รายละเอียดของหลักสูตร

หลักสูตรวิทยาศาสตรมหาบัณฑิต สาขาวิชาเทคโนโลยีเกมและเกมมิฟิเคชัน
(หลักสูตรนานาชาติ/หลักสูตรปรับปรุง พ.ศ. ๒๕๖๗)

MASTER OF SCIENCE PROGRAM IN GAME TECHNOLOGY AND GAMIFICATION
(INTERNATIONAL PROGRAM/REVISED PROGRAM IN 2024)

(หลักสูตรภาคพิเศษ)

คณะเทคโนโลยีสารสนเทศและการสื่อสาร และบัณฑิตวิทยาลัย
มหาวิทยาลัยมหิดล

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Master of Science Program in Game Technology and Gamification
(International Program–Special Program)
Revised Program in 2024

Name of Institution Mahidol University

Campus/Faculty/Department Faculty of Information and Communication Technology

Section 1 General Information

1. Curriculum Name

Thai หลักสูตรวิทยาศาสตรมหาบัณฑิต สาขาวิชาเทคโนโลยีเกมและเกมมิฟิเคชัน (หลักสูตรนานาชาติ)

English Master of Science Program in Game Technology and Gamification (International Program)

2. Name of Degree and Major

Full Title	Thai:	วิทยาศาสตรมหาบัณฑิต (เทคโนโลยีเกมและเกมมิฟิเคชัน)
Abbreviation	Thai:	วท.ม. (เทคโนโลยีเกมและเกมมิฟิเคชัน)
Full Title	English:	Master of Science (Game Technology and Gamification)
Abbreviation	English:	M.Sc. (Game Technology and Gamification)

3. Major Subjects None

4. Required Credits: not less than 36 credits

5. Curriculum Characteristics

5.1 **Curriculum type/model:** Master's Degree

5.2 **Language:** English

5.3 **Recruitment:** Both Thai and international candidates with a good command in English language

5.4 **Collaboration with Other Universities:** None

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

6. Curriculum Status and Curriculum Approval

6.1 Revised Program in 2024

6.2 Starting in semester 1, academic year 2024 onwards

6.3 Curriculum committee approved the program in its meeting 9/2023 on August 8, 2023

6.4 The Mahidol University Council approved the program in its meeting 597 on October 18, 2023...

7. Readiness to Implement/Promote the Curriculum

The curriculum is ready to be announced and has met the quality and standards requirements of the Thai Qualification Framework for Higher Education 2022 in academic year 2026 (2 years after the starting of the program).

8. Opportunities for Graduates

8.1 Researcher in Game Technology and Gamification

8.2 Game Designer

8.3 Game Developer

8.4 Game Analyst and Game Tester

8.5 Interactive/Creative Media Specialist

8.6 Developer and Designer in Virtual Reality

8.7 Multimedia Developer

8.8 Developer in Computer Graphic

8.9 Developer in Animation

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 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
2.	x-xxxx-xxxxx-xx-x Lecturer Dr. Petch Sajjacholapunt	Ph.D. (Computer Science) The University of Warwick, UK. : 2016 M.Phil. (Computer Science with IT Management) The University of Manchester, UK. : 2012 M.Sc. (Computer Science) The University of Manchester, UK. : 2010 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2007	Faculty of Information and Communication Technology
3.	x-xxxx-xxxxx-xx-x Lecturer Dr. Pisit Praiwattana	Ph.D. (Computer Science) Liverpool John Moores University, UK. : 2018 M.S. (Computer Science) University of Southern California, USA : 2012 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2009	Faculty of Information and Communication Technology

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

The vision of the Faculty of Information and Communication Technology for the years 2022 to 2025 is to provide superior academic and professional opportunities in digital computing education, research, and innovation responsive to the needs of a rapidly changing world, elevating the national and global digital economy. Nowadays, the game industry has been increasing and growing continuously. In the year 2021, the value of the gaming industry in Thailand was worth 37,063 million baht which increased 45.69 **%** from year 2019, and was expected to be worth 38,959 million baht in 2022 (information from Digital Economy Promotion Agency or DEPA). In addition, game technology has been applied extensively, such as using game or Virtual Reality (VR) as tools to support learners of various disciplines, e.g., general education as well as medical and military training by creating simulation and analyzing the result automatically, including reducing the cost and risk. The game technology has also been applied in sports for the rehabilitation of athletes, a medium for attracting customers, and the relaxation of the general public.

Currently, Thailand has lacked personnel who are professionals in game technology, therefore we mostly had to import games accounted for 97**%** of Thailand's game market capitalization (information from Digital Economy Promotion Agency or DEPA, year 2021). In order to urgently solve this problem and support the strategic goals as mentioned above, the Faculty therefore has been established the Master of Science Program in Game Technology and Gamification, aiming to produce experts in game technology area to be equivalent to

international level, who are able to apply the game technology to develop the country in the aspect of education, Virtual Reality system training and development, and entertainment for all generations.

In addition, the 20-Year National Strategy and the 13th National Economic and Social Development Plan (2023 – 2027) mentions the aim of becoming a developed country by using technology to enhance innovation. Master of Science Program in Game Technology and Gamification aims to prepare the organization and personnel to have potential in various technologies of building innovations in game technologies as well as to build or develop knowledge along with knowledge management systematically through research work. As a result, these will produce appropriate game technology applications which integrate to Thailand society's strengths in accordance with the National Strategy and Mahidol University's strategic plans, aiming to be the university that uses information communication and technology effectively.

11.2 Social and Cultural Situation/Development

The development of this program takes the social and cultural situations into account, especially the youth who are the program's target group. Therefore, it is necessary to develop scholars in game technology with professionalism, good understanding in the impact of games on society and culture, ethics and morality, in order to design and produce interesting and appropriate games without causing any violence or negative impact on the young people as well as to encourage learning along with playing games.

Apart from the entertainment, game is fully integrated for the greatest benefits to society in various fields, such as medicine, public health, capacity development for disadvantaged or disabled people (e.g., Aphasia), military, simulation, education, and learning media, as well as sport for testing, training, and rehabilitation of athletes.

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 external factor and development mentioned in No. 11 caused the necessity to proactively and potentially develop the Master of Science Program in Game Technology and Gamification curriculum which is adaptable to modern technology evolution, as well as to prepare game business competitions both in Thailand and abroad. This curriculum aims to produce experts in game technology and gamification with high competencies, good command in English, teamwork, self-development in academic and professional fields, and readiness to

work, for competitions in ASEAN Economic Community and international levels. Additionally, this curriculum focuses on understanding the impact of game technology towards the society and culture in order to produce personnel with ethics, morality, and professionalism, in accordance with the policy and vision of Mahidol University, especially in research and education to develop good and competent graduates to the society.

12.2 Relevance to the Missions of the University/Institution

This curriculum is relevant to the missions of the Faculty and Mahidol University, especially in education, research, and innovation. This curriculum aims to develop personnel in game technology which are the integration of Computer Science and Information Technology in order to develop game innovation and new media applying with other fields apart from games, such as education, medicine, military, services, public relations, and entertainment.

Game industry has been increasing and growing continuously. Apart from playing games for entertainment and relaxation, games are used as tools to support learners of various learnings effectively and efficiently, e.g. medical and military training by creating simulation and analyzing the result automatically, including reducing the cost and risk.

Private companies use games as new marketing strategies to attract their customers, games therefore have a great impact on Thailand's economics and society. However, Thailand has extremely lacked personnel who are professional in game technology and gamification, therefore we mostly had to import games or learning media in order to urgently solve this problem.

This curriculum therefore aims to produce graduates who are competent in various game technology areas and non-game areas to be equivalent to international level, as well as to develop the country in the aspect of education, Virtual Reality system training and development, and entertainment for all generations.

The objectives of this curriculum are to teach students regarding features and benefits of games so that they are able to develop technology skills related to game development and make games more interesting and apply them creatively, usefully, and ethically.

Graduates are able to learn by themselves, be ready for rapid change in Information Technology, be well-prepared for internationalization, be important manpower to develop game industry both in game business and non-game business in Thailand to be equivalent to internationalization, and be responsive to manpower shortage in game technology.

Besides, this curriculum also develops knowledge and skills in game application for educational development by encouraging students to study through interactive game media, apart from normal lectures. The acquired knowledge and skills can be shared to other faculties

in the university, such as training courses, counseling sessions, and other related projects, in order to improve education in the university.

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

The Master of Science Program in Game Technology and Gamification focuses on producing graduates who have knowledge and skills to integrate game technology, computer science, and information technology for research and new innovation development in various professions and industries, such as education, medicine, military, sport, service, public relations, and entertainment.

The objectives of this curriculum are to teach students regarding features and benefits of games so that they are able to develop technology skills related to game development and make games more interesting and apply them creatively, usefully, and ethically. Graduates are important manpower to develop the game industry in Thailand to be equivalent to internationalization, and responsive to manpower demand both in government sector and private sector to efficiently support their services.

1.2 Objectives of the Program

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

1.2.1 Have knowledge in theories, practices, and research of game technology and gamification.

1.2.2 Develop solutions and innovations using game technology and gamification for the benefits of society.

1.2.3 Adhere appropriately ethics, integrity, discipline, and respect for the rights of other people and intellectual properties.

1.2.4 Effectively communicate in English, who are proficient in the use of information technology, and who possess creativity, leadership and teamwork.

1.3 Program Learning Outcomes (PLOs)

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

1.3.1 PLO1 Produce work that adheres to appropriate ethics and professional codes of conduct.

1.3.2 PLO2 Comprehend computer science knowledge necessary for game development including artificial intelligence and interactive systems.

1.3.3 PLO3 Comprehend game design and development process from requirements gathering, design and implementation, project management, documentation, testing, to product marketing.

1.3.4 PLO4 Apply game technology and gamification to solve real-world problems such as those in medicine, military, education, and entertainment.

1.3.5 PLO5 Evaluate existing game technology and gamification to identify strengths, weaknesses, and opportunities for innovations. (Plan 1.2 only)

1.3.6 PLO6 Offer creative solutions to game technology and gamification problems. (Plan 1.2 only)

1.3.7 PLO7 Demonstrate effective English communication and proficiency in the use of information technology.

1.3.8 PLO8 Demonstrate creativity, leadership, and teamwork.

2. Plan for Development and Improvement

Plan for Development/Revision	Strategies	Evidences/Indexes
Revise Master of Science in Game Technology and Gamification Program to comply with the Ministry of Higher Education, Science, Research and Innovation (MHESI)'s Post Graduate Curriculum and AUN-QA Standard's, which are updated every five years.	1. Develop curriculum by using fundamental schemes from international curriculum standards. 2. Follow-up, review, evaluate, and revise the curriculum according to the curriculum revision cycle.	1. Curriculum and course evaluation results. 2. Meeting reports of the curriculum administrative committee.
The committee considers making minor revisions to the curriculum every year to satisfy employers' and social demand in order to cope with rapid change of game technology every year.	1. Revising the curriculum and course content to satisfy the expected learning outcomes of employers and society. 2. Survey employers' and social demand.	1. Evaluation of results of graduates. 2. Evaluation report of employer satisfaction for graduates.
Develop faculty staff for building research experience and capability in order to apply knowledge and experience in game technology to improve teaching and research work.	1. Support faculty and staff research activities. 2. Support faculty to provide academic service to agencies within and outside university.	1. Publications by faculty in the curriculum. 2. Academic services by faculty in the curriculum.

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:** There is a 8-week Summer Semester in year 1, or as considered by the Curriculum Committee.

1.3 **Credit Equivalence to Semester System:** None.

2. Curriculum Implementation

2.1 Teaching Schedule

Weekdays evening (6:00 – 9:00 pm.) and weekends (9:00 am. – 4:00 pm.).

Semester 1 : August – December

Semester 2 : January – May

Summer :June - July

2.2 Qualifications of Prospective Students

2.2.1 Holding a Bachelor' s degree or equivalent in Computer Science, Computer Engineering, Information Technology, Information and Communication Technology, Multimedia, Digital Media, Interactive Media, Game Design, eSports, or other related fields.

2.2.2 Have a cumulative GPA of not less than 2.75.

2.2.3 Other requirements shall follow those that specified by the Faculty of Graduate Studies.

2.2.4 Qualifications different from 2.2.2-2.2.3 may be considered by the Program Administrative Committee and the Dean of the Faculty of Graduate Studies.

2.3 Problems Encountered by New Students

New students need to improve learning skills for studying in graduate programs, especially the ability to self-study, analyze problems, and research. They need to practice using English in real life scenarios, such as communication with friends and faculty members. In addition, time management is very important for students who are also working while studying for a graduate degree within the study plan of the program. Some students have limitations in computer science fundamental knowledge.

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

Problems of New Students	Strategies for Problem Solving
Student adaptation for studying in master's degree and time management.	Providing guidance on learning skills during new student orientation meetings and providing academic advisor to students to help guide students on a suitable study plan and other aspects.
English skills	Suggesting students to take an English course provided by the Faculty of Graduate Studies, Faculty of Information and Communication Technology, or Mahidol University.
Student limitation of computer science fundamental knowledge	Providing an advice to students on selection of the fundamental courses.

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

Plan 1.2 Academic (Course work and research)

Academic Year	2024	2025	2026	2027	2028
1st	3	3	3	3	3
2nd	-	3	3	3	3
Cumulative numbers	3	6	6	6	6
Expected number of students graduated	-	3	3	3	3

Plan 2 Profession

Academic Year	2024	2025	2026	2027	2028
1st	7	7	7	7	7
2nd	-	7	7	7	7
Cumulative numbers	7	14	14	14	14
Expected number of students graduated	-	7	7	7	7

2.6 Budget based on the plan

Plan 1.2 Academic (Course work and research)

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 7 course x 15 times x 3 Hrs. ● Lecture course 1 courses x 15 times x 2 Hrs. ● Lecture course 1 courses x 15 times x 1 Hrs.	xxx,xxx
Building cost, Utility fee (Electricity etc.)	xxx,xxx
Total Fixed expenses	**xxx,xxx**

Number of students at break-even point	3	persons
Cost per student at break-even point	431,800	Baht
Expenses per student per academic year	215,900	Baht

Plan 2 Profession

Registration fee	**credits**	**Fee per credit**	**Amount (Baht)**
Tuition fee	xx	x,xxx	xxx,xxx
Thesis registration fee	x		xx,xxx
Research supplies fee			xx,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	xx,xxx
Total variable expenses per student	**xxx,xxx**

Fixed expenses	
Teaching payment ● Lecture course 9 course x 15 times x 3 Hrs. ● Lecture course 1 courses x 15 times x 2 Hrs. ● Lecture course 1 courses x 15 times x 1 Hrs.	xxx,xxx
Building cost, Utility fee (Electricity etc.)	xxx,xxx
Total Fixed expenses	**xxx,xxx**

Number of students at break-even point	3	persons
Cost per student at break-even point	405,400	Baht
Expenses per student per academic year	202,700	Baht

2.7 Educational System: Classroom Mode

2.8 Transfer of Credits, Courses and Cross University Registration

Transfer of credits is following Mahidol University' s regulations on Graduate Studies.

