



# ICT STUDENT'S MANUAL

Academic Year 2024

Faculty of ICT, Mahidol University  
999 Phuttamonthon 4 Road, Salaya, Nakhon Pathom 73170

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# WELCOME TO ICT MAHIDOL



Welcome to the ICT Mahidol family-your lifelong home! At ICT Mahidol, you are not just a student but an integral part of our community. Here, we embody the **"One ICT"** spirit of unity and collaboration, where everyone, including you, works together as a unified team towards shared goals.

You are about to embark on an exciting journey, delving into the latest advancements in computing technology while embracing life-long learning and essential 21<sup>st</sup> century skills. Our rapidly evolving world, marked by breakthroughs in artificial intelligence, cloud computing, cybersecurity, and data science, is transforming how we live, learn, and work.

Generative AI and cutting-edge technology will be integral to your learning experience, helping you solve complex problems, create innovative solutions, and prepare for future challenges. You will explore new ways of using generative AI to manage and write computer programs, revolutionizing software development and enhancing efficiency. With your determination and resilience, our faculty and staff will provide you with the knowledge and skills needed to make your mark in this dynamic landscape.

At ICT Mahidol, you'll benefit from world-class facilities, including advanced computing infrastructure, an IoT lab, and a state-of-the-art cybersecurity SOC. These resources will ensure you gain hands-on experience with the tools and technologies shaping our future. You will also have opportunities to participate in internships with prestigious university partners like the University of Bremen (Germany), National Central University (Taiwan), National Institute of Advanced Industrial Science and Technology (Japan), Nara Institute of Science and Technology (Japan), Japan Advance Institute of Science and Technology (Japan), Osaka University (Japan), Tokyo City University (Japan), Tokyo University of Agriculture and Technology (Japan), Ritsumeikan University (Japan), and University of Sydney (Australia), as well as with local and international companies, enhancing your practical skills and professional network.

Studying computer science is a journey that requires your devotion, attention to all your classes, and engagement with your friends, faculty, and

staff to achieve your educational objectives. Your educational success will be a strong foundation for a good life, extending benefits to your family, society, and the world, following the words of Prince Mahidol:

**“True success is not in the learning  
but in its application to the benefit of mankind.”**

Besides your academic pursuits, you'll forge lifelong friendships and enjoy a vibrant campus life filled with exciting activities in our well-equipped ICT building. At ICT Mahidol, living a good life means having fun while doing what you love and making a meaningful impact.

Our faculty and staff are eagerly looking forward to welcoming you in person to our beautiful campus at Mahidol University. We believe in your potential and are committed to supporting you every step of the way. Embrace this opportunity, stay curious, and never stop learning. Remember, your responsibility and dedication are crucial to your success. We can't wait to see you all and begin this journey together. Welcome to WE Mahidol!!

## ABOUT MAHIDOL UNIVERSITY

Mahidol University was named after Prince Mahidol, present King's grandfather (the present king is Rama X), who founded the first Medical School in the country at Siriraj Hospital in 1890. It not only provided modern medical services for all people but also served as Thailand's first institution of higher education. Mahidol University is renowned as one of the most prestigious universities in Thailand, recognized for its excellence in teaching, research, and professional services, embodying the determination **"Wisdom of the Land."**



The philosophy of Mahidol University is best summarized by the University motto: **"At-ta-nang Up-pa-mang Ka-re"** which can be translated to English: as **"Do unto others as you would have others do unto you"**. This philosophy is the underlying theme pervading in all activities of Mahidol as it endeavors to imbue graduates with the conviction that, apart from academic matters, they have responsibilities for improving the quality of life of human beings and making this world a better place to live in. His Royal Highness Prince Mahidol is our essential guiding light.

**“True success is not in the learning  
but in its application to the benefit of mankind.”**

– H.R.H. Prince Mahidol



## ABOUT THE FACULTY OF ICT



Established in 2009, The Faculty of Information and Communication Technology is one of the newest faculties of Mahidol University. It stems from the Department of Computer Science, the Faculty of Science, and the Computing Center, which have cooperatively worked together in the development of software for university administration, and in computing research since 1988. Recognizing the significance of information and communication technology development in Thailand, Mahidol University has established the ICT Faculty with the mission to develop a world-class ICT academic and research environment that equips our learners, faculty, and staff with agility, flexibility, knowledge, and opportunities to pursue their professional and academic goals while contributing to the economic

and cultural development of the nation and the world.





The Faculty of ICT offers

# 3 degrees 6 programs

including:



## Vision

Toward world-class multidisciplinary education and research in computing technology



## Mission

To develop a world class ICT academic and research environment that equips our learners, faculty, and staff with agility, flexibility, knowledge, and opportunities to pursue their professional and academic goals while contributing to the economic and cultural development of the nation and the world.

## Bachelor of Science in

- Information and Communication Technology
- Digital Science and Technology

## Master of Science in

- Computer Science
- Cyber Security and Information Assurance
- Game Technology and Gamification

## Doctoral of Philosophy in

- Computer Science

For more information about our curriculum, visit [our program](#)



## ABOUT OUR PROGRAM

The Bachelor of Science in Information and Communication Technology (International program) was developed and revised based on Mahidol University educational philosophy that emphasized on educating learners to attain academic achievement through learning-centered education, outcome-based education, and Constructivism.

