 651 Model-Driven Design and Development ทสคพ ๖๕๑ การออกแบบและการพัฒนาที่ขับเคลื่อนด้วยแบบจำลอง	3 (3-0-6)			Closed course
ITCS 657 Validation and Verification ทสคพ ๖๕๗ การตรวจสอบความสมเหตุสมผลและการทวนสอบ	3 (3-0-6)			Closed course
		ITCS 693 Advanced Topics in Software Engineering ทสคพ ๖๙๓ หัวข้อขั้นสูงด้านวิศวกรรมซอฟต์แวร์	3 (3-0-6)	New course
(5) Other Elective Courses		**(5) Other Elective Courses**		
ITCS 571 Numerical Methods for Mathematical Optimization ทสคพ ๕๗๑ วิธีเชิงตัวเลขสำหรับการทำให้เหมาะสมที่สุดเชิงคณิตศาสตร์	3 (3-0-6)			Closed course
		ITCS 694 Bioinformatics ทสคพ ๖๙๔ ชีวสารสนเทศศาสตร์	3 (3-0-6)	New course

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
ITCS 695 Independent Study ทสคพ ๖๙๕ การศึกษาอิสระ	3 (0-6-3)	ITCS 695 Independent Study ทสคพ ๖๙๕ การศึกษาอิสระ	3 (0-6-3)	Unchanged
		Elective Courses **Plan 2.2 For students with Bachelor's Degree not less than 12 credits**		
(1) Database		**(1) Database**		
		ITCS 621 Database Design and Administration ทสคพ ๖๒๑ การออกแบบและการบริหารฐานข้อมูล	3 (3-0-6)	Add Course
		ITCS668 Cloud Database and Big Data Technology ทสคพ ๖๖๘ ฐานข้อมูลระบบคลาวด์และเทคโนโลยีข้อมูลขนาดใหญ่	3 (3-0-6)	Add Course
		ITCS682 Advanced Database Systems ทสคพ ๖๘๒ ระบบฐานข้อมูลขั้นสูง	3 (3-0-6)	Add Course, Changed course description
(2) Network and Security		**(2) Network and Security**		
		ITCS 551 Service-oriented and Cloud Computing ทสคพ ๕๕๑ การคำนวณเชิงบริการและคลาวด์	3 (3-0-6)	Add Course, Changed course description
		ITCS 554 Information Security Management ทสคพ ๕๕๔ การจัดการความมั่นคงของสารสนเทศ	3 (3-0-6)	Add Course Unchanged
		ITCS 638 Networks and Distributed Systems Security ทสคพ ๖๓๘ ความมั่นคงของระบบเครือข่ายและระบบแบบกระจาย	3 (3-0-6)	Add Course, Change course description

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
		ITCS 687 Advanced Computer Security ทสคพ ๖๘๗ ความมั่นคงของคอมพิวเตอร์ขั้นสูง	3 (3-0-6)	Add Course, Change course description
(3) Artificial Intelligence		**(3) Artificial Intelligence**		
		ITCS517 Machine Learning ทสคพ ๕๑๗ การเรียนรู้เชิงเครื่องจักร	3 (3-0-6)	Add Course
		ITCS518 Image Analysis and Understanding ทสคพ ๕๑๘ การวิเคราะห์และความเข้าใจภาพ	3 (3-0-6)	Add Course
		ITCS 661 Advanced Artificial Intelligence ทสคพ ๖๖๑ ปัญญาประดิษฐ์ขั้นสูง	3 (3-0-6)	Add Course, Changed course description
		ITCS 665 Natural Language Processing ทสคพ ๖๖๕ การประมวลผลภาษาธรรมชาติ	3 (3-0-6)	Add Course, Unchanged
		ITCS 667 Advanced Computer Vision ทสคพ ๖๖๗ คอมพิวเตอร์วิทัศน์ขั้นสูง	3 (3-0-6)	Add Course, Changed course description
		ITCS 692 Advanced topics in Artificial Intelligence ทสคพ ๖๙๒ หัวข้อขั้นสูงด้านปัญญษประดิษฐ์	3 (3-0-6)	New course
(4) Software Engineering		**(4) Software Engineering**		
		ITCS 613 Tools and Environments for Software Development ทสคพ ๖๑๓ เครื่องมือและสภาพแวดล้อมสำหรับการพัฒนาซอฟต์แวร์	3 (3-0-6)	Add Course Unchanged
		ITCS 615 Empirical Software Engineering ทสคพ ๖๑๕ วิศวกรรมซอฟต์แวร์เชิงประจักษ์	3 (3-0-6)	Add Course Unchanged