3. Curriculum and Instructors

3.1 Curriculum

3.1.1 Number of credits (not less than) 36 credits

3.1.2 Curriculum Structure

The curriculum structure is set in compliance with the Announcement of The Commission on Higher Education Standards on the subject of Criteria and Standards of Graduate Studies B.E. 2565. The curriculum structure for this Master of Science degree, Plan 1.2 and Plan 2 are as follows:

	Plan 1.2 Academic (credits)	**Plan 2 Profession (credits)**
1. Prerequisite courses	-	-
2. Required courses	15	15
3. Elective courses not less than	9	15
4. Thesis	12	-
5. Independent Study	-	6
Total not less than	**36**	**36**

3.1.3 Courses in the curriculum

1) Prerequisite Courses (Non-credits)

Students who have limitations in computer science fundamental knowledge, can choose to study some certain prerequisite courses as recommended by advisors or program committee. The subjects in the prerequisite courses will not be counted in the total credits. The students will be evaluated AU (Audit).

			Credits (lecture – practice – self-study)
ITCS	503	Design and Analysis of Algorithms	3 (3-0-6)
ทสคพ	๕๐๓	การออกแบบและวิเคราะห์ขั้นตอนวิธี	
ITCS	504	Computer System Organization and Architecture	3 (3-0-6)
ทสคพ	๕๐๔	สถาปัตยกรรมและการจัดระบบคอมพิวเตอร์	
ITCS	507	Mathematical Foundations for Computer Science	3 (3-0-6)
ทสคพ	๕๐๗	พื้นฐานทางคณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	

2) Required Courses (Plan 1.2 Academic (Course work and research) and Plan 2 Profession 15 credits)

			Credits (lecture – practice – self-study)
ITGT	511	Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)
ทสกท	๕๑๑	ขั้นตอนวิธีและปัญญาประดิษฐ์สำหรับเกมคอมพิวเตอร์	
ITGT	521	3D Graphics and Rendering	3 (3-0-6)
ทสกท	๕๒๑	กราฟิกส์และการสร้างภาพ ๓ มิติ	
ITGT	531	Gamification	3 (3-0-6)
ทสกท	๕๓๑	เกมมิฟิเคชัน	
ITGT	532	Game Design and Development	3 (3-0-6)
ทสกท	๕๓๒	การออกแบบและพัฒนาเกม	
ITGT	551	Game Production Management and Marketplace	2 (2-0-4)
ทสกท	๕๕๑	หลักการตลาดและการจัดการการผลิตเกม	
ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ทสกท	๕๘๓	วิทยาระเบียบวิธีวิจัยและสัมมนาทางด้านเทคโนโลยีเกม	

3) Elective Courses

Students in Plan 1.2 Academic (Course work and research) can choose to take the following courses at least 9 credits. Students in Plan 2 (Profession) can choose to take the following courses at least 15 credits:

			Credits (lecture – practice – self-study)
ITGT	522	Virtual Reality	3 (3-0-6)
ทสกท	๕๒๒	ความจริงเสมือน	
ITGT	523	Computer Vision	3 (3-0-6)
ทสกท	๕๒๓	คอมพิวเตอร์วิทัศน์	
ITGT	524	Advanced Animation for Computer Games	3 (3-0-6)
ทสกท	๕๒๔	การทำภาพเคลื่อนไหวสำหรับเกมคอมพิวเตอร์ขั้นสูง	
ITGT	533	Game Engine Development	3 (3-0-6)
ทสกท	๕๓๓	การพัฒนาเกมเอนจิน	
ITGT	534	Tools for Computer Games	3 (3-0-6)
ทสกท	๕๓๔	เครื่องมือสำหรับเกมคอมพิวเตอร์	
ITGT	541	Multiplayer Online Game Development	3 (3-0-6)
ทสกท	๕๔๑	การพัฒนาเกมออนไลน์ในระบบผู้เล่นหลายคน	
ITGT	542	Game Console Technologies and Programming	3 (3-0-6)
ทสกท	๕๔๒	การเขียนโปรแกรมและเทคโนโลยีเกมคอนโซล	
ITGT	543	Mobile Game Programming	3 (3-0-6)
ทสกท	๕๔๓	การเขียนโปรแกรมเกมบนอุปกรณ์เคลื่อนที่	
ITGT	552	Digital Storytelling and Machinima	3 (3-0-6)
ทสกท	๕๕๒	การเล่าเรื่องในระบบดิจิตอลและการสร้างหนังจากเกม	
* ITGT	553	Visual Design for Games and Interactive Media	3 (3-0-6)
ทสกท	๕๕๓	การออกแบบทัศนศิลป์สำหรับเกมและสื่อเชิงโต้ตอบ	
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ทสกท	๕๙๑	หัวข้อพิเศษทางด้านเทคโนโลยีเกม	

* new course

4) Thesis (12 credits)

			Credits (lecture – practice – self-study)
ITGT	698	Thesis	12 (0-36-0)
ทสกท	๖๙๘	วิทยานิพนธ์	

5) Independent Study (6 credits)

			Credits (lecture – practice – self-study)
* ITGT	696	Independent Study	6 (0-18-0)
ทสกท	๖๙๖	การค้นคว้าอิสระ	

* new course

3.1.4 Research Project (for Plan 1 / Plan 2)

(1) Research project in Artificial Intelligence
(2) Research project in Virtual Reality
(3) Research project in Computer Vision
(4) Research project in Gamification
(5) Research project in Animation
(6) Research project in Graphics
(7) Research project in Online Games
(8) Research project in Mobile Application

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.
- กท (GT) is the abbreviation of the Game Technology and Gamification major.
- 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 1.2 Academic (Course work and research)

Year	Semester	
0	**Summer**	
	Prerequisite Courses *	
	ITCS 503 Design and Analysis of Algorithms	3 (3-0-6)
	ITCS 504 Computer System Organization and Architecture	3 (3-0-6)
	ITCS 507 Mathematical Foundations for Computer Science	3 (3-0-6)
1	**Semester 1**	
	ITGT 511 Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)
	ITGT 521 3D Graphics and Rendering	3 (3-0-6)
	ITGT 531 Gamification	3 (3-0-6)
	ITGT 551 Game Production Management and Marketplace	2 (2-0-4)
	ITGT 583 Research Methodology and Seminar in Game Technology	1 (1-0-2)
	Total 12 credits	
	Semester 2	
	ITGT 532 Game Design and Development	3 (3-0-6)
	Elective Courses not less than	9 credits
	Total 12 credits	
	Summer	
	ITGT 698 Thesis (Topic Selection and Literature Review)	4 (0-12-0)
	Total 4 credits	
2	**Semester 1**	
	ITGT 698 Thesis (Proposal, Design, and Implementation)	4 (0-12-0)
	Total 4 credits	
	Semester 2	
	ITGT 698 Thesis (Evaluation, Manuscript Writing, and Defense)	4 (0-12-0)
	Total 4 credits	

* The program will open courses to students by the program committee discretion.

The maximum credits per student are 6 credits.

Plan 2 Profession

Year	Semester	
0	**Summer**	
	Prerequisite Courses *	
	ITCS 503 Design and Analysis of Algorithms	3 (3-0-6)
	ITCS 504 Computer System Organization and Architecture	3 (3-0-6)
	ITCS 507 Mathematical Foundations for Computer Science	3 (3-0-6)
1	**Semester 1**	
	ITGT 511 Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)
	ITGT 521 3D Graphics and Rendering	3 (3-0-6)
	ITGT 531 Gamification	3 (3-0-6)
	ITGT 551 Game Production Management and Marketplace	2 (2-0-4)
	ITGT 583 Research Methodology and Seminar in Game Technology	1 (1-0-2)
	Total 12 credits	
	Semester 2	
	ITGT 532 Game Design and Development	3 (3-0-6)
	Elective Courses not less than	9 credits
	Total 12 credits	
	Summer	
	ITGT 696 Independent Study	2 (0-6-0)
	Elective Courses not less than	6 credits
	Comprehensive examination	
	Total 8 credits	
2	**Semester 1**	
	ITGT 696 Independent Study	2 (0-6-0)
	Total 2 credits	
	Semester 2	
	ITGT 696 Independent Study	2 (0-6-0)
	Total 2 credits	

* The program will open courses to students by the program committee discretion. The maximum credits per student are 6 credits.

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. 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
3.	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
4.	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
5.	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
6.	x-xxxx-xxxxx-xx-x Assistant Professor Dr. Preecha Tangworakitthaworn	Ph.D. (Computer Science) University of Southampton, UK. : 2014 M.Sc. (Computer Science) Mahidol University : 2006 B.Sc. (Computer Science) Mahidol University : 1998	Faculty of Information and Communication Technology
7.	x-xxxx-xxxxx-xx-x Lecturer Dr. Akara Supratak	Ph.D. (Computing Research) Imperial College London, UK. : 2018 M.Sc. (Computing) Imperial College London, UK. : 2013 B.Sc. (Information and Communication Technology) Mahidol University : 2011	Faculty of Information and Communication Technology
8.	x-xxxx-xxxxx-xx-x Lecturer Dr. Chaiyong Ragkhitwetsagul	Ph.D. (Computer Science) University College London, UK. : 2018 M.S. (Information Technology) Carnegie Mellon University, USA : 2008 B.Eng. (Computer Engineering) Kasetsart University : 2005	Faculty of Information and Communication Technology
9.	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

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
10.	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
11.	x-xxxx-xxxxx-xx-x Lecturer Dr. Petch Sajjacholapunt	Ph.D. (Computer Science) The University of Warwick, UK : 2016 M.Phil. (Computer Science with IT Management) The University of Manchester, UK. : 2012 M.Sc. (Computer Science) The University of Manchester, UK : 2010 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2007	Faculty of Information and Communication Technology
12.	x-xxxx-xxxxx-xx-x Lecturer Dr. Pisit Praiwattana	Ph.D. (Computer Science) Liverpool John Moores University, UK. : 2018 M.S. (Computer Science) University of Southern California, USA : 2012 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2009	Faculty of Information and Communication Technology
13.	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
14.	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
15.	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
16.	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 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
2.	x-xxxx-xxxxx-xx-x Lecturer Dr. Pawitra Liamruk	Ph.D. (Computer Science) University of Bath, UK. : 2015 M.Sc. (Software Systems Engineering) University College London, UK. : 2010 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2008	Faculty of Information and Communication Technology
3.	x-xxxx-xxxxx-xx-x Lecturer Dr. Pilailuck Panphattarasap	Ph.D. (Computer Science) University of Bristol, UK. : 2019 M.Sc. (Computer Science) University of Bristol, UK. : 2014 B.Sc. (Information and Communication Technology) 1st Class Honor Mahidol University : 2011	Faculty of Information and Communication Technology

3.2.3 Part 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. Pisal Setthawong	Ph.D. (Computer Science) King Mongkut's University of Technology Thonburi : 2016 M.Sc. (Computer Science) Assumption University : 2005 B.Sc. (Computer Science) Assumption University : 2001	PIGSSS GAMES Co. Ltd.

No.	Identification Card Number Academic position - Name - Surname	Degree (Field of Study) University: Year of graduate	Department
2.	x-xxxx-xxxxx-xx-x Lecturer Dr. Chatchai Wangwiwattana	Ph.D. (Computer Science) Southern Methodist University, USA : 2017 MIT (Digital Game Development) The Guildhall at Southern Methodist University, USA : 2013 B.Sc. (Computer Science) University of the Thai Chamber of Commerce : 2008	University of the Thai Chamber of Commerce
3.	x-xxxx-xxxxx-xx-x Lecturer Dr. Pattanapon Rhienmora	Ph.D. (Computer Science) Asian Institute of Technology : 2012 M.Eng. (Computer Science) Asian Institute of Technology : 2004 B.Eng. (Computer Engineering) Kasetsart University : 2000	Bangkok University
4.	x-xxxx-xxxxx-xx-x Lecturer Saranpat Sereewiwattana	M.Sc. (Innovation Management) Chulalongkorn University : 2010 B.B.A. (Managment) Prince of Songkla University : 2006	Revolution Industry Co. Ltd.

4. Details of Practicum

None

5. Thesis requirement

5.1 Thesis requirement (Plan 1.2 Acaemic Course work and resesarch)

Thesis topics are related to application of techniques in game technology and gamification according to the list of research projects in 3.1.4. The curriculum requires one student to conduct one thesis and submit the thesis within the submission deadline as the format designated by the curriculum.

5.1.1 Short Description

Students can do the Master's thesis in game technology and gamification areas that they are interested in by applying knowledge and theory to conduct useful research projects. After graduation, students can apply their knowledge for their further study in higher education and their future work. The thesis has obvious scope and timeline so that the students can complete their theses within the submission deadline.

5.1.2 Standard Learning Outcomes

Students will be able to work as a team, specialize in programming related to game, use appropriate tools for programming, analyze and understand analytical methodology. Thesis will be used as a role model for further development, or used as a research paper. Students will have writing and English presentation skills.

5.1.3 Thesis duration:

From the summer semester of the first year of study onwards.

5.1.4 Number of credits:

12 credits

5.1.5 Preparation

The Faculty of ICT and the Faculty of Graduate Studies provide thesis information via the websites which are continually revised and up-to-date. The information consists of thesis topics recommended by thesis advisors, advisory time, progress report submission, proposal defense schedule, thesis examples, and completed thesis.

5.1.6 Evaluation process

Thesis progress will be evaluated by progress report within the timeline as well as research result presentation. The said thesis must be able to proceed practically, especially the main program. The thesis defense will be evaluated by the thesis defense committee which consists of at least 3 instructors. Part or all of the student's thesis must be published in an academic journal, or presented at a national or international conference with published proceedings, according to the Faculty of Graduate Studies' announcement. In addition, English instructors can give advice and revise English writing for students.