The program aims at producing leading ICT graduates who possess high caliber in advanced knowledge, creativity, research and development, and practical skills, as well as having 21<sup>st</sup> century skills and capable to use English in professional careers and deriving new knowledge. Graduates are expected to possess high competency in the global competitive workforce of the fast-growing generation of technology as well as equip with ethical responsibilities and leadership skills.

When completing the program, the graduates will be able to achieve the following **Program-Level Learning Outcomes (PLOs)**:

Program-Level Learning Outcomes (PLOs)	<b>PLO1:</b> Solve ICT related problems using critical thinking, problem solving, and ICT disciplinary skills
	<b>PLO2:</b> Demonstrate abilities to work in ICT related project collaboratively
	<b>PLO3:</b> Perform the individual, social, and ethical responsibilities of a professional working in ICT-related disciplines
	<b>PLO4:</b> Use effective command of the English language for professional communication
	<b>SLO1:</b> Design a wide range of applications in the real-world using knowledge and skills in one or more specializations including Computer Science (CS), Database Systems (DB), Network and Security (NS), Software Engineering (SE), Health Information Technology (HT), Interactive Multimedia Technology (MT), Information Systems Management (IS), and Artificial Intelligence (AI)
	<b>SLO2:</b> Develop ICT-based solutions or ICT-based research with the awareness of advanced technologies using ICT professional practices and lifelong learning skills

## PROGRAM COMMITTEE

**Program Chair:** Lect. Dr. Pawitra Liamruk

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**Committee:**

Asst. Prof. Dr. Morakot Choetkiertikul

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# ICT MAHIDOL STUDENT

## STUDENT ATTIRE

Students are required to wear proper university regular uniform while attending all classes, taking exams, using university facilities and services. For special occasions, a formal uniform will be required. Mahidol University student attire regularly used is shown below:







ICT MAHIDOL



ICT MAHIDOL

The Faculty of ICT, Mahidol University would like to ask for the cooperation from all students to

**Dress in proper Mahidol University Uniform**

Wear the plain black- or dark colored shoes, or plain sport shoes and always put on yearly ID strap when you are inside the faculty area.

***No! flip-flops or sandals***



Mahidol University student  
 Mahidol University student  
 Mahidol University student  
 Mahidol University student

Special thanks to  
 Miss. Kanyarat Assavanich, Mr. S. Uthairat, N. V. Itan, Sumritda Uthairat, Yodch

**Male Regular Uniform**

- ID card with the strap
- Tucked-in plain white shirt
- Leather or suede belt with the Mahidol University buckle
- Navy blue or black dress pants (No Jeans)
- Socks which cover the ankle
- Plain black or dark colored shoes, or plain sport shoes (No Flip-flops or Sandals)

**Female Regular Uniform**

- ID card with the strap
- Plain and not-too-sheer white blouse; Must not be tight
- Length should be enough to be completely tucked in the skirt
- Length of the sleeves is above the elbow
- The Mahidol University brooch is pinned on the right side of the blouse
- Leather or suede belt with the Mahidol University buckle
- Knee-length, plain dark blue or navy blue or black skirt
- Black or dark colored shoes which cover the heel, or plain sport shoes (No Flip-flops or Sandals)

**Male Formal Uniform**

- ID card with neck cord
- Tucked-in plain white long-sleeved shirt
- Navy blue necktie with the Mahidol University logo
- Leather or suede belt with the Mahidol University buckle
- Navy blue dress pants (No Jeans)
- Black socks
- Dress black shoes

**Female Formal Uniform**

- ID card with neck cord
- Plain and not-too-sheer white blouse
- Length should be enough to be completely tucked in the skirt
- Must not be tight
- Length of the sleeves is above the elbow
- A navy blue Mahidol University logo bowtie
- The Mahidol University brooch is pinned on the right side of the blouse
- Leather or suede belt with the Mahidol University buckle
- Straight knee-length, plain dark blue or navy-blue skirt
- Black court shoes

## STUDENT DISCIPLINE

Students must follow the regulations of the Code of Conduct:

1. Students must maintain the unity, peace, reputation and honor of the University; they must not cause disorder, engage in the physical assault, or destroy the property of the University or that of others.

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2. Students must behave in a polite manner and must not behave in any way causing disgrace and damage to themselves, other persons, or the University.

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3. Students must obey instructors and duty officers of the University.

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4. Students must wear the student uniform or appropriate clothes in modest attire in accordance with the regulations and announcements of the University or its working units.

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5. Students must not drink alcohol or intoxicants on the University campus or while they are wearing student uniform.

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6. Students must not smoke in the nonsmoking area of the University.