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
		ITCS 642 Software Engineering Management ทสคพ ๖๔๒ การจัดการวิศวกรรมซอฟต์แวร์	3 (3-0-6)	Add Course Unchanged
		ITCS 644 Software Quality Assurance ทสคพ ๖๔๔ การประกันคุณภาพซอฟต์แวร์	3 (3-0-6)	Add Course Unchanged
		ITCS 646 Requirements Engineering ทสคพ ๖๔๖ วิศวกรรมความต้องการ	3 (3-0-6)	Add Course Unchanged
		ITCS 693 Advanced Topics in Software Engineering ทสคพ ๖๙๓ หัวข้อขั้นสูงด้านวิศวกรรมซอฟต์แวร์	3 (3-0-6)	New course
(5) Other Elective Courses		**(5) Other Elective Courses**		
		ITCS 503 Design and Analysis of Algorithms ทสคพ ๕๐๓ การออกแบบและวิเคราะห์ขั้นตอนวิธี	3 (3-0-6)	Add Course, Changed course description
		ITCS 655 Computer Graphics ทสคพ ๖๕๕ คอมพิวเตอร์กราฟิกส์	3 (3-0-6)	Add Course Unchanged
		ITCS 694 Bioinformatics ทสคพ ๖๙๔ ชีวสารสนเทศศาสตร์	3 (3-0-6)	New course
		ITCS 695 Independent Study ทสคพ ๖๙๕ การศึกษาอิสระ	3 (0-6-3)	Add Course Unchanged
		ITCS696 Advanced Topics in Computer Science ทสคพ ๖๙๖ หัวข้อขั้นสูงด้านวิทยาการคอมพิวเตอร์	3 (3-0-6)	Add Course Unchanged
Dissertation		**Dissertation**		
ITCS 699 Dissertation	36 (0-108-0)	ITCS 699 Dissertation ทสคพ ๖๙๙ วิทยานิพนธ์	36 (0-108-0)	Unchanged
		ITCS 799 Dissertation ทสคพ ๗๙๙ วิทยานิพนธ์	48 (0-144-0)	New course

Courses of the Current Program (B.E. 2561)		Courses of the Revising Program (B.E. 2566)		Remark
ITCS 898 Dissertation	48 (0-144-0)	ITCS 898 Dissertation ทสคพ ๘๙๘ วิทยานิพนธ์	48 (0-144-0)	Unchanged
		ITCS 899 Dissertation ทสคพ ๘๙๙ วิทยานิพนธ์	72 (0-216-0)	New course

6. The Comparison Table of the Curriculum Structure between the Current Program and Revised Program Based on the Criteria and Standards for Graduate Degree Programs B.E. 2565 (set by The Commission on Higher Education Standards, The Office of Permanent, Ministry of Higher Education, Science, Research and Innovation)

Plan 1 Research Only

6.1 Plan 1.1 For students with Master's Degree

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2565	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
Thesis	not less than 48	48	48
Total credits (not less than)	**48**	**48**	**48**

6.2 Plan 1.2 For students with Bachelor's Degree

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2565	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
Thesis	not less than 72	-	72
Total credits (not less than)	**72**	**-**	**72**

Plan 2 Course work and research

6.3 Plan 2.1 For students with Master's Degree

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2565	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
Required Courses	Coursework not less than 12	9	9
Elective Courses		not less than 3	not less than 3
Thesis	not less than 36	36	36
Total credits (not less than)	**48**	**48**	**48**

6.4 Plan 2.2 For students with Bachelor's Degree

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2565	**Curriculum Structure of the Current Program**	**Curriculum Structure of the Revised Program**
Required Courses	Coursework not less than 24	-	12
Elective Courses		-	not less than 12
Thesis	not less than 48	-	48
Total credits (not less than)	**72**	**-**	72