5.2 Independent study requirements (Plan 2 Profession)

Independent study topics are related to application of techniques in game technology and gamification according to the list of research projects in 3.1.4. The curriculum requires one student to conduct one independent study and submit the independent study within the submission deadline as the format designated by the curriculum.

5.2.1 Short Description

Students can do the Master's independent study in game technology and gamification areas that they are interested in by applying knowledge and theory to conduct useful research project. After graduation, students can apply their knowledge for their further study in higher education and their future work. The independent study has an obvious scope and timeline so that the students can complete their independent study within the submission deadline.

5.2.2 Standard Learning Outcomes

Students will be able to work as a team, specialize in programming related to game, use appropriate tools for programming, analyze and understand analytical methodology. Independent study will be used as a role model for further development, or used as a research paper. Students will have writing and English presentation skills.

5.2.3 Independent study duration

From the summer semester of the first year of study onwards

5.2.4 Number of credits: 6 credits

5.2.5 Preparation

The Faculty of ICT and the Faculty of Graduate Studies provide independent study information via the websites which are continually revised and up-to-date. The information consists of independent study topics recommended by thesis advisors, advisory time, progress report submission, proposal defense schedule, independent study examples, and completed independent study.

5.2.6 Evaluation process

Independent study progress will be evaluated by progress report within the timeline as well as research result presentation. The said independent study must be able to proceed practically, especially the main program. The independent study defense will be evaluated by the independent study defense committee which consists of at least 3 instructors. Part or all of the student's independent study must be published in an academic journal, or presented at a national or international conference with published proceedings, according to the Faculty of Graduate Studies' announcement. In addition, English instructors can give advice and revise English writing for students.

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
Have Mahidol University Core Values M – Mastery A – Altruism H – Harmony I – Integrity D – Determination O – Originality L – Leadership	1. Encourage students to participate in outside classroom activities organized by Mahidol University in order to cultivate Mahidol University Core Values. 2. Encourage students to participate in group activities, exchange opinions, attend activities enhancing leadership skills, understand other people, sacrifice themselves for others, volunteer to work for public activities, have altruistic behavior, and harmonize with other people.
Enhance working and social life skills (Soft Skills).	Encourage students to attend the professional skill development training organized by the faculty/university at least 4 skills as follows: 1. Language and communication skills 2. Leaderships and management skills 3. Creative and innovative skills 4. Information technology skills
Be creative, outstanding, and able to apply acquired knowledge to solve problems efficiently.	Encourage students to participate in innovation contests in game technology, such as the National Software Contest (NSC).
Be able to exchange opinions, analyze, criticize other people work reasonably, listen to other people's opinions and improve their own work.	Encourage students to attend an academic conference and innovation contest in game technology.
Be able to communicate well in English.	Encourage students to participate in English training courses organized by the Faculty of Graduate Studies, the Faculty of Information and Communication Technology, or Mahidol University.
Have a code of conduct in game production as well as consider the impact of society and culture.	Encourage students to attend training courses about research ethics (IRB) organized by the Faculty of Graduate Studies, the Faculty of Information and Communication Technology, or Mahidol University.

2. Development of Learning Outcome in Each Objective

Expected Outcome	Teaching Strategies	Evaluation Strategies
1. Knowledge Graduates are expected to possess the following knowledge. 1.1 Principles, theories, algorithms, and mathematics underlying game technology and gamification. 1.2 Knowledge of tools for development in game technology and gamification. 1.3 Game industry, production and marketing. 1.4 Research methodology.	The strategies used to instill this knowledge include: - Lectures and case studies - Class discussion, - Assignments, and projects (including thesis/ independent study).	The strategies used to assess the obtained knowledge involve evaluation of the student's work including: Assignments, projects, class presentations, and examinations.
2. Skills Graduates are expected to possess the following skills. 2.1 Analysis of problems in game technology and gamification in order to design a solution. 2.2 Computer programming to implement the designed solution. 2.3 Testing of the implemented solution to ensure its correctness and efficiency. 2.4 Conducting research in game technology and gamification.	The strategies used to instill these skills include: - Programming assignments/projects both individual and in group that emphasize problem solving. - Research work including thesis and independent study.	The strategies used to assess the obtained skills involve evaluation of the student's work including: Assignments, projects, and examinations.

Expected Outcome	Teaching Strategies	Evaluation Strategies
3. Ethics Graduates are expected to possess the following qualities. 3.1 Professional integrity. 3.2 Discipline including punctuality and adhering to professional code of conduct, rules and regulations. 3.3 Respect the rights and opinions of others, as well as not violating the rights and intellectual property of others.	- Lectures with case studies involving ethics. - Enforce discipline and integrity in the classroom and students' work. - Enforce proper credits given to any external sources of information utilized in students' work.	- Assessment of in-class behavior. - Assessment of the academic honesty and any violations of intellectual property in students' work.
4. Character Graduates are expected to possess the following characteristics. 4.1 Proficiency in information technology. 4.2 Can effectively and confidently communicate in English. 4.3 Can work as a team and be responsible for their own actions and for their assigned duties. 4.4 Demonstrate leadership as well as the ability to follow. 4.5 Demonstrate creativity.	- Assign students to present their work and participate in class discussion using English. - Assign students to make efficient use of information technology both in written and oral presentations. - Assign students to work in groups with a clear role and responsibility. - Give assignments and projects that exercise creativity.	- Assessment of the English and technology usage in students' work and discussion. - Evaluation of students' contributions in group projects considering the opinions of the instructor and peers. - Assessment of the creative aspect of students' work.

5 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 Course evaluation by students.

2.1.2 Grade and course evaluation reported to the Program Chair every semester.

2.1.3 Comprehensive result report of the students who pass the criteria standard.

2.1.4 Progress report of students' theses.

2.1.5 Student's PLOs achievement assessment are evaluated at the end of the years 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 status of graduates, evaluated by alumni in terms of jobs seeking period, and opinions on the knowledge and skills that graduates used in game technology and gamification careers.

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

2.2.3 Survey of career advancement of graduates.

2.2.4 Survey from graduates about useful knowledge they gained from the curriculum for their professions in terms of preparedness and knowledge from their fields of study, as well as their opinions for curriculum improvement.

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

2.2.6 Survey of PLOs achievement assessment with the follow-up alumni interview section.

3. Graduation Requirement

3.1 Plan 1.2 Academic (Course work and research)

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

3.1.2 Propose thesis to the committee appointed by the Faculty of Graduate Studies and to the public and pass oral thesis examination as the final stage.

3.1.3 The complete or part of the thesis has to be published as a Research article; accepted as an innovation, acknowledged as a creative product, or accepted as an academic article that can be searched.

3.1.4 Other requirements shall follow those that specified by the Faculty of Graduate Studies.

3.2 Plan 2 Profession

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

3.2.2 Students must pass the Comprehensive Examination following Regulations of Mahidol University on Graduate Studies.

3.2.3 Students must present their Independent Study and pass the defense examination by following Regulations of Mahidol University on Faculty Graduate Studies, and the examination is an open system for those interested to listen.

3.2.4 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 Have an orientation for new lecturers on how to be professional lecturers and provide information about the policies of Mahidol University and the Faculty.

1.2 Support new lecturers to actively expand their knowledge and experiences in teaching and research in Game Technology and Gamification.

1.3 Arrange the teaching load in which new lecturers will be co-teaching with experienced lecturers in a particular course.

2. Skill and Knowledge Development for New Faculty Members

2.1 Skills Development in Teaching and Evaluation.

Provide workshops to develop skills on teaching and learning, measurement, and evaluation methods for enhancing lecturers' skills development.

2.2 Other Academic and Professional Skill Development.

2.2.1 Encourage lecturers to participate in academic services such as developing a service and passing on their knowledge to the society.

2.2.2 Encourage and support lecturers to conduct more research in Game Technology and Gamification.

2.2.3 Encourage and support lecturers to use research results in their teaching in order to improve teaching and learning as well as their expertise.

2.2.4 1.2.4 Encourage and support lecturers to participate in several events such as training courses, academic services, conferences both national and international levels.

Section 7 Quality Assurance

1. Regulatory Standard

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

- The Permanent Secretary, Ministry of Higher Education, Science, Research 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 quality of the program is managed, assessed and monitored according to the Permanent Secretary, Ministry of Higher Education, Science, Research 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 Higher Education, Science, Research and Innovation. Each year, the program submits an annual program evaluation report, Programme Report, to Mahidol University and the 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 Programme Specification documents (this document) in accordance with the announcements of the Commission of Higher Education Standards.

1.3.3. The program produces Course Specification and Field Experience Specification 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 Course Report and Field Experience Report after the end of each semester.

1.3.5. The program submits the reports describing the performance evaluation of all courses and the entire program in the form of Program Report after the end of each academic year.

2. Graduates

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

- The Permanent Secretary, Ministry of Higher Education, Science, Research 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 Ministry of Higher Education, Science, Research and Innovation (MHESI)'s Thai Qualifications Framework for Higher Education B.E. 2565, 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

Important processes related to students are carried out along with the supply chain according to the implementation of the EdPEx and AUN-QA framework as follows:

- Student Admissions; student admission and public relations are operated by the Faculty of Graduate Studies together with the student admissions committee of the curriculum.
- Student Orientation; the program together with the Faculty of Graduate Studies provide an orientation activity for students before studying.
- Student Engagement; the program assigns an academic advisor and support staff to help each student. Students are invited to attend the Faculty activities, such as extracurricular activities, sports activities, academic activities, etc.
- Counseling Service; the program assigns an academic advisor to help student related to academic,
- Internal Quality Assurance; the procedures are carried out to achieve the Key Performance Indicator for efficient and effective evaluation according to the criteria of the Internal Quality Assurance B.E. 2557, to the Ministry of Higher Education, Science, Research and Innovation

(MHESI)'s Thai Qualifications Framework for Higher Education, Baldrige's Educational Performance Excellence (EdPEx) and ASEAN University Network-Quality Assurance (AUN-QA).

4. Academic Staff

The program defines the processes related to academic staff as follows:

a. Intake and selection of academic staff

The program ensures that there is the systematic selection and recruitment of academic staff with clear policies and criteria. The academic staff must have the qualifications in accordance with

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

b. The development of academic staff

Training and development for new and current academic staff are systematically identified, and appropriate training and development activities are promoted to fulfill the identified needs. The faculty members are encouraged to participate in various activities such as the academic staff development project organized by Mahidol University and the Faculty of ICT, academic training, and conferences.

c. Support for the Production of Academic Outputs

Mahidol University, the Faculty of Graduate Studies, and the Faculty of ICT support research activities conducted by academic staff. Mahidol University encourages the enhancement of academic positions and research funding. The Faculty of Graduate Studies, and the Faculty of ICT support the academic presentations.

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 inviting visiting faculty to provide knowledge and experiences to students. Therefore, the program invites experts and guest speakers from public and private sectors to teach the students in class. The visiting faculty should have hands-on experiences related to the course or lecture with an educational background not lower than the Master's degree.

Internal Quality Assurance; the procedures are carried out to achieve the Key Performance Indicator for efficient and effective evaluation according to the criteria of the Internal Quality Assurance B.E. 2557, to the Ministry of Higher Education, Science, Research and Innovation (MHESI)'s Thai Qualifications Framework for Higher Education, Baldrige's Educational Performance Excellence (EdPEx) and ASEAN University Network-Quality Assurance (AUN-QA).

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

5.1. Curriculum

The Faculty of ICT designs the curriculum based on the Outcome Based Education (OBE) principles. It also 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 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 class schedule, examination schedule, and course instructors, both for required courses and elective courses. The elective courses which will be offered to the students can be requested to the program director for consideration. Instructors who have knowledge and capability in the particular subject will use the designed teaching method to teach the students in order to ensure students achieve the expected learning outcomes. The program regularly surveys the students' satisfaction towards the teaching and learning of every subject.

5.3. Learner's Evaluation

The Program Director oversees the evaluation of the students' performance. Course instructors evaluate students' performance as the criteria designed by the program. Students' academic advisors and the program committee regularly review students' performance and advise students to achieve expected learning outcomes and graduate within the plan of study. The program surveys the employer's satisfaction towards the students one year after graduation.

6. Learning Support

The Faculty of ICT provides books, textbooks, and e-Databases by Mahidol University Library and Knowledge Center. There are English textbooks in computer science and related fields adequately, as well as a number of databases of academic articles on the internet. In addition, the Faculty of ICT also offers sufficient learning and research support facilities, such as laboratories, computers in classrooms, projectors, computers and equipment for research purposes, servers, and communication networks.

The Faculty of ICT allocates an annual budget for purchasing English textbooks in computer science, teaching and learning media, audio-visual tools, and computer equipment to support teaching and learning as well as create an appropriate environment for students' self-learning. The Faculty of ICT surveys the students' satisfaction towards the learning supports.

7. Key Performance Indicators

The Master of Science in Game Technology and Gamification Program (International Program - Special Program) uses the key performance indicators numbers 1-5 which are the compulsory performance indicators that must meet or exceed expectations for at least two consecutive years, and the key performance indicators of at least 80% of all performance indicators that must meet expectations or exceed each year. The Key Performance Indicators are as follows:

Key Performance Indicators	Academic Year				
	2024	2025	2026	2027	2028
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 Programme specification, which is associated with the Thai Qualifications Framework.	✓	✓	✓	✓	✓
3. The program has course specifications and field experience specifications (if any) according to Course Specification and Field experience specification before the beginning of each trimester.	✓	✓	✓	✓	✓
4. Instructors must produce course reports and file experience reports (if any) according to Course Report and Field Experience Report within 30 days after the end of each semester.	✓	✓	✓	✓	✓

Key Performance Indicators	Academic Year				
	2024	2025	2026	2027	2028
5. Instructors must produce program reports according to Programme Report within 60 days after the end of each academic year.	✓	✓	✓	✓	✓
6. Instructors revise the grading of students according to the learning standards indicated in Course Specification and Field experience specification (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 Programme Report 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.	–	✓	✓	✓	✓
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 The lecturers are required to record their teaching in each semester for teaching development.

1.1.2 In the teaching training course or seminar, the lecturers are required to evaluate the training's outcomes. The knowledge application on teaching and learning will be followed up.

1.1.3 There is an analysis of students' course evaluation.

1.1.4 The teaching and learning development plan is designated as a topic for discussing in the program committee meeting or annual faculty staff seminar.

1.2 Evaluation of Instructors' Skills in Using Teaching Strategies

1.2.1 Analysis of students' evaluation of courses towards instructors' skills, punctuality, course objectives' introduction, course evaluation criteria clarification, and teaching medias.