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7. Students who engage in the following behavior will be subject to serious disciplinary action:
  - Gambling or engaging in any act relating to or promoting all kinds of gambling
  - Any act concerning a narcotics drug offense with criminal penalties
  - Any act concerning a property offense with criminal penalties, which is an outrageous act
  - Any act purposely destroying the University property causing damage to the University
  - Possessing or carrying firearms or other dangerous materials on campus which may cause danger to the lives and property of other persons
  - Committing an obscene act, or a sexual offense, or immoral conduct causing serious disgrace to the University
  - Physical assault on others that results in serious injury or death, or causes serious disgrace to the University

- Being ultimately sentenced to imprisonment except for a punishment for an offense committed by negligence or a petty offense
- Cheating on an examination or evaluation of the University's academic performance or plagiarism of a thesis or an independent study
- Producing, publicizing or possessing media, drawings, printed or written materials, electronic media or any other acts that may cause serious damage to the University
- Forging the signatures of others; forging documents or amending any content in actual documents; or using such documents as evidence required by the University, all of which may cause serious damage to the University
- Committing any act causing dishonor to the University's student status and resulting in serious disgrace to the University

Students who engage in the following behavior will be subject to serious disciplinary action:

In the case of minor disciplinary infractions: Warning or on parole

In the case of serious disciplinary infractions:

- Disqualification from examinations for all courses or some courses
- Academic suspension for not more than one academic year
- Suspending or delaying the approval of graduation for not more than one academic year
- Dismissal

## CLASSES

Students are required to wear proper attires to attend classes. Students are expected to attend classes regularly and be on time. There will be a regular attendance checking for all classes.

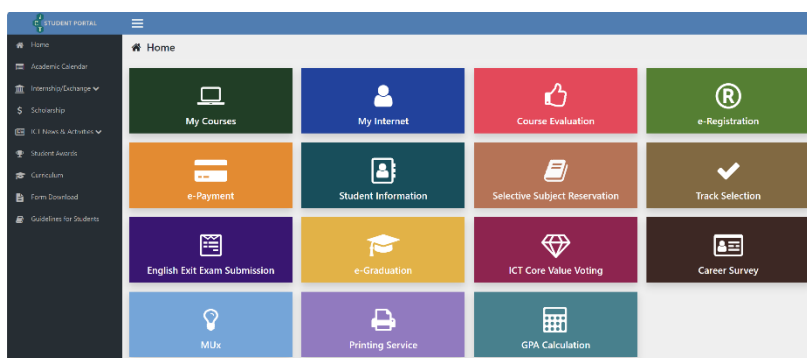
A total of **80% attendance** is required to be eligible for the examination. If students can no longer attend a class or want to drop a class, they must submit a withdrawal or drop form at the ICT office. Otherwise, they will receive the grade F for the class.

Students should let the instructor know beforehand if they have any valid reason to leave the class early or to come to class late. If students were absent from a class with valid reasons such as being sick or personal emergency, they should submit the class absence form to the instructor. If it happens that the class had a quiz or test, it is up to the instructor's decision whether to give make-up test for students or not. The class absence form can be found in the [ICT Student Portal](#).



**80%**  
attendance

Students are not allowed to have food or drinks in the classroom. Smoking is prohibited everywhere in the ICT building.



## EXAMINATION

During the examination period, students must check the exam schedule, location, and the exam instructions at the ICT Exam Schedule System<sup>1</sup> in the ICT Student Portal. Please note that arriving late for more than 30 minutes will be considered as absent.



If students are absent from the exam, students may request to take the re-examination at the ICT counter service. Score deduction and the re-examination fee may apply.

For more information on how to enter the exam room, please visit the Guidelines for Students webpage in the ICT Student Portal.

## EXAMINATION

<sup>1</sup> <https://academic.ict.mahidol.ac.th/Student/StudentInfo/ExamSchedule.aspx>

## ACADEMIC DISHONESTY

Academic dishonesty is a serious offense. Academic dishonesty includes, but not limited to, the followings:

- **Cheating:** Using unauthorized means to copy another person's work for academic assignments or during the exam and submit work and claim a credit without one's own effort.

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- **Fabrication:** Making up data, information, procedures or research results.

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- **Falsification:** Altering information such as a grade, an exam paper, academic records, experimental results, or forging someone's identification, or intentionally citing a false source of information.

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- **Multiple Submissions:** Submitting full or partial portion of the same academic work for credit more than once.

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- **Plagiarism:** Reproducing work or idea of someone else as one's own in any academic exercise without a permission of the owner or without any acknowledgement to the source.

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- **Complicity:** Helping or attempting to commit an academically dishonest act.