คำสั่ง คณะเทคโนโลยีสารสนเทศและการสื่อสาร มหาวิทยาลัยมหิดล

ที่ ๓ /๒๕๖๔

เรื่อง แต่งตั้งคณะกรรมการปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต

สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ)

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เพื่อให้การปรับปรุงหลักสูตรเป็นไปตามกรอบมาตรฐานคุณวุฒิระดับอุดมศึกษาแห่งชาติ พ.ศ. ๒๕๕๒ ของสำนักงานคณะกรรมการการอุดมศึกษา กระทรวงศึกษาธิการ คณะเทคโนโลยีสารสนเทศและการสื่อสาร จึงแต่งตั้งคณะกรรมการปรับปรุงหลักสูตร ดังมีรายนามต่อไปนี้

๑.	ผู้ช่วยศาสตราจารย์ ดร. บุญสิทธิ์ ยิ้มวาสนา	ประธานกรรมการ
๒.	ผู้ช่วยศาสตราจารย์ ดร. สุกัญญา พงษ์สุภาพ	กรรมการ
๓.	ผู้ช่วยศาสตราจารย์ ดร. ทรงศรี ตั้งศรีไพโรจน์	กรรมการ
๔.	ดร. พนมพร สุวรรณปัฏนะ	กรรมการ
๕.	รองศาสตราจารย์ ดร. วราพร จิระพันธุ์ทอง	กรรมการ
๖.	รองศาสตราจารย์ ดร. สุภาวดี อร่ามวิทย์	กรรมการ
๗.	ผู้ช่วยศาสตราจารย์ ดร. ธันวดี สุเนตนันท์	กรรมการ
๘.	ดร. ธนพล นรเสฏฐ์	กรรมการ
๙.	ดร. อัคร สุประทักษ์	กรรมการ
๑๐.	นางสาวบุญธิดา สุวัชระกุลธร	เลขานุการ

ทั้งนี้ ให้คณะกรรมการชุดนี้ทำหน้าที่ตรวจสอบ กลั่นกรอง ให้ความเห็นชอบและข้อเสนอแนะเกี่ยวกับเนื้อหาของหลักสูตรให้มีความถูกต้อง สอดคล้องตามเกณฑ์มาตรฐานหลักสูตรให้แล้วเสร็จ และเสนอต่อมหาวิทยาลัยมหิดลตามลำดับ เพื่อให้ทันเริ่มใช้กับนักศึกษาใหม่ในปีการศึกษา ๒๕๖๖ เป็นต้นไป

สั่ง ณ วันที่ ๐๘ มกราคม พ.ศ. ๒๕๖๔

(ดร. พัฒนศักดิ์ มงคลวัฒน์)

คณบดีคณะเทคโนโลยีสารสนเทศและการสื่อสาร

คำสั่งคณะเทคโนโลยีสารสนเทศและการสื่อสาร มหาวิทยาลัยมหิดล

ที่ ๗๗/๒๕๖๕

เรื่อง แต่งตั้งคณะกรรมการปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต

สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ) (เพิ่มเติม)

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ตามคำสั่งคณะเทคโนโลยีสารสนเทศและการสื่อสาร มหาวิทยาลัยมหิดล ที่ ๓/๒๕๖๔ ลงวันที่ ๑๘ มกราคม ๒๕๖๔ ได้แต่งตั้งคณะกรรมการปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ) ไปแล้วนั้น

เพื่อให้การปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ) เป็นไปด้วยความเรียบร้อยและมีประสิทธิภาพ คณะเทคโนโลยีสารสนเทศและการสื่อสาร จึงแต่งตั้งคณะกรรมการปรับปรุงหลักสูตรเพิ่มเติม ดังนี้

ดร. ณวัฒน์ คำนูณวัฒน์ กรรมการ

ทั้งนี้ตั้งแต่บัดนี้เป็นต้นไป

สั่ง ณ วันที่ ๙ สิงหาคม พ.ศ. ๒๕๖๕

(ดร. พัฒนศักดิ์ มงคลวัฒน์)