1.2.2 Teaching observation by Program Director or Teaching Skills Evaluation Committee appointed by the Faculty of ICT.

2. Overall Evaluation of the Curriculum

2. 1 Analysis of the survey on graduates for following up graduates' knowledge, work responsibilities, and weaknesses.

2.2 Employers' satisfaction survey towards the graduates.

2.3 Program committee meeting or seminar with experts and employers discussing on program content for curriculum improvement that meets the needs of society and keep up with the change of the world.

2. 4 Collecting information for program development as well as teaching and learning improvement in overall picture and in each particular course.

3. Evaluation of Curriculum Implementation in Accordance with the Curriculum

Education Quality Evaluation is made annually according to the key performance indicators mentioned in Section 7 No. 7 by at least 3 committee members or internal assurance committee as following criteria:

"Fair" means the first 10 key performance indicators are not achieved.

"Good" means the first 10 key performance indicators are achieved.

"Excellent" means the program achieves all key performance indicators.

4. Review of the Evaluation and Plans for Improvement

4.1 There is an analysis and report of the students' course evaluation in every semester in which the course instructors will be informed in order to develop their teaching and learning. The Program Chair can use this information for the instructors' development plan.

4.2 There is an analysis and a report of teaching evaluation to the program committee. This information is used for developing students' knowledge and qualifications required by the program, as well as planning for new student admissions.

4.3 There is a program committee meeting to monitor and solve the teaching and learning problems timely.

4.4 There is an educational committee of the Faculty of ICT who is in charge of the educational plan.

APPENDIX A

Course Description

Appendix A
Course Description

1. Prerequisite Courses

Credits (lecture – practice – self-study)

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

ทสคพ ๕๐๓ การออกแบบและวิเคราะห์ขั้นตอนวิธี

Basic data structure; Sets; Arrays; Strings; Queues; Stacks; Trees; Graphs; 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

โครงสร้างข้อมูลพื้นฐาน เซท แถวลำดับ สายอักขระ คิว กองซ้อน ต้นไม้กราฟ การออกแบบและการประเมินผลของขั้นตอนวิธีการค้นหา การจัดเรียงลำดับ การทำแฮช ขั้นตอนวิธีเชิงการใช้กำลังบังคับ ขั้นตอนวิธีเชิงตะกละ การแบ่งและชนะ การย้อนถอยหลัง วิทยาการศึกษาสำนึก ขั้นตอนวิธีเชิงกราฟ ขั้นตอนวิธีสำหรับการจับคู่สายอักขระ ขั้นตอนวิธีเชิงเลข ขั้นตอนวิธีเชิงเรขาคณิต ขั้นตอนวิธีเชิงขนาน

ITCS 504 Computer System Organization and Architecture 3 (3-0-6)

ทสคพ ๕๐๔ สถาปัตยกรรมและการจัดระบบคอมพิวเตอร์

Organization and architecture of computer systems; Basic components of computers; Memory system organization; Memory components; Memory hierarchy and interleaving; Cache memory; Virtual memory; Input and Output systems; Storage systems; Processor design; Multiprocessors; Graphic processing units; Parallel architecture

สถาปัตยกรรมและการจัดระบบคอมพิวเตอร์ ส่วนประกอบพื้นฐานของเครื่องคอมพิวเตอร์การจัดระบบหน่วยความจำ องค์ประกอบหน่วยความจำ การจัดลำดับชั้นและการแทรกสลับของหน่วยความจำ หน่วยความจำแคช หน่วยความจำเสมือน ระบบการรับเข้าและส่งออกข้อมูล ระบบการเก็บข้อมูล การออกแบบหน่วยประมวลผล หน่วยประมวลผลหลายหน่วย หน่วยประมวลผลข้อมูลกราฟิกส์สถาปัตยกรรมเชิงขนาน

ITCS 507 Mathematical Foundations for Computer Science 3 (3-0-6)

ทสคพ ๕๐๗ พื้นฐานทางคณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์

Sets; Functions; Relations; Basic logic and Boolean algebra; Proof techniques; Mathematical induction; Well orderings; Basic counting; Permutations and combinations; Recurrence relations; Graphs and trees; Finite state machines and regular expressions; Deterministic algorithms; Randomized algorithms

เซ็ท ฟังก์ชัน ความสัมพันธ์ ตรรกะพื้นฐานและพีชคณิตแบบบูล เทคนิคทางการพิสูจน์ อุปนัยเชิงคณิตศาสตร์ การจัดลำดับอย่างดี หลักการพื้นฐานของการนับ การสลับลำดับกันและการรวมกันโดยไม่คำนึงถึงลำดับ ความสัมพันธ์เชิงปรากฏฐา โครงสร้างกราฟและต้นไม้ เครื่องสถานะจำกัดและนิพจน์แบบปกติ ขั้นตอนวิธีเชิงกำหนด ขั้นตอนวิธีเชิงสุ่ม

2. Required Courses

Credits (lecture – practice – self-study)

ITGT 511 Algorithms and Artificial Intelligence for Computer Games 3 (3-0-6)

ทสกท ๕๑๑ ขั้นตอนวิธีและปัญญาประดิษฐ์สำหรับเกมคอมพิวเตอร์

Game world creation; Synthetic players; Random numbers; Tournaments; Game trees; Path finding; Decision making; Modeling uncertainty

การสร้างโลกของเกม ผู้เล่นสังเคราะห์ตัวเลขสุ่ม การแข่งขัน ต้นไม้ของเกม การค้นหาเส้นทาง การตัดสินใจ การจำลองความไม่แน่นอน

ITGT 521 3D Graphics and Rendering 3 (3-0-6)

ทสกท ๕๒๑ กราฟิกส์และการสร้างภาพ 3 มิติ

Vectors and matrices; Graphics hardware technology; Color models; 2D scan conversion; Geometric models; Transformations in 2D and 3D; 3D viewing; Lighting and shading; Visible surface determination; Global illumination; Particle systems; 3D curves and surfaces; Graphics programming

เวกเตอร์และเมตริกซ์ เทคโนโลยีทางฮาร์ดแวร์ของกราฟิกส์ แบบจำลองสี การแปลงรูป 2 มิติ แบบจำลองเรขาคณิต การแปลงวัตถุใน 2 มิติและ 3 มิติ การมองภาพใน 3 มิติ แสงและแถบสี การคำนวณพื้นผิวที่ตามองเห็น การคำนวณแสงตกกระทบแบบรวม ระบบอนุภาค เส้นโค้งและพื้นผิวใน 3 มิติ การเขียนโปรแกรมกราฟิกส์

ITGT 531 Gamification 3 (3-0-6)

ทสกท ๕๓๑ เกมมิฟิเคชัน

Gamification definition; Games, game thinking, game elements; Psychology and motivation; Different types of gamification; Gamification design; Limitations, concerns, and danger from gamification

คำจำกัดความของเกมมิฟิเคชัน เกม ความคิดอ่านเกี่ยวกับเกม ส่วนประกอบของเกม จิตวิทยาและแรงจูงใจ ประเภทของเกมมิฟิเคชัน การออกแบบเกมมิฟิเคชัน ข้อจำกัด ประเด็น และอันตรายจากเกมมิฟิเคชัน

Credits (lecture – practice – self-study)

ITGT 532 Game Design and Development 3 (3-0-6)

ทสกท ๕๓๒ การออกแบบและการพัฒนาเกม

Design, implementation, and testing of video games with an emphasis on 3D games; Game development frameworks; Design patterns; Graphics, user input, animation, sound, music, and artificial intelligence; Ethics of game design and development

การออกแบบ การดำเนินการ และการทดสอบวิดีโอเกมโดยเน้นที่เกม 3 มิติ เค้าโครงของการพัฒนาเกม แบบฉบับของการออกแบบ กราฟิกส์ ข้อมูลเข้าจากผู้ใช้ การทำภาพเคลื่อนไหว เสียง ดนตรี และปัญญาประดิษฐ์ จริยธรรมในการออกแบบและพัฒนาเกม

ITGT 551 Game Production Management and Marketplace 2 (2-0-4)

ทสกท ๕๕๑ หลักการตลาดและการจัดการการผลิตเกม

Games industry and professional; Games history and evolution; Popular games; Games technology; Game marketing; Lifecycle of game development; Issues on legal, financial, social impact and professional practices; Ethics in game production and marketing

อุตสาหกรรมและอาชีพด้านเกม ประวัติและความเป็นมาของเกม เกมที่นิยม เทคโนโลยีเกม การตลาดของเกม วงจรชีวิตของการพัฒนาเกม ประเด็นทางกฎหมาย การเงิน ผลกระทบต่อสังคมและการปฏิบัติอย่างมืออาชีพ จริยธรรมในการผลิตเกมและการทำการตลาด

ITGT 583 Research Methodology and Seminar in Game Technology 1 (1-0-2)

ทสกท ๕๘๓ วิทยาระเบียบวิธีวิจัยและสัมมนาทางด้านเทคโนโลยีเกม

Research development process and methodology; Research design and planning; Data gathering; Data management and analysis; Literature review; Presentation and analysis of current research topics in game technology; Summarization of novel ideas; Research proposal; Research analysis; Qualitative and quantitative research methodology; Public speaking techniques; Conclusion and Research reporting writing in game technology; Ethics in research; Academic plagiarism; Seminar in game technology

กระบวนการพัฒนางานวิจัยและระเบียบวิธีวิจัย การวางแผนและออกแบบงานวิจัย การรวบรวมข้อมูล การจัดการและวิเคราะห์ข้อมูล การทบทวนวรรณกรรม การนำเสนอและวิเคราะห์หัวข้องานวิจัยด้านเทคโนโลยีเกมปัจจุบัน การสรุปรวมแนวคิดใหม่ๆ โครงร่างงานวิจัย การวิเคราะห์งานวิจัย วิทยาระเบียบวิธีวิจัยเชิงปริมาณและเชิงคุณภาพ เทคนิคการพูดในที่สาธารณะ การเขียนสรุปและรายงาน งานวิจัยทางด้านเทคโนโลยีเกม จริยธรรมในการวิจัย การโจรกรรมงานวิชาการ สัมมนาทางด้านเทคโนโลยีเกม

3. Elective Courses

Credits (lecture – practice – self-study)

ITGT 522 Virtual Reality 3 (3-0-6)

ทสกท ๕๒๒ ความจริงเสมือน

Virtual reality applications; Visual, audio, and haptic displays; Input technology; 3D interaction techniques; Programming and toolkits; Human factors

การประยุกต์ความจริงเสมือน การแสดงผลทางภาพ เสียง และสัมผัส เทคโนโลยีการนำข้อมูลเข้า เทคนิคการปฏิสัมพันธ์เชิง 3 มิติ การเขียนโปรแกรมและเครื่องมือ ปัจจัยมนุษย์

ITGT 523 Computer Vision 3 (3-0-6)

ทสกท ๕๒๓ คอมพิวเตอร์วิทัศน์

Information extraction from images and videos; Image representations; Frequency analysis; Texture models; Image segmentation; Object detection; Visual motion analysis; Motion modeling and tracking; Object and scene recognition

การสกัดข้อมูลจากภาพและวีดีโอ รูปแบบการแทนภาพ การวิเคราะห์ความถี่ โมเดลพื้นผิว การแยกส่วนภาพ การตรวจจับวัตถุ การวิเคราะห์การเคลื่อนไหว โมเดลและการติดตามการเคลื่อนไหว การจดจำวัตถุและฉาก

ITGT 524 Advanced Animation for Computer Games 3 (3-0-6)

ทสกท ๕๒๔ การทำภาพเคลื่อนไหวสำหรับเกมคอมพิวเตอร์ขั้นสูง

Concepts and theories in computer animation; Concepts and theories in lighting and image processing; Key-frame animation; Camera animation; Scripting system; Motion capture; Procedural animation; Deformation; Guidelines for presenting through story boards; Applications of 3D program; Object model formation; Object crafting in different granularities; Character animation; Material and surface setting; Surface covering or touching on models; Rendering; Simple scene formation and composite

แนวคิดและทฤษฎีของการทำภาพเคลื่อนไหวด้วยคอมพิวเตอร์ หลักการและทฤษฎีของการจัดแสงและประมวลผลภาพ การทำภาพเคลื่อนไหวเชิงกรอบหลัก การทำภาพเคลื่อนไหวเชิงกล้องถ่ายรูป ระบบบทคำสั่ง การจับความเคลื่อนไหว การทำภาพเคลื่อนไหวเชิงกระบวนงาน การแปลงรูปร่าง แนวทางในการนำเสนอผ่านกรอบเรื่องราว การประยุกต์โปรแกรมสามมิติ การขึ้นรูปแบบวัตถุ การแกะสลักวัตถุในความละเอียดหลายระดับ การทำการเคลื่อนไหวตัวละคร การตั้งค่าวัสดุและพื้นผิว การครอบหรือแปะติดพื้นผิวลงบนรูปแบบ การให้แสงและเงา การสร้างภาพแบบง่ายและแบบรวม

ITGT 533 Game Engine Development 3 (3-0-6)

ทสกท ๕๓๓ การพัฒนาเกมเอนจิน

Introduction to game engine; Game engine design; Concepts of graphics and games; Common and different features of game engine technologies; Mechanisms that a game engine has to produce in a game content; Scripting languages in game engines

การแนะนำเกมเอนจิน การออกแบบเกมเอนจิน แนวคิดของภาพและเกม คุณสมบัติที่เหมือนและแตกต่างของเทคโนโลยีเกมเอนจิน กลไกที่เกมเอนจินต้องสามารถผลิตได้ในเนื้อเรื่องของเกม การเขียนภาษาสคริปท์ในเกมเอนจิน

Credits (lecture – practice – self-study)

ITGT 534 Tools for Computer Games 3 (3-0-6)

ทสกท ๕๓๔ เครื่องมือสำหรับเกมคอมพิวเตอร์

Hardware, software, and toolkits used in game development in graphics, audio, video, speech, animation, interface design, and networking

ฮาร์ดแวร์ซอฟต์แวร์และเครื่องมือที่ใช้ในการพัฒนาเกมในด้านกราฟิกส์เสียง วิดีโอ เสียงพูด การทำภาพเคลื่อนไหว การออกแบบส่วนติดต่อกับผู้ใช้และการเชื่อมต่อเครือข่าย

ITGT 541 Multiplayer Online Game Development 3 (3-0-6)

ทสกท ๕๔๑ การพัฒนาเกมออนไลน์ในระบบผู้เล่นหลายคน

Networking game development; Servers; Interactivity design and play characteristics; Deployment of a multiplayer online game; Management and auditing of servers for online games