Any form of academic dishonesty will lead to one or the combination of the disciplinary punishments (as mentioned above) and academic punishments





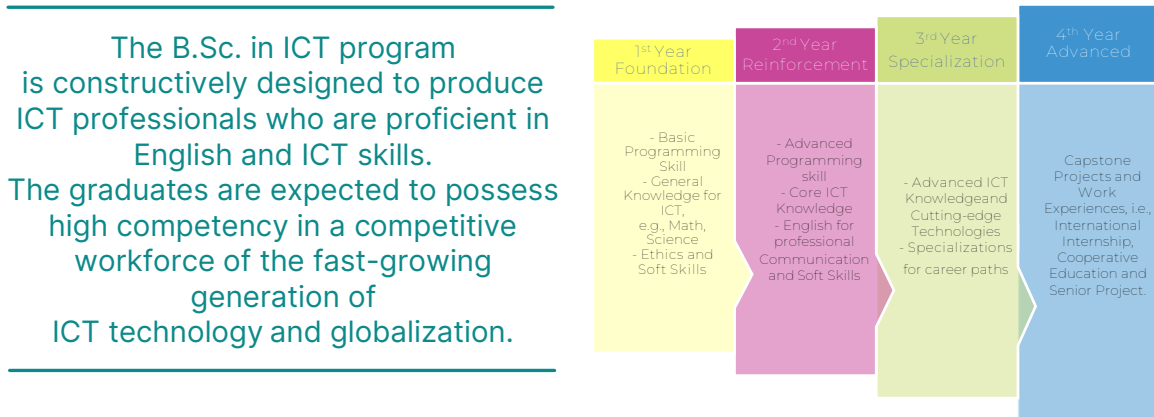
## ACADEMIC CALENDAR

The B.Sc. in ICT program is a 2-semester program, while the summer classes are offered as only as needed and as agreed upon by the program committee. The calendar of the program is as follows:

<b>First-semester</b>	August – First week of December
<b>Second-semester</b>	January – First week of May
<b>Summer break</b>	Second week of May – July

Each semester consists of 16 weeks. Lectures are normally given for 15 weeks, and the last week of the semester will be the final exam week.

## STUDENT JOURNEY



In the first year, students must take basic courses in various literacies as defined by Mahidol University. These subjects provide the fundamental principles for systematic problem-solving and analytical skills, forming the basis for integrating ICT into real-world applications, particularly in industry, business, and management.

During the second and third years, students will gain core and specialized ICT knowledge tailored to their interests. In the final year of the program, students will enhance their lifelong learning skills through self-study on advanced technologies and research, culminating in a capstone project.

In particular, the program offers English courses taught by native English instructors to promote an intensive English language learning environment making English language proficiency become the crucial element for graduates to be successful in studying and working in the ICT industry.

## CURRICULUM STRUCTURE

In accordance with the Commission on Higher Education Standards' criteria for bachelor's degree programs B.E. 2565, students are required to acquire no fewer than 120 credits.

<b>(1) General Education</b>	<b>no less than</b>	<b>30</b>	<b>credits</b>
Creativity Literacy		2	credits
Health and Self-development Literacy		2	credits
Science and Environmental Literacy		2	credits
Finance and Management Literacy		2	credits
Inter-cultural and Global Awareness Literacy		2	credits
Civic Literacy		2	credits
Required Language Courses		12	credits
<b>(2) Special Courses</b>	<b>no less than</b>	<b>84</b>	<b>credits</b>
Core Courses		12	credits
Required Courses		48	credits
Elective courses (Specialization)		18	credits
Capstone courses		6	credits
<b>(3) Free Elective</b>	<b>no less than</b>	<b>6</b>	<b>credits</b>

## STUDY PLAN

Check the Bachelor of Science in ICT program [Program Specification](#) or study plan on the website of the Faculty of ICT for more details. Students receiving an **F** from a prerequisite course may result in graduation delays.

**See Full course description in Section 3, Page 25-100 in the Bachelor of Science in ICT program Program Specification**

Year of Study	General Education [30]		Required Courses [84]			Free Electives [6]
	Literacy [18]	Core English [12]	Core Math [12]	Core ICT [54]	Specialization [18]	
<b>Year 1</b>	█	█	██████████	██████████	██████████	
<b>Year 2</b>	██████	██████	██████████	██████████	██████████	█
<b>Year 3</b>	██████	██████	██████████	██████████	██████████	██████
<b>Year 4</b>	██████	██████	██████████	██████████	██████████	██████

↓  
Senior Project + Coop/Internship

### Year 1

Course Name		Credits		Prerequisites
		Lect.	Lab	
<b>Semester 1</b>				
ITLG 111	Technical English I	1	1	-
ITCS 111	Linear Algebra and Calculus for Computing	3	-	-
ITCS 112	Discrete Structures	3	-	-
ITCS 113	Fundamentals of Programming	2	1	-
ITCS 114	Introduction to Computer Ethics	1	-	-
	General Education Courses	8		-
<b>Total</b>		<b>20</b>		
<b>Semester 2</b>				
ITLG 121	Reading Skills	1	1	ITLG 111
ITCS 121	Probability and Statistics for Computing	3	-	-
ITCS 122	Numerical Methods	3	-	-
ITCS 123	Object Oriented Programming	2	1	ITCS 113
ITCS 124	Introduction to Digital Systems	3	-	-
ITCS 126	Introduction to Entrepreneurship	3	-	-
	General Education Courses	4		-
<b>Total</b>		<b>21</b>		