คณบดีคณะเทคโนโลยีสารสนเทศและการสื่อสาร

คำสั่งคณะเทคโนโลยีสารสนเทศและการสื่อสาร มหาวิทยาลัยมหิดล

ที่ ๕๑ /๒๕๖๖

เรื่อง แต่งตั้งคณะกรรมการปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต

สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ)

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โดยที่เป็นการสมควรปรับปรุงคำสั่งแต่งตั้งคณะกรรมการปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ) คณะเทคโนโลยีสารสนเทศและการสื่อสาร มหาวิทยาลัยมหิดล ให้เป็นไปด้วยความเรียบร้อยเหมาะสม และมีความชัดเจนยิ่งขึ้น คณะเทคโนโลยีสารสนเทศและการสื่อสาร จึงมีคำสั่งดังนี้

๑. ให้ยกเลิกคำสั่งคณะเทคโนโลยีสารสนเทศและการสื่อสาร มหาวิทยาลัยมหิดลที่ ๓/๒๕๖๔ เรื่อง แต่งตั้งคณะกรรมการปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ) ลงวันที่ ๑๘ มกราคม พ.ศ. ๒๕๖๔ และคำสั่งคณะเทคโนโลยีสารสนเทศและการสื่อสาร มหาวิทยาลัยมหิดลที่ ๓๗/๒๕๖๕ เรื่อง แต่งตั้งคณะกรรมการปรับปรุงหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาวิทยาการคอมพิวเตอร์ (หลักสูตรนานาชาติ) (เพิ่มเติม) ลงวันที่ ๙ สิงหาคม พ.ศ. ๒๕๖๕ และให้ใช้คำสั่งฉบับนี้แทน

๒. แต่งตั้งคณะกรรมการปรับปรุงหลักสูตร ดังมีรายนามต่อไปนี้

๑)	ผู้ช่วยศาสตราจารย์ ดร. บุญสิทธิ์ ยิ้มวาสนา	ประธานกรรมการ
๒)	ผู้ช่วยศาสตราจารย์ ดร. ทรงศรี ตั้งศรีไพโรจน์	กรรมการ (อาจารย์ผู้รับผิดชอบหลักสูตร)
๓)	ดร. ธนพล นรเสฏฐ์	กรรมการ (อาจารย์ผู้รับผิดชอบหลักสูตร)
๔)	ผู้ช่วยศาสตราจารย์ ดร. สุกัญญา พงษ์สุภาพ	กรรมการ
๕)	ผู้ช่วยศาสตราจารย์ ดร. ธันวดี สุเนตนันท์	กรรมการ
๖)	ดร. อัคร สุประทักษ์	กรรมการ
๗)	รองศาสตราจารย์ ดร. วราพร จิระพันธุ์ทอง	กรรมการผู้ทรงคุณวุฒิ
๘)	รองศาสตราจารย์ ดร. สุภาวดี อร่ามวิทย์	กรรมการผู้ทรงคุณวุฒิ
๙)	ดร. พนมพร สุวรรณปัฏนะ	กรรมการ (จากตัวแทนผู้ใช้บัณฑิต)
๑๐)	ดร. ณวัฒน์ คำนูณวัฒน์	กรรมการ (จากตัวแทนผู้ใช้บัณฑิต)
๑๑)	นางสาวบุญธิดา สุวัชระกุลธร	เลขานุการ

๓. ให้คณะกรรมการชุดนี้มีหน้าที่ตรวจสอบ กลั่นกรอง ให้ความเห็นชอบและข้อเสนอแนะเกี่ยวกับเนื้อหาของหลักสูตรให้มีความถูกต้อง และปรับปรุงหลักสูตรฯ ให้สอดคล้องตามเกณฑ์มาตรฐานหลักสูตรและเป็นไปตามกรอบมาตรฐานคุณวุฒิระดับอุดมศึกษาให้แล้วเสร็จ และเสนอต่อมหาวิทยาลัยมหิดลตามลำดับ เพื่อให้ทันเริ่มใช้กับนักศึกษาใหม่ในปีการศึกษา ๒๕๖๖ เป็นต้นไป

สั่ง ณ วันที่ ๑๗ กรกฎาคม พ.ศ. ๒๕๖๖

(ดร. พัฒนศักดิ์ มงคลวัฒน์)

คณบดีคณะเทคโนโลยีสารสนเทศและการสื่อสาร