การพัฒนาเกมในระบบเครือข่าย ระบบแม่ข่าย การออกแบบการโต้ตอบปฏิสัมพันธ์และลักษณะตัวละคร การใช้งานเกมออนไลน์ในระบบผู้เล่นหลายคน การจัดการและตรวจสอบเครื่อง แม่ข่ายสำหรับเกมออนไลน์

ITGT 542 Game Console Technologies and Programming 3 (3-0-6)

ทสกท ๕๔๒ การเขียนโปรแกรมและเทคโนโลยีเกมคอนโซล

Game console architecture; Introduction to programming on game consoles; Tools for developing game consoles; Handling user input from game controllers; Graphics and sound programming; Enhance techniques; Platform independence

สถาปัตยกรรมเกมคอนโซล การแนะนำการเขียนโปรแกรมของเกมคอนโซล เครื่องมือสำหรับพัฒนาเกมคอนโซล การจัดการข้อมูลเข้าจากอุปกรณ์ควบคุมเกม การเขียนโปรแกรมกราฟิกส์และเสียง เทคนิคการเพิ่มประสิทธิภาพของระบบ แพลตฟอร์มที่เป็นอิสระ

ITGT 543 Mobile Game Programming 3 (3-0-6)

ทสกท ๕๔๓ การเขียนโปรแกรมเกมบนอุปกรณ์เคลื่อนที่

Tools for building games on mobile devices; Interface design; User input for mobile devices; Programming for mobile devices; Sound and graphics for mobile platforms

เครื่องมือการสร้างเกมบนอุปกรณ์เคลื่อนที่การออกแบบส่วนติดต่อกับผู้ใช้การนำข้อมูลเข้าสำหรับอุปกรณ์เคลื่อนที่การเขียนโปรแกรมสำหรับอุปกรณ์เคลื่อนที่ เสียงและภาพสำหรับแพลตฟอร์มบนอุปกรณ์เคลื่อนที่

Credits (lecture – practice – self-study)

ITGT 552 Digital Storytelling and Machinima 3 (3-0-6)

ทสกท ๕๕๒ การเล่าเรื่องในระบบดิจิตอลและการสร้างหนังจากเกม

Principles and technologies of storytelling; Influences and impact of story; Game engine for digital storytelling; Introduction to Machinima; Game technologies for Machinima; Machinima production tools; Scripting motion and animation with game engine

หลักการและเทคโนโลยีการเล่าเรื่อง อิทธิพลและผลกระทบของเรื่องราว ระบบการสร้างเกมสำหรับการเล่าเรื่องเชิงดิจิตอล การแนะนำการสร้างหนังจากเกม เทคโนโลยีเกมสำหรับการสร้างหนังจากเกม เครื่องมือการผลิตการสร้างหนังจากเกม การเขียนสคริปท์การเคลื่อนไหวและภาพเคลื่อนไหวด้วยระบบการสร้างเกม

ITGT 553 Visual Design for Games and Interactive Media 3 (3-0-6)

ทสกท ๕๕๓ การออกแบบทัศนศิลป์สำหรับเกมและสื่อเชิงโต้ตอบ

Components of Visual Design by line, shape, space, volume, value, color, texture; Principle of Visual Design by Unity, Gestalt, Hierarchy, Balance, Contrast, Scale, Dominance; Lighting and Colors for game; User Interface and User Experience framework for game application

องค์ประกอบศิลป์พื้นฐานของภาพจากเส้น รูปร่าง พื้นที่ว่าง ปริมาณ แสงและเงา สี พื้นผิว หลักการออกแบบภาพทั่วไปโดยใช้ความเป็นเอกภาพ ภาพรวมองค์ประกอบทั้งหมด การจัดลำดับ ความสมดุล ความแตกต่างขนาด และ ความโดดเด่น หลักการออกแบบแสงสว่างและสีในเกม กรอบความคิดการออกแบบส่วนต่อประสานภาพและประสบการณ์การใช้งาน

ITGT 591 Special Topics in Game Technology 3 (3-0-6)

ทสกท ๕๙๑ หัวข้อพิเศษทางด้านเทคโนโลยีเกม

Recent advanced techniques, trends in game development, and interesting topics in game technology

เทคนิคขั้นสูงใหม่ แนวโน้มของการพัฒนาเกม และหัวข้อที่น่าสนใจทางด้านเทคโนโลยีเกม

4. Thesis

ITGT 698 Thesis 12 (0-36-0)

ทสกท ๖๙๘ วิทยานิพนธ์

Identifying research project title; Submitting research proposal; Conducting research study with concern of ethics; Data collection, analysis, synthesis and critics of research results; Reporting the research results in terms of thesis; Thesis presentation; Publishing the research results in academic printing materials or journal or presenting it in academic conference; Ethics in dissemination of the research results

การกำหนดหัวข้อโครงการวิจัย การเสนอโครงร่างการวิจัย การดำเนินการวิจัยอย่างมีจริยธรรม การรวบรวมข้อมูล การวิเคราะห์สังเคราะห์และวิพากษ์ข้อมูลผลการวิจัย การนำผลการวิจัยมาเรียบเรียงเป็นวิทยานิพนธ์การนำเสนอวิทยานิพนธ์การเผยแพร่ผลงานวิจัยในวารสารหรือสิ่งพิมพ์ทางวิชาการ หรือเสนอต่อที่ประชุมวิชาการ จริยธรรมในการเผยแพร่ผลงานวิจัย

4. Independent Study

Credits (lecture – practice – self-study)

ITGT 696 Independent Study 6 (0-18-0)

ทสกท ๖๙๖ การค้นคว้าอิสระ

Identifying project title; Conducting project with concern of ethics; Data collection, analysis, synthesis and critics of results; Reporting the project results; Project presentation; Ethics in dissemination of the project results

การกำหนดหัวข้อโครงงาน การดำเนินโครงงานอย่างมีจริยธรรม การรวบรวมข้อมูล การวิเคราะห์สังเคราะห์และวิพากษ์ข้อมูลผลลัพธ์ การนำผลลัพธ์ของโครงงานมาเรียบเรียงเป็นรายงาน การนำเสนอโครงงาน จริยธรรมในการเผยแพร่ผลลัพธ์ของโครงงาน

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	Combi C, Facelli JC, **Haddawy P**, Holmes JH, Koch S, Liu H, Meyer J, Peleg M, Pozzi G, Stiglic G, Veltri P, Yang CC. The IHI Rochester report 2022 on healthcare informatics research: resuming after the CoViD-19. Journal of Healthcare Informatics Research May 2023. https://doi.org/10.1007/s41666-023-00126-5.	12/1.0	2023

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Supratak A, **Haddawy P**. Quantifying the impact of data characteristics on the transferability of sleep stage scoring models. Artificial Intelligence in Medicine May 2023;139:102540.	12/1.0	2023
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
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

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
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	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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

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	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

Current Teaching Load

ITGT	697	Thematic Paper	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

Assigned Teaching Load for the Proposed Program

ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

2. 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	**Tuarob S**, Satravisut M, Sangtunchai P, Nunthavanich S, Noraset T. FALCoN: detecting and classifying abusive language in social networks using context features and unlabeled data. Information Processing & Management Jul 2023;60(4):103381.	12/1.0	2023

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Rungbanapan V, Thaipisutikul T, Pongpaichet S, Supratak A, Lin CY, **Tuarob S**. To Dev or to Doc?: predicting college IT students' prominent functions in software teams Using LMS activities and academic profiles. In: the 2022 26th International Computer Science and Engineering Conference (ICSEC); 2022 Dec 21-23; Sakon Nakhon, Thailand; 2022. pp. 105-110.	11/0.4	2022
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	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 Nov 2022;45(11):e14147. 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

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	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
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). https://doi.org/10.1007/s10664-021-09966-4.	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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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	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

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

Current Teaching Load

-

Assigned Teaching Load for the Proposed Program

ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

3. 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	**Kusakunniran W**, Borwarnginn P, Siriapisith T, Karnjanapreechakorn S, Sutassananon K, Tongdee T, Saiviroonporn, P. Detecting COVID-19 in chest X-ray images. International Journal of Electrical and Computer Engineering Jun 2023;13(3):3290–3298.	12/1.0	2023

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Kusakunniran W**, Borwarnginn P, Karnjanapreechakorn S, Thongkanchorn K, Ritthipravat P, Tuakta P, Benjapornlert P. Encoder-decoder network with RMP for tongue segmentation. Medical and Biological Engineering and Computing May 2023;61(5):1193–1207.	12/1.0	2023
Published research work	**Kusakunniran W**, Karnjanapreechakorn S, Siriapisith T, Saiviroonporn P. Fast MRI reconstruction using StrainNet with dual-domain loss on spatial and frequency spaces. Intelligent Systems with Applications May 2023;18:200203.	12/1.0	2023
Published research work	Precharattana M, Sanium S, Pongsanon K, Ritthipravat P, Chuechote S, **Kusakunniran W**. Blended engineering design process learning activities for secondary school students during COVID-19 epidemic: students' learning activities and perception. Education Sciences Feb 2023;13(2):159.	12/1.0	2023
Published research work	**Kusakunniran W**, Saiviroonporn P, Siriapisith T, Tongdee T, Uraiverotchanakorn A, Leesakul S, Thongnarintr P, Kuama A, Yodprom P. Automatic measurement of cardiothoracic ratio in chest x-ray images with ProGAN-generated dataset. Applied Computing and Informatics Apr 2023. doi: https://doi.org/10.1108/ACI-11-2022-0322.	12/1.0	2023

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Aukkapinyo K, Hotta S, **Kusakunniran W**. Manga Face Detection on Various Drawing Styles Using Region Proposals-Based CNN. Science and Technology Asia Mar 2023;28(1):120–135.	12/1.0	2023
Published research work	**Kusakunniran W**, Borwarnginn P, Imaromkul T, Aukkapinyo K, Thongkanchorn K, Wattanadhirach D, Mongkolluksamee S, Thammasudjarit R, Ritthipravat P, Tuakta P, Benjapornlert P. Automated tongue segmentation using deep encoder-decoder model. Multimedia Tools and Applications Mar 2023. doi: https://doi.org/10.1007/s11042-023-15061-1.	12/1.0	2023
Published research work	Sriyuktasuth A, Chuengsaman P, **Kusakunniran W**, Khurat A, Rattana-umpa N. Telehealth service for patients receiving continuous ambulatory peritoneal dialysis: a pilot study. Siriraj Medical Journal Jan 2023;75(1):46–54.	13/0.8	2023
Published research work	Aung ZH, Sanium S, Songsaksuppachok C, **Kusakunniran W**, Precharattana M, Chuechote S, Pongsanon K, Ritthipravat P. Designing a novel teaching platform for AI: A case study in a Thai school context. Journal of Computer Assisted Learning Dec 2022;38(6):1714–1729.	12/1.0	2022
Published research work	Borwarnginn P, Haga JH, **Kusakunniran W**. Predicting river water height using deep learning-based features. ICT Express Dec 2022;8(4):588–594.	12/1.0	2022

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
Published research work	Miao Z, **Kusakunniran W**, Siriapisith T, Saiviroonporn P. Deep learning based technique for classification of abdominal aortic aneurysm (AAA) in CT-scan images. In: the 2022 IEEE Region 10 Conference (TENCON); 2022 Nov 1-4; Hong Kong; 2022. pp. 1-6.	11/0.4	2022
Published research work	Zhang H, **Kusakunniran W**, Siriapisith T, Saiviroonporn P. Brain hemorrhage segmentation in CT scan images using deep learning based approach. In: the 2022 IEEE Region 10 Conference (TENCON); 2022 Nov 1-4; Hong Kong; 2022. pp. 1-5.	11/0.4	2022
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

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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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	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

Current Teaching Load

ITGT	511	Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)
ITGT	523	Computer Vision	3 (3-0-6)
ITGT	531	Gamification	3 (3-0-6)
ITGT	582	Research Methodology in Game Technology	1 (1-0-2)
ITGT	697	Thematic Paper	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

Assigned Teaching Load for the Proposed Program

ITGT	511	Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)
ITGT	523	Computer Vision	3 (3-0-6)
ITGT	531	Gamification	3 (3-0-6)
ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

4. 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	Sangaroonsilp P, Dam HK, **Choetkiertikul M**, Ragkhitwetsagul C, Ghose A. A taxonomy for mining and classifying privacy requirements in issue reports. Information and Software Technology May 2023;157:107162.	12/1.0	2023
Published research work	Ragkhitwetsagul C, **Choetkiertikul M**, Hoonlor A, Prachyabrued M. Virtual reality for software engineering presentations. In: the 2022 29th Asia-Pacific Software Engineering Conference (APSEC); 2022 Dec 6-9; Japan; 2022. pp. 507-516.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Jarukitpipat V, Chhun K, Wanprasert W, Ragkhitwetsagul C, **Choetkiertikul M**, Sunetnanta T, Kula RG, Chinthanet B, Ishio T, Matsumoto K. V-Achilles: an interactive visualization of transitive security vulnerabilities. In: the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2022 Oct 10-14; Michigan, United States; 2022. pp. 1-4.	11/0.4	2022
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	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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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). https://doi.org/10.1007/s10664-021-09966-4.	12/1.0	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	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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

5. 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	Ragkhitwetsagul C, Choetkiertikul M, Hoonlor A, **Prachyabrued M**. Virtual reality for software engineering presentations. In: the 2022 29th Asia-Pacific Software Engineering Conference (APSEC); 2022 Dec 6-9; Japan; 2022. pp. 507-516.	11/0.4	2022

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
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

Current Teaching Load

ITGT	521	3D Graphics and Rendering	3 (3-0-6)
ITGT	522	Virtual Reality	3 (3-0-6)
ITGT	697	Thematic Paper	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

Assigned Teaching Load for the Proposed Program

ITGT	521	3D Graphics and Rendering	3 (3-0-6)
ITGT	522	Virtual Reality	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

6. Name Assistant Professor Dr. Preecha Tangworakitthaworn

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Southampton, UK.	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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

7. Name Lecturer Dr. Akara Supratak

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computing Research	Imperial College London, UK.	2018
M.Sc.	Computing	Imperial College London, UK.	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	**Supratak A**, Haddawy P. Quantifying the impact of data characteristics on the transferability of sleep stage scoring models. Artificial Intelligence in Medicine May 2023;139:102540.	12/1.0	2023
Published research work	Rungbanapan V, Thaipisutikul T, Pongpaichet S, **Supratak A**, Lin CY, Tuarob S. To Dev or to Doc?: predicting college IT students' prominent functions in software teams Using LMS activities and academic profiles. In: the 2022 26th International Computer Science and Engineering Conference (ICSEC); 2022 Dec 21-23; Sakon Nakhon, Thailand; 2022. pp. 105-110.	11/0.4	2022