**Year 2**

Course Name		Credits		Prerequisites
		Lect.	Lab	
<b>Semester 1</b>				
ITLG 211	Technical English II	1	1	-
ITCS 213	Computer Organization and Architecture	3	-	ITCS 124
ITCS 214	Data Structures and Algorithm Analysis	3	-	ITCS 123
ITCS 215	Introduction to Interactive Multimedia Technology	3	-	-
ITCS 216	Fundamentals of Database Systems	3	-	-
ITCS 217	Computer Data Communication	3	-	-
	General Education Course	2		-
	Free Elective Course	2		-
<b>Total</b>		<b>21</b>		
<b>Semester 2</b>				
ITLG 221	Public Speaking and Presentation	1	1	-
ITCS 223	Introduction to Web Development	2	1	ITCS 123 ITCS 216
ITCS 224	Fundamentals of Information Systems and Software Development	3	-	-
ITCS 225	Principles of Operating Systems	3	-	ITCS 213 ITCS 214
ITCS 226	Introduction to Computer Network	3	-	ITCS 217
ITCS 227	Introduction to Data Science	3	-	-
	General Education Course	2		
	Free Elective Course	2		
<b>Total</b>		<b>21</b>		

**Year 3**

Course Name		Credits		Prerequisites
		Lect.	Lab	
<b>Semester 1</b>				
ITLG 311	Business Communication	1	1	ITLG 121 ITLG 211
ITCS 311	Computer and Business Ethics	2	-	-
ITCS 312	Computer and Communication Security	3	-	ITCS 225 ITCS 226
	Elective Courses (Specialization)	6		-
	General Education Course	4		-
	Free Elective Course	2		-
<b>Total</b>		<b>19</b>		
<b>Semester 2</b>				
ITLG 321	Academic Writing	1	1	ITLG 121 ITLG 211
	Elective Courses (Specialization)	9		
	Free Elective Course	2		
<b>Total</b>		<b>13</b>		

**Year 4**

Course Name		Credits		Prerequisites
		Lect.	Lab	
Semester 1				
	Elective Courses (Specialization)	3		-
	Capstone course	6		-
	<b>Total</b>	<b>9</b>		
Semester 2				
	Capstone course	6		
	<b>Total</b>	<b>6</b>		

**SPECIALIZATION IN ICT**

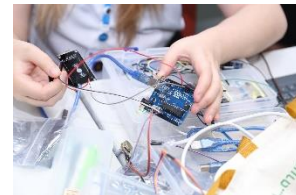
For elective (specialized) courses, students must complete at least 18 credits from courses across all specializations. Some elective courses may cover more than one specialization. (see the full list and details of the specialization courses in the [Program Specification](#)).

**If students complete at least 15 credits within a single specialization, they will earn a minor in that specialization.**

The B.Sc. in ICT program offers 8 areas of specialization, which are closely related to career paths and academic areas of interest, including:

**Computer Science (CS)**

This specialization focuses on the applications of computer science theories to solve real-world problems. Students will study core computer science-related topics, such as Foundations in Computer Science, Algorithms Design and Analysis, Principles of Compiler Design and Theory of Computation (CS)

**Database Systems (DB)**

The Database Systems specialization covers both fundamental and applied concepts in database management systems. Students will develop their theoretical and practical skills in applying database technologies to real-world problems, such as, Database Design, Database Administration, Data Warehousing and Business Intelligence, Information Retrieval and Text Mining etc.





## Network and Security (NS)

In this specialization, students will learn and practice the related-concepts of Computer Networks and Cybersecurity, such as, Local Area Networks and Network Management, Wireless and IoT Networking, Cloud Computing Systems, Services and Applications and Advanced Cybersecurity, etc.



## Software Engineering (SE)

The Software Engineering specialization focuses on a systematic approach to the development process, analysis, design, implementation, testing, maintenance, and quality assurance of software. Students will learn the fundamentals of software development such as requirements elicitation and analysis, software implementation, code review, automated software engineering tools and techniques, and software development lifecycle and methodologies such as Agile, Scrum.



## Health Information Technology (HT)

This specialization focuses on applying information technology for developing health and healthcare applications to deliver quality care. Students will study fundamentals in healthcare systems, clinical information systems, management information systems in healthcare organizations, as well as information privacy and security in healthcare.



## Interactive Multimedia Technology (MT)

The Interactive Multimedia Technology specialization focuses on the application of various multimedia technologies to create interactive systems to support a variety of fields, such as art, education, entertainment, engineering, medicine, and science. Students will study essential topics including Computer Graphics, Digital Storytelling and Visual Design, Virtual Reality, etc.



## Information Systems Management (IS)

This specialization focuses on how to use information technology (IT) and information systems (IS) to support and improve the business processes of the organization. Students will study subjects related to Information Systems Management, Information and Business Process Management, Introduction to Experience Design, etc.



## Artificial Intelligence (AI)

This specialization in Artificial Intelligence covers the fundamentals and applied concepts of artificial intelligence in various fields to solve practical problems. Students will learn core artificial intelligence subjects such as Introduction to Machine Learning, Deep Learning, Introduction to Natural Language Processing, Introduction to Computer Vision, etc.