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	Damkham W, Thaipisutikul T, **Supratak A**, Kraisangka J, Mongkolwat P, Wang JC. Automated COVID-19 screening framework via deep convolutional neural network with chest x-ray medical images. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand; 2022. pp. 96-99.	11/0.4	2022
Published research work	Sittirit N, Mongkolwat P, Thaipisutikul T, **Supratak A**, Chen TS, Wang JC. Fingerprint liveness detection with voting ensemble classifier. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand; 2022. pp. 105-110.	11/0.4	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 Nov 2022;45(11):e14147. https://doi.org/10.1111/jfpe.14147.	12/1.0	2022
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

8. Name Lecturer Dr. Chaiyong Ragkhitwetsagul

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University College London, UK.	2018
M.S.	Information Technology	Carnegie Mellon University, UK.	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	Sangaroonsilp P, Dam HK, Choetkiertikul M, **Ragkhitwetsagul C**, Ghose A. A taxonomy for mining and classifying privacy requirements in issue reports. Information and Software Technology May 2023;157:107162.	12/1.0	2023
Published research work	**Ragkhitwetsagul C**, Choetkiertikul M, Hoonlor A, Prachyabrued M. Virtual reality for software engineering presentations. In: the 2022 29th Asia-Pacific Software Engineering Conference (APSEC); 2022 Dec 6-9; Japan; 2022. pp. 507-516.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Ritta N, Settewong T, Kula RG, **Ragkhitwetsagul C**, Sunetnanta T, Matsumoto K. Reusing my own code: preliminary results for competitive coding in jupyter notebooks. In: the 2022 29th Asia-Pacific Software Engineering Conference (APSEC); 2022 Dec 6-9; Japan; 2022. pp. 457-461.	11/0.4	2022
Published research work	Settewong T, Ritta N, Kula RG, **Ragkhitwetsagul C**, Sunetnanta T, Matsumoto K. Why visualize data when doding? preliminary categories for coding in jupyter notebooks. In: the 2022 29th Asia-Pacific Software Engineering Conference (APSEC); 2022 Dec 6-9; Japan; 2022. pp. 462-466.	11/0.4	2022
Published research work	Jarukitpipat V, Chhun K, Wanprasert W, **Ragkhitwetsagul C**, Choetkiertikul M, Sunetnanta T, Kula RG, Chinthanet B, Ishio T, Matsumoto K. V-Achilles: an interactive visualization of transitive security vulnerabilities. In: the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE); 2022 Oct 10-14; Michigan, United States; 2022. pp. 1-4.	11/0.4	2022
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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

9. 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	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	Damkham W, Thaipisutikul T, Supratak A, **Kraisangka J**, Mongkolwat P, Wang JC. Automated COVID-19 screening framework via deep convolutional neural network with chest x-ray medical images. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand; 2022. pp. 96-99.	11/0.4	2022

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. Evaluating hydroelectricity production re-operating with adapted rule curve under climate change scenarios: case study of Bhumibol Dam in Thailand. Naresuan University Engineering Journal Nov 2022;17(2):38-46.	11/0.4	2022
Published research work	Phutonglom P, Rittima A, Phankamolsil Y, Tabucanon AS, Sawangphol W, , Talaluxmana Y, Vudhivanich V. Tracing Ccrop water requirement in the pumping, gravitational and inundation irrigation schemes using cloud–based IrriSAT application **Kraisangka J**. Naresuan University Engineering Journal Nov 2022;17(2):28-37.	11/0.4	2022
Published research work	Kyaw KM, Rittima A, Phankamolsil Y, Tabucanon AS, Sawangphol W, **Kraisangka J**, Talaluxmana Y, Vudhivanich V. Optimization–based solution for reducing water scarcity in the greater Chao Phraya River Basin, Thailand: through re–operating the Bhumibol and Sirikit Reservoirs using non–linear programming solver. Engineering Journal Oct 2022;26(10):39-56.	11/0.4	2022

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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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	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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

10. 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	Beheshti M, Naeimi T, Hudson TE, Feng C, **Mongkolwat P**, Riewpaiboon W, Seiple W, Vedanthan R, Rizzo JR. A smart service system for spatial intelligence and onboard navigation for individuals with visual impairment (VIS4ION Thailand): study protocol of a randomized controlled trial of visually impaired students at the Ratchasuda College, Thailand. Trials Mar 2023;24(169):1-17.	12/1.0	2023

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Damkham W, Thaipisutikul T, Supratak A, Kraisangka J, **Mongkolwat P**, Wang JC. Automated COVID-19 screening framework via deep convolutional neural network with chest x-ray medical images. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand; 2022. pp. 96-99.	11/0.4	2022
Published research work	Sittirit N, **Mongkolwat P**, Thaipisutikul T, Supratak A, Chen TS, Wang JC. Fingerprint liveness detection with voting ensemble classifier. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand; 2022. pp. 105-110.	11/0.4	2022
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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

11. 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 Nov 2022;45(11):e14147. 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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

12. Name Lecturer Dr. Pisit Praiwattana

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Liverpool John Moores University, UK.	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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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

ITGT	524	Advanced Animation for Computer Games	3 (3-0-6)
ITGT	582	Research Methodology in Game Technology	1 (1-0-2)
ITGT	697	Thematic Paper	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

Assigned Teaching Load for the Proposed Program

ITGT	524	Advanced Animation for Computer Games	3 (3-0-6)
ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

13. 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	Rungbanapan V, Thaipisutikul T, **Pongpaichet S**, Supratak A, Lin CY, Tuarob S. To Dev or to Doc?: predicting college IT students' prominent functions in software teams Using LMS activities and academic profiles. In: the 2022 26th International Computer Science and Engineering Conference (ICSEC); 2022 Dec 21-23; Sakon Nakhon, Thailand; 2022. pp. 105-110.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Sirikasem D, **Pongpaichet S**. Thai paraphrasing tool for chatbot intent recognition training. In: the 2022 26th International Computer Science and Engineering Conference (ICSEC); 2022 Dec 21-23; Sakon Nakhon, Thailand; 2022. pp. 111–116.	11/0.4	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	**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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)
ITGT	591	Special Topics in Game Technology	3 (3-0-6)
ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

14. 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	Zhang J, Tsai MY, Kitchat K, Sun MT, Sakai K, Ku WS, Surasak T, **Thaipisutikul T**. A secure annuli CAPTCHA system. Computers & Security Feb 2023;125:103025.	12/1.0	2023
Published research work	Yohannes E, Lin CY, T. Shih TK, **Thaipisutikul T**, Enkhbat A, Utaminingrum F. An improved speed estimation using deep homography transformation regression network on monocular videos. IEEE Access Jan 2023;11:5955-5965.	12/1.0	2023

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Rungbanapan V, **Thaipisutikul T**, Pongpaichet S, Supratak A, Lin CY, Tuarob S. To Dev or to Doc?: predicting college IT students' prominent functions in software teams Using LMS activities and academic profiles. In: the 2022 26th International Computer Science and Engineering Conference (ICSEC); 2022 Dec 21-23; Sakon Nakhon, Thailand; 2022. pp. 105-110.	11/0.4	2022
Published research work	Damkham W, **Thaipisutikul T**, Supratak A, Kraisangka J, Mongkolwat P, Wang JC. Automated COVID-19 screening framework via deep convolutional neural network with chest x-ray medical images. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand; 2022. pp. 96-99.	11/0.4	2022
Published research work	Sittirit N, Mongkolwat P, **Thaipisutikul T**, Supratak A, Chen TS, Wang JC. Fingerprint liveness detection with voting ensemble classifier. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand; 2022. pp. 105-110.	11/0.4	2022
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	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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

15. 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	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	Tuarob S, Satravisut M, Sangtunchai P, Nunthavanich S, **Noraset T**. FALCoN: detecting and classifying abusive language in social networks using context features and unlabeled data. Information Processing & Management Jul 2023;60(4):103381.	12/1.0	2023

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
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

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
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
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

ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

16. 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	Kyaw KM, Rittima A, Phankamolsil Y, Tabucanon AS, **Sawangphol W**, Kraisangka J, Talaluxmana Y, Vudhivanich V. Evaluating hydroelectricity production re-operating with adapted rule curve under climate change scenarios: case study of Bhumibol Dam in Thailand. Naresuan University Engineering Journal Nov 2022;17(2):38-46.	13/0.8	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Phutonglom P, Rittima A, Phankamolsil Y, Tabucanon AS, **Sawangphol W**, Kraisangka J, Talaluxmana Y, Vudhivanich V. Tracing Ccrop water requirement in the pumping, gravitational and inundation irrigation schemes using cloud–based IrriSAT application. Naresuan University Engineering Journal Nov 2022;17(2):28-37.	13/0.8	2022
Published research work	Kyaw KM, Rittima A, Phankamolsil Y, Tabucanon AS, **Sawangphol W**, Kraisangka J, Talaluxmana Y, Vudhivanich V. Optimization–based solution for reducing water scarcity in the greater Chao Phraya River Basin, Thailand: through re–operating the Bhumibol and Sirikit Reservoirs using non–linear programming solver. Engineering Journal Oct 2022;26(10):39-56.	13/0.8	2022
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

Current Teaching Load

ITGT	697	Thematic Paper	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

Assigned Teaching Load for the Proposed Program

ITGT	696	Independent Study	6 (0-18-0)
ITGT	698	Thesis	12 (0-36-0)

Full time instructors

1. 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
Textbooks	**Chomtip Pornpanomchai**. Image processing with MATLAB. 1st ed. Nakhon Pathom: Mahidol University Press; 2022. 613 p.	8/1.0	2022
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

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)

2. 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. (1st 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 2020-5th International Conference on Information Technology (InCIT); 2020 Oct 21-22; Chonburi, Thailand; 2020. pp. 33-38.	11/0.4	2020

Current Teaching Load

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)

3. Name Lecturer Dr. Pilailuck Panphattarasap

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	University of Bristol, UK.	2019
M.Sc.	Computer Science	University of Bristol, UK.	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

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Assigned Teaching Load for the Proposed Program

ITGT	583	Research Methodology and Seminar in Game Technology	1 (1-0-2)

Part time instructors

1. Name Assistant Professor Dr. Pisal Setthawong

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	King Mongkut's University of Technology Thonburi	2016
M.Sc.	Computer Science	Assumption University	2005
B.Sc.	Computer Science	Assumption University	2001

Affiliation: PIGSSS GAMES Co. Ltd.

Interesting Research Topics or Specialties

Computer Graphics, Computer Games, Human Computer Interaction, Data Analytics, IT Applications

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Setthawong P**, Triyason T, Osothsilp A, Chinggungval T. Cost-effective IoT extensions for existing public coin operated washing machine towards smarter apartment complexes. Current Applied Science and Technology Jul 2022;23(2):1-20.	13/0.8	2023
Published research work	**Setthawong P**, Setthawong R. Improved grading approval process with rule based grade distribution system. ICIC Express Letters, Part B: Applications Nov 2022;13(11):1111-1122.	12/1.0	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Sapul MSC, Setthawong R, **Setthawong P**. New hybrid flower pollination algorithm with dragonfly algorithm and jaccard index to enhance solving university course timetable problem. Indonesian Journal of Electrical Engineering and Computer Science Dec 2020;20(3):1556-1568.	12/1.0	2020
Published research work	Angsuchotmetee C, **Setthawong P**. Blockvote: an architecture of a blockchain-based electronic voting system. ECTI-CIT Transactions Apr 2020;14(2):174–189.	12/1.0	2020

Current Teaching Load

ITGT	532	Game Design and Development	3 (3-0-6)
ITGT	534	Tools for Computer Games	3 (3-0-6)
ITGT	552	Digital Storytelling and Machinima	3 (3-0-6)

Assigned Teaching Load for the Proposed Program

ITGT	532	Game Design and Development	3 (3-0-6)
ITGT	534	Tools for Computer Games	3 (3-0-6)
ITGT	552	Digital Storytelling and Machinima	3 (3-0-6)

2. Name Lecturer Dr. Chatchai Wangwiwattana

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Southern Methodist University, USA	2017
MBA	Marketing	University of the Thai Chamber of Commerce	2019
MIT	Digital Game Development	The Guildhall at Southern Methodist University, USA	2013
B.Sc.	Computer Science	University of the Thai Chamber of Commerce	2008

Affiliation: University of the Thai Chamber of Commerce

Interesting Research Topics or Specialties

Artificial Intelligence, Computer Vision, 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	**Wangwiwattana C**, Tongvivat Y. Semi-automatic short-answer grading tools for Thai language using natural language processing. In: 2022 5th International Conference on Education Technology Management (ICETM); 2022 Dec 16-18; Lincoln, United Kingdom. pp. 123-128.	11/0.4	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	**Wangwiwattana C**, Tongvivat Y. Semi-automatic short answers clustering and grading with K-Means and Keyword Matching algorithms. In: the 2022 6th International Conference on Information Technology (InCIT); 2022 Nov 10-11; Nonthaburi, Thailand. pp. 280-284.	11/0.4	2022
Published research work	**Wangwiwattana C.** Fall detection with a single commodity RGB camera based-on 2d pose estimation**.** International of Development Administration Research Feb 2021;2**(**2**):**12-22**.**	9/0.6	2021

Current Teaching Load

ITGT	533	Game Engine Development	3 (3-0-6)

Assigned Teaching Load for the Proposed Program

ITGT	533	Game Engine Development	3 (3-0-6)

3. Name Lecturer Dr. Pattanapon Rhienmora

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Computer Science	Asian Institute of Technology	2012
M.Eng.	Computer Science	Asian Institute of Technology	2004
B.Eng.	Computer Engineering	Kasetsart University	2000

Affiliation: Bangkok University

Interesting Research Topics or Specialties

Virtual Reality, Artificial Intelligence, Medical and Dental Informatics, Intelligent Tutoring System, Computer Graphics and Haptics

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	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

Current Teaching Load

ITGT	534	Tools for Computer Games	3 (3-0-6)

Assigned Teaching Load for the Proposed Program

ITGT	534	Tools for Computer Games	3 (3-0-6)

4. Name Lecturer Saranpat Sereewiwattana

Education

Degree	Degree Name	Institute	Year of Graduation
M.Sc.	Innovation Management	Chulalongkorn University	2010
B.B.A.	Managment	Prince of Songkla University	2006

Affiliation: Revolution Industry Co. Ltd.

Interesting Research Topics or Specialties

Game Development, Game Design, Game Production, Game Analytic

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
Other types of academic work	Airship: Kingdoms Adrift, Steam Store, Dec 2022.	6/0.2	2022
Other types of academic work	The Last Bug. Steam Store and Tencent Store, Oct 2020.	6/0.2	2020
Other types of academic work	Dash Dash World. Oculus Store and Steam Store, Jan 2020.	6/0.2	2020

Current Teaching Load

ITGT	551	Game Production Management and Marketplace	3 (3-0-6)

Assigned Teaching Load for the Proposed Program

ITGT	551	Game Production Management and Marketplace	3 (3-0-6)

APPENDIX C

Curriculum Mapping

Appendix C

Curriculum Mapping

● Major responsibility ○ Minor responsibility

Subjects	Knowledge				Skills				Ethics			Character				
	1	2	3	4	1	2	3	4	1	2	3	1	2	3	4	5
1. Prerequisite courses																
ITCS 503 Design and Analysis of Algorithms	●	●			○	○			●	●			●			
ITCS 504 Computer System Organization and Architecture	●				○				●	●			●			
ITCS 507 Mathematical Foundations for Computer Science	●				○				●	●			●			
2. Required courses																
ITGT 511 Algorithms and Artificial Intelligence for Computer Games	●	●			●	●	●		●	●	○	○	●			●
ITGT 521 3D Graphics and Rendering	●	●			●	●	●		●	●	○	○	●			●
ITGT 531 Gamification	●	○			●	○	●		●	●	○	●	●	●	○	●
ITGT 532 Game Design and Development	●	●	○		●	●	●		●	●	●	●	●	●	●	●
ITGT 551 Game Production Management and Marketplace	○	○	●		●	●	●		●	●	●	●	●	●	●	●
ITGT 583 Research Methodology and Seminar in Game Technology				●				●	●	●	●	●	●			●

Subjects	Knowledge				Skills				Ethics			Character				
	1	2	3	4	1	2	3	4	1	2	3	1	2	3	4	5
3. Elective courses																
ITGT 522 Virtual Reality	●	●			●	●	●	○	●	●	●	●	●	●	○	●
ITGT 523 Computer Vision	●	●			●	●	●	○	●	●	○	●	●	●	○	●
ITGT 524 Advanced Animation for Computer Games	●	●			●	●	●	○	●	●	●	●	●	●	○	●
ITGT 533 Game Engine Development	●	●	○		●	●	●		●	●	○	○	●			○
ITGT 534 Tools for Computer Games	○	●	○		○	○	○		●	●	○	○	●			○
ITGT 541 Multiplayer Online Game Development	●	●	○		●	●	●		●	●	●	●	●	●	●	●
ITGT 542 Game Console Technologies and Programming	●	●	○		●	●	●		●	●	●	●	●	●	●	●
ITGT 543 Mobile Game Programming	●	●	○		●	●	●		●	●	●	●	●	●	●	●
ITGT 552 Digital Storytelling and Machinima	●	●			●	●	●		●	●	●	●	●	●	○	●
ITGT 553 Visual Design for Games and Interactive Media		●	●	○	●	○	●	○	●	●	●	○	●	●	●	●
ITGT 591 Special Topics in Game Technology	●	●			●	●	●	○	●	●	●	●	●	●	●	●
4. Thesis																
ITCGT 698 Thesis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ITGT 696 Independent Study	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

Learning Outcomes (as stated in Section 5, item no. 2)	Core value of Mahidol University
1. Knowledge	
Graduates are expected to possess the following knowledge.	
1.1 Principles, theories, algorithms, and mathematics underlying game technology and gamification.	Mastery, Determination
1.2 Knowledge of tools for development in game technology and gamification.	Mastery, Determination
1.3 Game industry, production and marketing.	Mastery, Determination
1.4 Research methodology.	Mastery, Integrity
2. Skills	
Graduates are expected to possess the following skills.	
2.1 Analysis of problems in game technology and gamification in order to design a solution.	Mastery, Determination, Originality
2.2 Computer programming to implement the designed solution.	Mastery, Determination, Originality
2.3 Testing of the implemented solution to ensure its correctness and efficiency.	Mastery, Determination
2.4 Conducting research in game technology and gamification.	Mastery, Determination, Originality
3. Ethics	
Graduates are expected to possess the following qualities.	
3.1 Professional integrity.	Integrity
3.2 Discipline including punctuality and adhering to professional code of conduct, rules and regulations.	Altruism, Integrity
3.3 Respect the rights and opinions of others, as well as not violating the rights and intellectual property of others.	Harmony, Integrity, Leadership
4. Character	
Graduates are expected to possess the following characteristics.	
4.1 Proficiency in information technology.	Mastery
4.2 Can effectively and confidently communicate in English.	Mastery
4.3 Can work as a team and be responsible for their own actions and for their assigned duties.	Altruism, Harmony, Leadership
4.4 Demonstrate leadership as well as the ability to follow.	Altruism, Harmony, Integrity, Leadership
4.5 Demonstrate creativity.	Determination, 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. 2562	Revised Objectives of the Program B.E. 2567
1.2.1 Morality, ethics and behavior appropriate to profession with professional code of conduct.	1.2.1 Have knowledge in theories, practices, and research of game technology and gamification.
1.2.2 Knowledge and skills in game technology and gamification with understanding of basic principle and theory, and self-learning ability for academic and technology development in game technology and gamification.	1.2.2 Develop solutions and innovations using game technology and gamification for the benefits of society.
1.2.3 Development of research and new knowledge in game technology and gamification. Application and integration of body of knowledge in game technology and gamification and related fields in order to develop quality software beneficial to society.	1.2.3 Adhere appropriately ethics, integrity, discipline, and respect for the rights of other people and intellectual properties.
1.2.4 Creativity, learning teamwork, taking leadership and follower roles, building good relationship with colleagues, with self and social responsibilities.	1.2.4 Effectively communicate in English, who are proficient in the use of information technology, and who possess creativity, leadership and teamwork.
1.2.5 Appropriately use of technology and statistics for research development in game technology and gamification. Ability to communication in English well.	

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	PLO7	PLO8
1.2.1 Have knowledge in theories, practices, and research of game technology and gamification.		X	X					
1.2.2 Develop solutions and innovations using game technology and gamification for the benefits of society.				X	X	X		
1.2.3 Adhere appropriately ethics, integrity, discipline, and respect for the rights of other people and intellectual properties.	X							
1.2.4 Effectively communicate in English, who are proficient in the use of information technology, and who possess creativity, leadership and teamwork.							X	X

*** Program Learning Outcome**

PLO1	Produce work that adheres to appropriate ethics and professional codes of conduct.
PLO2	Comprehend computer science knowledge necessary for game development including artificial intelligence and interactive systems.
PLO3	Comprehend game design and development process from requirements gathering, design and implementation, project management, documentation, testing, to product marketing.
PLO4	Apply game technology and gamification to solve real-world problems such as those in medicine, military, education, and entertainment.
PLO5	Evaluate existing game technology and gamification to identify strengths, weaknesses, and opportunities for innovations. (Plan 1.2 only)
PLO6	Offer creative solutions to game technology and gamification problems. (Plan 1.2 only)
PLO7	Demonstrate effective English communication and proficiency in the use of information technology.
PLO8	Demonstrate creativity, leadership, and teamwork.

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

Domains	Standard Learning Outcomes	Program Learning Outcome *							
		PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
Knowledge	1.1 Principles, theories, algorithms, and mathematics underlying game technology and gamification.		X	X					
	1.2 Knowledge of tools for development in game technology and gamification.		X	X					
	1.3 Game industry, production and marketing.			X					
	1.4 Research methodology.					X			
Skills	2.1 Analysis of problems in game technology and gamification in order to design a solution.				X				
	2.2 Computer programming to implement the designed solution.				X				
	2.3 Testing of the implemented solution to ensure its correctness and efficiency.				X				
	2.4 Conducting research in game technology and gamification.				X	X	X		
Ethics	3.1 Professional integrity.	X							
	3.2 Discipline including punctuality and adhering to professional code of conduct, rules and regulations.	X							
	3.3 Respect the rights and opinions of others, as well as not violating the rights and intellectual property of others.	X							
Character	4.1 Proficiency in information technology.							X	
	4.2 Can effectively and confidently communicate in English.							X	
	4.3 Can work as a team and be responsible for their own actions and for their assigned duties.								X
	4.4 Demonstrate leadership as well as the ability to follow.								X
	4.5 Demonstrate creativity.								X

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

PLOs	Learning Method	Assessment
PLO1: Produce work that adheres to appropriate ethics and professional codes of conduct.	- Teacher-directed instruction - Active learning	- Formative assessment - Summative assessment
PLO2: Comprehend computer science knowledge necessary for game development including artificial intelligence and interactive systems.	- Teacher-directed instruction - Active learning	- Formative assessment - Summative assessment
PLO3: Comprehend game design and development process from requirements gathering, design and implementation, project management, documentation, testing, to product marketing.	- Teacher-directed instruction - Active learning	- Formative assessment - Summative assessment
PLO4: Apply game technology and gamification to solve real-world problems such as those in medicine, military, education, and entertainment.	- Active learning - Cognitive activation	- Formative assessment - Summative assessment
PLO5: Evaluate existing game technology and gamification to identify strengths, weaknesses, and opportunities for innovations. (Plan 1.2 only)	- Active learning - Cognitive activation	- Formative assessment
PLO6: Offer creative solutions to game technology and gamification problems. (Plan 1.2 only)	- Active learning - Cognitive activation	- Formative assessment - Summative assessment
PLO7: Demonstrate effective English communication and proficiency in the use of information technology.	- Active learning	- Formative assessment - Summative assessment
PLO8: Demonstrate creativity, leadership, and teamwork.	- Active learning - Cognitive activation	- Formative assessment - Summative assessment

Active learning, focusing on promoting the engagement of students in their own learning, includes practices such as group work, use of information and communication technology, or student self-assessment.

Cognitive activation includes practices capable of challenging students in order to motivate them and stimulate higher-order skills, such as critical thinking, problem solving and decision making. Examples include the demonstration or presentation of a project, research, problem solving methods, and summarizing the content of a research paper.

Teacher-directed instruction encompasses practices based on lecturing, memorization and repetition, where the teacher is the main actor responsible for transmitting knowledge to receptive students.

Formative assessment is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning. Examples of formative assessments include quizzes, homework, in-class questions and answers, in-class observation or presentation activities.

Summative assessment focuses on evaluating student learning at the end of an instructional unit by comparing it against some standard or benchmark. Examples of summative assessments include a midterm exam, final exam, final project, a paper, senior project/recital.

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

No.	Code	Name	Credits	Program Learning Outcomes							
				1	2	3	4	5	6	7	8
Prerequisite Courses											
1	ITCS 503	Design and Analysis of Algorithms	3 (3-0-6)	I	I					I	
2	ITCS 504	Computer System Organization and Architecture	3 (3-0-6)	I	I					I	
3	ITCS 507	Mathematical Foundations for Computer Science	3 (3-0-6)	I	I					I	
Required Courses											
4	ITGT 511	Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)	R	R		R			R	R
5	ITGT 521	3D Graphics and Rendering	3 (3-0-6)	R	R		R			R	R
6	ITGT 531	Gamification	3 (3-0-6)	R		R	R			R	R
7	ITGT 532	Game Design and Development	3 (3-0-6)	R		R	R			R	R
8	ITGT 551	Game Production Management and Marketplace	2 (2-0-4)	R		R	R			R	R
9	ITGT 583	Research Methodology and Seminar in Game Technology	1 (1-0-2)	R				R	R	R	
Elective courses											
10	ITGT 522	Virtual Reality	3 (3-0-6)	R	R		R	R	R	R	R
11	ITGT 523	Computer Vision	3 (3-0-6)	R	R		R	R	R	R	R
12	ITGT 524	Advanced Animation for Computer Games	3 (3-0-6)	R	R		R	R	R	R	R
13	ITGT 533	Game Engine Development	3 (3-0-6)	R		R	R			R	R
14	ITGT 534	Tools for Computer Games	3 (3-0-6)	R		R	R			R	R
15	ITGT 541	Multiplayer Online Game Development	3 (3-0-6)	R		R	R			R	R
16	ITGT 542	Game Console Technologies and Programming	3 (3-0-6)	R		R	R			R	R
17	ITGT 543	Mobile Game Programming	3 (3-0-6)	R		R	R			R	R
18	ITGT 552	Digital Storytelling and Machinima	3 (3-0-6)	R		R	R			R	R
19	ITGT 553	Visual Design for Games and Interactive Media	3 (3-0-6)	R	R		R	R	R	R	R
20	ITGT 591	Special Topics in Game Technolog	3 (3-0-6)	R	R		R	R	R	R	R

No.	Code	Name	Credits	Program Learning Outcomes							
				1	2	3	4	5	6	7	8
Thesis											
21	ITGT 698	Thesis	12 (0-36-0)	M	M	M	M	M	M	M	M
Independent Study											
22	ITGT 696	Independent Study	6 (0-18-0)	M	M	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 1.2 Academic (Course work and research)

No.	Code	Name	Credits	Program Learning Outcomes							
				1	2	3	4	5	6	7	8
1st year, 1st semester											
1	ITGT 511	Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)	I	I		I			I	I
2	ITGT 521	3D Graphics and Rendering	3 (3-0-6)	I	I		I			I	I
3	ITGT 531	Gamification	3 (3-0-6)	I		I	I			I	I
4	ITGT 551	Game Production Management and Marketplace	2 (2-0-4)	I		I	I			I	I
5	ITGT 583	Research Methodology and Seminar in Game Technology	1 (1-0-2)	I				I	I	I	
1st year, 2nd semester											
1	ITGT 532	Game Design and Development	3 (3-0-6)	R		R	R			R	R
2	ITGT XXX	Elective Course	3 (3-0-6)								
3	ITGT XXX	Elective Course	3 (3-0-6)								
4	ITGT XXX	Elective Course	3 (3-0-6)								
1st year, summer											
1	ITGT 698	Thesis	4 (0-12-0)	M	M	M	M	M	M	M	M
2nd year, 1st semester											
1	ITGT 698	Thesis	4 (0-12-0)	M	M	M	M	M	M	M	M
2nd year, 2nd semester											
1	ITGT 698	Thesis	4 (0-12-0)	M	M	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 2 Profession