## CAPSTONE COURSES

Students can choose capstone courses to enhance their skills and experiences with the approval of their project advisor and the program committee.

ITCS 396	Internship	6	credits
ITCS 397	Cooperative Education	6	credits
ITCS 491	Senior Project I	3	credits
ITCS 492	Senior Project II	3	credits

In senior projects, students study existing works to identify pain points and potential improvements. Once the scope of the senior project is determined, they design and implement solutions to address a specific real-world problem, focusing on either research or application, under the supervision of their advisor.

The internship project involves collaboration in research with our partner universities, while the cooperative project focuses on working on a project with a partner company. These capstone courses enable students to gain professional experience and develop basic research skills in ICT-based topics under the supervision of experienced researchers and experts, providing valuable opportunities through internships and cooperative education.

## REGISTRATION AND FEE

Students are responsible for their own class registration during registration periods via the ICT e-Registration system. A student is officially registered and eligible to attend classes only when registration is completed with tuition fees paid or properly settled. Failure to pay tuition fees will result in the student's grades, records, and transcripts being withheld. Registration for a subsequent semester may not be permitted without proper financial settlement.

Mahidol University fees cover the usage of university facilities including sporting grounds, health service centers, library and learning resource centers, computing and Internet services, and student activity centers. In addition, students should prepare for additional expenses such as textbooks, studying materials, and personal expenses.

### Tuition Fees of Bachelor of Science Program in Information and Communication Technology (International Program)

1 <sup>st</sup> Semester		2 <sup>nd</sup> Semester		Summer
Thai students	International students	Thai students	International students	Thai & International students
75,000 (THB)	90,000 (THB)	75,000 (THB)	90,000 (THB)	25,000 (THB)

For the students who have the studying years more than the 4 years or make the Registration less than 9 credits, the Tuition fee is accounted as 25,000 Thai Baht per a semester.

## LATE REGISTRATION AND ADD / DROP PERIOD

Students who do not register during the Registration Period can register during the Late Registration and Add/Drop Periods (2,000 Baht will be charged for ICT for late registration)

The Add/Drop Period is arranged as follows: 1) First week of the Summer Semester. 2) First 1 week of the Summer Semester. During the Add/Drop period, students can change their schedule with no additional charges. The request to change a course or section must be approved by the Academic advisor.

## COURSE WITHDRAWAL

Students are allowed to withdraw from a course they no longer wish to continue. The withdrawal period typically occurs during the first 2 weeks of the semester (or the first week for the summer semester). Please check the withdrawal period in ICT MyCourses and contact the ICT registrar unit via email for more information.

## ACADEMIC DOCUMENT

Students can make a request via the ICT counter service or email: [ictregistrar@mahidol.ac.th](mailto:ictregistrar@mahidol.ac.th). The academic documents include:

- Transcript / Grade Report
- Student Confirmation Letter
- Confirmation Letter of Expected Graduates
- Student ID Card

Students are required to submit a request form and pay the document fee. The document processing time may take up to 3 business days, excluding weekends.

## GRADING SYSTEM

The student assessment and graduation are followed the academic regulation of Mahidol University for Bachelor Degree study (year 2009 and year 2017). Grade letters and meaning of the assessments are shown below:

Grade	Achievement	Level Value
A	Excellent	4.00
B+	Very Good	3.50
B	Good	3.00
C+	Fairly Good	2.50
C	Fair	2.00
D+	Poor	1.50
D	Very Poor	1.00
F	Fail	0.00

In some, the letter grades without credit points can be assigned below:

<b>Grade</b>	<b>Achievement</b>
AU	Audit
O	Outstanding
S	Satisfactory
T	Transfer of Credit
U	Unsatisfactory
I	Incomplete
P	In Progress
X	No Report
W	Withdrawal



## GRADUATION

Students can qualify for Bachelor of Science in Information and Communication Technology (International Program) when they satisfy the following criteria:

- 1) Achieve all program learning outcomes and fulfill the subjects in accordance with the program curriculum, which has the minimum requirements of 120 credits including a minimum of 30 credits of general education courses, a minimum of 84 credits of specific education courses and a minimum of 6 credits of free elective courses.
- 2) Have the cumulative grade point average of at least 2.00 at the completion of the program.
- 3) Students need to pass an English Exam, with minimum level of English of
  - IELTS 5.5
  - TOEFL Paper-based and ITP 525 / Internet-based 70
  - TOEIC 620
  - MUELT 89
  - Duolingo 90

or pass the other standard criteria stated in the faculty's and the university's announcement.

- 4) Having a minimum grade as **C** for the Fundamental of programming, Public Speaking and Presentation, and Academic Writing courses.
- 5) Have no debt obligations with Mahidol University.
- 6) Not under student status suspension.

In the case that students cannot fulfill the B.Sc. (in Information and Communication Technology) graduation criteria, students may qualify for an undergraduate diploma (in Information and Communication Technology) when the total number of credits is not below 100 credits and the graduation criteria for the undergraduate diploma have been fulfilled.