No.	Code	Name	Credits	Program Learning Outcomes							
				1	2	3	4	5	6	7	8
1st year, 1st semester											
1	ITGT 511	Algorithms and Artificial Intelligence for Computer Games	3 (3-0-6)	I	I		I			I	I
2	ITGT 521	3D Graphics and Rendering	3 (3-0-6)	I	I		I			I	I
3	ITGT 531	Gamification	3 (3-0-6)	I		I	I			I	I
4	ITGT 551	Game Production Management and Marketplace	2 (2-0-4)	I		I	I			I	I
5	ITGT 583	Research Methodology and Seminar in Game Technology	1 (1-0-2)	I				I	I	I	
1st year, 2nd semester											
1	ITGT 532	Game Design and Development	3 (3-0-6)	R		R	R			R	R
2	ITGT XXX	Elective Course	3 (3-0-6)								
3	ITGT XXX	Elective Course	3 (3-0-6)								
4	ITGT XXX	Elective Course	3 (3-0-6)								
1st year, summer											
1	ITGT 696	Independent Study	2 (0-6-0)	M	M	M	M	M	M	M	M
2	ITGT XXX	Elective Course	3 (3-0-6)								
3	ITGT XXX	Elective Course	3 (3-0-6)								
2nd year, 1st semester											
1	ITGT 696	Independent Study	2 (0-6-0)	M	M	M	M	M	M	M	M
2nd year, 2nd semester											
1	ITGT 696	Independent Study	2 (0-6-0)	M	M	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 6: The expectation of learning outcomes at the end of the academic year

Plan 1.2 Academic (Course work and research)

Year of study	Knowledge, skills, and any other expected learning outcomes	PLO
1st	After the 1st year of study, the students are expected to - Comprehend computer science knowledge necessary for game development. - Comprehend game design and development process from requirements gathering, design and implementation, project management, documentation, testing, to product marketing. - Apply game technology and gamification to solve real-world problems such as those in medicine, military, education, and entertainment. - Demonstrate the ability to follow appropriate ethics and professional code of conduct. - Demonstrate creativity, leadership and teamwork.	PLO1, PLO2, PLO3, PLO4, PLO8
2nd	After the 2nd year of study, the students are expected to - Evaluate existing game technology and gamification to identify strengths, weaknesses, and opportunities for innovations. - Create novel solutions to game technology and gamification problems. - Demonstrate effective English communication and proficiency in the use of information technology.	PLO5, PLO6, PLO7

Plan 2 Profession

Year of study	Knowledge, skills, and any other expected learning outcomes	PLO
1st	After the 1st year of study, the students are expected to - Comprehend computer science knowledge necessary for game development. - Comprehend game design and development process from requirements gathering, design and implementation, project management, documentation, testing, to product marketing. - Apply game technology and gamification to solve real-world problems such as those in medicine, military, education, and entertainment. - Demonstrate the ability to follow appropriate ethics and professional code of conduct. - Demonstrate creativity, leadership and teamwork.	PLO1, PLO2, PLO3, PLO4, PLO8
2nd	After the 2nd year of study, the students are expected to - Apply game technology and gamification to solve real-world problems such as those in medicine, military, education, and entertainment. - Demonstrate effective English communication and proficiency in the use of information technology.	PLO4, PLO7

APPENDIX E

The revised of Program

Appendix E

The Revision of Master of Science Program

in Game Technology and Gamification Volume in 2019

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 5 February B.E. 2564.**

2. **The Mahidol University Council has approved this revised curriculum in the 597 meeting on October 18, 2023**.....

3. **The revised curriculum will be effective with student class B.E. 2567 from the 1st semester of the Academic Year B.E. 2567 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 content of the program is needed to be updated with contemporary body of knowledge in game technology and gamification to the change in computer technology and based on the stakeholders' feedback

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. Chomtip Pornpanomchai	-
-	Associate Professor Dr. Suppawong Tuarob
Associate Professor Dr. Worapan Kusakunniran	Associate Professor Dr. Worapan Kusakunniran
Assistant Professor Dr. Morakot Choetkiertikul	Assistant Professor Dr. Morakot Choetkiertikul
Assistant Professor Dr. Mores Prachyabrued	Assistant Professor Dr. Mores Prachyabrued
Assistant Professor Dr. Preecha Tangworakitthaworn	Assistant Professor Dr. Preecha Tangworakitthaworn
Assistant Professor Dr. Rawesak Tanawongsuwan	-
Lecturer Dr. Akara Supratak	Lecturer Dr. Akara Supratak

Instructors of the Current Program	Instructors of the Revised Program
Lecturer Dr. Chaiyong Ragkhitwetsagul	Lecturer Dr. Chaiyong Ragkhitwetsagul
Lecturer Dr. Jidapa Kraisangka	Lecturer Dr. Jidapa Kraisangka
-	Lecturer Dr. Pattanasak Mongkolwat
Lecturer Dr. Pawitra Liamruk	-
Lecturer Dr. Petch Sajjacholapunt	Lecturer Dr. Petch Sajjacholapunt
Lecturer Dr. Pisit Praiwattana	Lecturer Dr. Pisit Praiwattana
Lecturer Dr. Siripen Pongpaichet	Lecturer Dr. Siripen Pongpaichet
-	Lecturer Dr. Tipajin Thaipisutikul
-	Lecturer Dr. Thanapon Noraset
Lecturer Dr. Wudhichart Sawangphol	Lecturer Dr. Wudhichart Sawangphol

5.2 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 (in 2019)		Courses of the Revising Program (in 2024)		Remark
Fundamental Courses (non-credits)		**Prerequisite Courses (non-credits)**		
ITCS 503 Design and Analysis of Algorithms ทสคพ ๕๐๓ การออกแบบและวิเคราะห์ขั้นตอนวิธี	3 (3-0-6)	ITCS 503 Design and Analysis of Algorithms ทสคพ ๕๐๓ การออกแบบและวิเคราะห์ขั้นตอนวิธี	3 (3-0-6)	unchanged
ITCS 504 Computer System Organization and Architecture ทสคพ ๕๐๔ สถาปัตยกรรมและการจัดระบบคอมพิวเตอร์	3 (3-0-6)	ITCS 504 Computer System Organization and Architecture ทสคพ ๕๐๔ สถาปัตยกรรมและการจัดระบบคอมพิวเตอร์	3 (3-0-6)	unchanged
ITCS 507 Mathematical Foundations for Computer Science ทสคพ ๕๐๗ พื้นฐานทางคณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	3 (3-0-6)	ITCS 507 Mathematical Foundations for Computer Science ทสคพ ๕๐๗ พื้นฐานทางคณิตศาสตร์สำหรับวิทยาการคอมพิวเตอร์	3 (3-0-6)	change course description
Required Courses 15 credits		**Required Courses 15 credits**		
ITGT 511 Algorithms and Artificial Intelligence for Computer Games ทสกท ๕๑๑ ขั้นตอนวิธีและปัญญาประดิษฐ์สำหรับเกมคอมพิวเตอร์	3 (3-0-6)	ITGT 511 Algorithms and Artificial Intelligence for Computer Games ทสกท ๕๑๑ ขั้นตอนวิธีและปัญญาประดิษฐ์สำหรับเกมคอมพิวเตอร์	3 (3-0-6)	unchanged

Courses of the Current Program (in 2019)		Courses of the Revising Program (in 2024)		Remark
ITGT 521 3D Graphics and Rendering ทสกท ๕๒๑ กราฟิกส์และการสร้างภาพ ๓ มิติ	3 (3-0-6)	ITGT 521 3D Graphics and Rendering ทสกท ๕๒๑ กราฟิกส์และการสร้างภาพ ๓ มิติ	3 (3-0-6)	unchanged
ITGT 531 Gamification ทสกท ๕๓๑ เกมมิฟิเคชัน	3 (3-0-6)	ITGT 531 Gamification ทสกท ๕๓๑ เกมมิฟิเคชัน	3 (3-0-6)	unchanged
ITGT 532 Game Design and Development ทสกท ๕๓๒ การออกแบบและพัฒนาเกม	3 (3-0-6)	ITGT 532 Game Design and Development ทสกท ๕๓๒ การออกแบบและพัฒนาเกม	3 (3-0-6)	change course description
ITGT 551 Game Production Management and Marketplace ทสกท ๕๕๑ หลักการตลาดและการจัดการการผลิตเกม	2 (2-0-4)	ITGT 551 Game Production Management and Marketplace ทสกท ๕๕๑ หลักการตลาดและการจัดการการผลิตเกม	2 (2-0-4)	unchanged
ITGT 582 Research Methodology in Game Technology ทสกท ๕๘๒ วิทยาระเบียบวิธีวิจัยทางด้านเทคโนโลยีเกม	1 (1-0-2)	ITGT 583 Research Methodology and Seminar in Game Technology ทสกท ๕๘๓ วิทยาระเบียบวิธีวิจัยและสัมมนาทางด้านเทคโนโลยีเกม	1 (1-0-2)	change Code, course name and course description
Elective Courses **Plan A (A2) not less than 9 credits** **Plan B not less than 15 credits**		**Elective Courses** **Plan 1.2 Academic (Course work and research) not less than 9 credits** **Plan 2 Profession not less than 15 credits**		
ITGT 522 Virtual Reality ทสกท ๕๒๒ ความจริงเสมือน	3 (3-0-6)	ITGT 522 Virtual Reality ทสกท ๕๒๒ ความจริงเสมือน	3 (3-0-6)	unchanged
ITGT 523 Computer Vision ทสกท ๕๒๓ คอมพิวเตอร์วิทัศน์	3 (3-0-6)	ITGT 523 Computer Vision ทสกท ๕๒๓ คอมพิวเตอร์วิทัศน์	3 (3-0-6)	unchanged
ITGT 524 Advanced Animation for Computer Games ทสกท ๕๒๔ การทำภาพเคลื่อนไหวสำหรับเกมคอมพิวเตอร์ขั้นสูง	3 (3-0-6)	ITGT 524 Advanced Animation for Computer Games ทสกท ๕๒๔ การทำภาพเคลื่อนไหวสำหรับเกมคอมพิวเตอร์ขั้นสูง	3 (3-0-6)	unchanged
ITGT 533 Game Engine Development ทสกท ๕๓๓ การพัฒนาเกมเอนจิน	3 (3-0-6)	ITGT 533 Game Engine Development ทสกท ๕๓๓ การพัฒนาเกมเอนจิน	3 (3-0-6)	unchanged

Courses of the Current Program (in 2019)		Courses of the Revising Program (in 2024)		Remark
ITGT 534 Tools for Computer Games ทสกท ๕๓๔ เครื่องมือสำหรับเกมคอมพิวเตอร์	3 (3-0-6)	ITGT 534 Tools for Computer Games ทสกท ๕๓๔ เครื่องมือสำหรับเกมคอมพิวเตอร์	3 (3-0-6)	unchanged
ITGT 541 Multiplayer Online Game Development ทสกท ๕๔๑ การพัฒนาเกมออนไลน์ในระบบผู้เล่นหลายคน	3 (3-0-6)	ITGT 541 Multiplayer Online Game Development ทสกท ๕๔๑ การพัฒนาเกมออนไลน์ในระบบผู้เล่นหลายคน	3 (3-0-6)	unchanged
ITGT 542 Game Console Technologies and Programming ทสกท ๕๔๒ การเขียนโปรแกรมและเทคโนโลยีเกมคอนโซล	3 (3-0-6)	ITGT 542 Game Console Technologies and Programming ทสกท ๕๔๒ การเขียนโปรแกรมและเทคโนโลยีเกมคอนโซล	3 (3-0-6)	unchanged
ITGT 543 Mobile Game Programming ทสกท ๕๔๓ การเขียนโปรแกรมเกมบนอุปกรณ์เคลื่อนที่	3 (3-0-6)	ITGT 543 Mobile Game Programming ทสกท ๕๔๓ การเขียนโปรแกรมเกมบนอุปกรณ์เคลื่อนที่	3 (3-0-6)	unchanged
ITGT 552 Digital Storytelling and Machinima ทสกท ๕๕๒ การเล่าเรื่องในระบบดิจิตอลและการสร้างหนังจากเกม	3 (3-0-6)	ITGT 552 Digital Storytelling and Machinima ทสกท ๕๕๒ การเล่าเรื่องในระบบดิจิตอลและการสร้างหนังจากเกม	3 (3-0-6)	unchanged
ITGT 591 Special Topics in Game Technology ทสกท ๕๙๑ หัวข้อพิเศษทางด้านเทคโนโลยีเกม	3 (3-0-6)	ITGT 591 Special Topics in Game Technology ทสกท ๕๙๑ หัวข้อพิเศษทางด้านเทคโนโลยีเกม	3 (3-0-6)	unchanged
		ITGT 553 Visual Design for Games and Interactive Media ทสกท ๕๕๓ การออกแบบทัศนศิลป์สำหรับเกมและสื่อเชิงโต้ตอบ	3 (3-0-6)	new course
Thesis 12 credits		**Thesis 12 credits**		
ITGT 698 Thesis ทสกท ๖๙๘ วิทยานิพนธ์	12 (0-36-0)	ITGT 698 Thesis ทสกท ๖๙๘ วิทยานิพนธ์	12 (0-36-0)	unchanged

Courses of the Current Program (in 2019)		Courses of the Revising Program (in 2024)		Remark
Thematic Paper 6 credits		**Independent Study 6 credits**		
ITGT 697 Thematic Paper ทสกท ๖๙๗ สารนิพนธ์	6 (0-18-0)	ITGT 696 Independent Study ทสกท ๖๙๖ การค้นคว้าอิสระ	6 (0-18-0)	change Code, course name and course description

6. The Comparison Table of the Curriculum Structure between the Current Program and Revised Program Based on the Criteria on Graduate Studies of 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)

6.1 Plan 1.2 Academic (Course work and research)

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2565	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
1. Prerequisite Courses		Non-credits	Non-credits
2. Required Courses		15	15
3. Elective Courses		not less than 9	not less than 9
4. Thesis	not less than 12	12	12
Total credits (not less than)	**36**	**36**	**36**

6.2 Plan 2 Profession

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2565	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
1. Prerequisite Courses		Non-credits	Non-credits
2. Required Courses		15	15
3. Elective Courses		not less than 15	not less than 15
4. Independent Study	not less than 3 and not more than 6	6	6
Total credits (not less than)	**36**	**36**	**36**