To request for graduation, students must meet the following requirements.

- 1) Be students who registered and received passing grade in all courses as required in the program study plan.
- 2) Pass the requirement of core courses and core activities as required by the Faculty and Mahidol University.
- 3) Pass the English proficiency requirement required by the Faculty.
- 4) Students who satisfy with requirement (1) and (2) can submit a request form for graduation to the Office of Registrar within the

deadline provided by the University. Otherwise, they will not be considered to graduate within that academic semester.

## HONOR AND AWARDS

To recognize the outstanding achievements, students who maintain a high scholastic cumulative GPA are eligible for graduation with the honors.

- **First Class Honor:** Earn a cumulative GPA of 3.50 or higher
- **Second Class Honor:** Earn a cumulative GPA of 3.25 and 3.49

In additions, students who have earned a cumulative GPA between 3.25 and 4.00 will be eligible for honors if they meet all of the following requirements according to Mahidol University regulations:

- *Complete all courses required within 4 years*
- *Never receive an F, W or I grade for any course.*
- *Never regrade or reexamination any course.*

## PROBATION

After the first two regular semesters, students are classified under the following status:

1. **Regular** status when student's cumulative GPA is 2.00 or higher.
2. **Probation Type 1** when student's cumulative GPA is 1.50 or higher, but less than 1.80
3. **Probation Type 2** when student's cumulative GPA is 1.80 or higher but less than 2.00

Students will be removed from probation status when the student achieves a cumulative GPA of 2.00 or higher. Failure to achieve the minimum Cum-GPA standard during the designated probation period will result in dismissal as stated in the Mahidol University Regulations on Diploma and Undergraduate Studies 2009, Rule No. 18.3.

## **DISMISSAL**

Students who fall into one of the following categories will be dismissed from the program.

- Students with a cumulative GPA below 1.50.
- Students with a cumulative GPA below 1.80 for two consecutive semesters.
- Students with a cumulative GPA below 2.00 for four consecutive semesters.
- Students who have repeatedly violated the university rules and regulations governing student conducts including: plagiarism of assignments, cheating during examinations, drug use, damage to the university's properties or reputation, gambling, stealing and other inappropriate behaviors.

# STUDENT AFFAIR

## ACTIVITY TRANSCRIPT

According to the Announcement of Mahidol University, Requirement for Students to Participate in Mahidol University Students' Extracurricular Activities, B.E. 2564 (2021)<sup>2</sup>, students must

- participate in and complete the activities at least 100 according to the structure of the activities and
- be a member of at least one university club

The structure of activities **include**:

1. **Mahidol HIDEF** activities: at least 3 out of 5 literacy areas, with a minimum of 10 hours per literacy:  
H: Health Literacy  
I: Internationalization Literacy  
D: Digital Literacy  
E: Environment Literacy  
F: Financial Literacy



2. **Volunteer** activities at least 10 hours
3. Participate in New **Student Orientation** (MU or ICT)
4. Other activities supporting **21<sup>st</sup> Century Skills**

Student who complete the requirement will receive an Activity Transcript (AT) upon graduation. The Activity Transcript can be used as a supporting document when applying for a job, applying for a Scholarship for Further Study / Student Exchange Scholarship both in Thailand and abroad.

The Faculty of ICT typically organizes events and activities every Wednesday afternoon, which can be counted as AT hours. Students can also visit [www.activity.mahidol.ac.th](http://www.activity.mahidol.ac.th) to search for activities and view their Activity Transcript.

<sup>2</sup> Requirement for Students to Participate in Mahidol University Students' Extracurricular Activities, B.E. 2564 (2021): <https://op.mahidol.ac.th/sa/hidef/>

## HEALTH SERVICES

For minor health problems, students can visit the **First Aid Room** available for accessing services at the 2<sup>nd</sup> floor, the ICT Building. A nurse is available from Monday to Friday, from 9:00 a.m. to 4:00 p.m.

Students are also eligible to use healthcare services and hospitals across the Mahidol University campus, including the **MU Health Centre** located on the Ground Floor of the MU Learning Center. Service hours are from 8:30 a.m. to 4:30 p.m., Monday to Friday. There are also 4 hospitals under the supervision of Mahidol University:

- Golden Jubilee Medical Center
- Phutthamonthon Hospital
- Siriraj Hospital
- Ramathibodi Hospital



Prior to receiving the services, students must promptly present their identification card and student identification card. For more information, visit the Student Healthcare Service: <https://mahidol.ac.th/new-current-student/student-health-care/>

In case students are admitted in hospitals which are not affiliated with Mahidol University network, to avail the benefits they need to transfer within 72 hours to the hospital under the supervision of Mahidol University: <http://www.orsa.mahidol.ac.th/main/service/health/th/>

## MENTAL HEALTH COUNSELING

In case students have problems about mental health and need counseling, the Faculty of ICT provides the services below.  
Faculty of ICT Services:

- Advisor or Aj.Baan or Instructors
- The Nurse in the First Aid Room at IT210S
- Staff from Academic Services Division

Students can receive the counselling services from Mahidol University as follows:

- **Adolescent Clinic**, Mahidol University 4<sup>th</sup> Floor, Panyawattana Building, National Institute for Child and Family Development  
Tel. 0-2441-0602-8 ext. 1202, 1208 or 094-461-2407
- **Mahidol Friends**  
3<sup>rd</sup> Floor, Mahidol Learning Center (MLC) or Facebook page: MU Friends, Facebook page: MU Friends
- **MU Hotline Counseling** (24 hours) Tel.088-874-7385

## ICT STUDENT ASSOCIATION

The ICT Student Association (SMO) is a student body that plans and budgets student activities and MUICT clubs. The aim of the student association is to foster good relationships among the students, faculty members, and staff, as well as to provide a safe environment for students to practice their leadership and teamwork skills. The ICT Student Association consists of a party that represents all students and student representatives from ICT and DST programs. Each year, students in the Faculty of ICT will elect a new party and representatives by voting.

The Student Activities Supervisory Board oversees and guides the ICT Student Association.

## ICT CLUBS

Student clubs are special interest groups that gather for extracurricular activities. The clubs are supervised by the ICT Student Association. By participating in clubs, students not only have opportunities to practice, develop, and improve their academic, communication, and leadership skills but also create, develop, and nurture the society and communities in which they live. Additionally, students are encouraged to become responsible citizens by giving back to their communities through service projects.

The current clubs of the Faculty of ICT include:

1. ICT Dev Club
2. ICT AI Club
3. ICT Music Club
4. ICT Maker Club
5. ICT Cybersecurity Club



## FACILITIES AND SERVICES

### Meeting room and Coworking space

The Faculty of ICT offers numerous facilities to promote a learning-friendly environment. On the 2<sup>nd</sup> and 3<sup>rd</sup> floors of the ICT Building, co-working spaces are available for students to meet and discuss with friends, advisors, and staff. Additionally, students can book a meeting room on the 1<sup>st</sup> floor for organizing meetings, tutoring sessions, or group projects. Both the meeting room and co-working spaces are equipped with LED monitors, proper connections, appropriate lighting, Wi-Fi hotspots, and electrical outlets in every room. More information on how to book the meeting room can be found in the [ICT Student Portal](#).

### Printing Service

The Faculty of ICT offers the printing services at the co-working spaces on the 2<sup>nd</sup> and 3<sup>rd</sup> floor. Students can have up to 400 pages per year and can check the quota from <http://std.ict.mahidol/print/>

### The Innovative Space

The innovative space inside the ICT building is designed to support a good working and relaxing environment for students. All ICT students can use this public area to organize many events, for example, activities between student-to-student and student-to-academic advisor, the ICT Open House activity, Sport events, etc.

### MU Library

Salaya Campus is the hub of the Mahidol University Library and Knowledge Center (MULKC) providing quality library services to students to have access (online and offline) to learning and research resources such as textbooks, journal articles, magazines, videos, audio books, and newspapers. The Mahidol University Library can accommodate up to 1,000 students at any given time. The Mahidol University Library is open 24 hours a day during the examination period. All students can access online books, journals and magazines at any time at <http://www.li.mahidol.ac.th>.

### Sport and Recreation

Mahidol University provides accessible recreation and sports facilities to promote healthy lifestyles and well-being for students. At the Salaya



campus, there are various sports complex services, including multi-purpose buildings, indoor stadiums, and outdoor fields and courts for football, athletics, basketball, futsal, volleyball, swimming, badminton, and tennis. Additionally, the Division of Student Affairs offers sports facilities such as a fitness room, table tennis room, and squash room on the 3<sup>rd</sup> floor of the MLC building.

### **Campus Transportaion**

For on-campus travel, students can use the university's on-campus trams that operate within the Salaya campus. There are 16 trams available, divided into 4 routes across the campus. Cycling is encouraged as a means for people to commute around campus and in support of the university's policy to improve the quality of life of its staff and students'. Moreover, bicycles are provided to rent free of charge.

For inter-campus travel, Mahidol University provides a free shuttle bus service for staff and students between the Salaya, Phayathai, and Bangkok Noi campuses.

Additionally, Mahidol University offers the Salaya Link, a convenient non-stop shuttle service between Mahidol University and the Bang Wa BTS Station. One-way tickets cost only 30 Baht, and the journey takes approximately 30 minutes.

# CAREER PATH

## SPECIALIZATION AND CAREER

The B.Sc. in ICT program offers 8 areas of specialization, closely aligned with various career paths and academic interests. The following guidelines provide a list of top career options for ICT graduates, along with the recommended and optional courses for each specialization.

**Note:** The symbol ● represent **"Recommended"** courses to register to support the career the and the symbol ○ represents the **"Optional"** ones.

Example careers and related courses in the **CS** Specialization

Courses in CS Specialization	Computer Scientist	Specialized Researcher	Graduate Study
ITCS 331 Organization of Programming Languages	●		
ITCS 419 Foundations in Computer Science	●	●	●
ITCS 426 Algorithms Design and Analysis	●	●	●
ITCS 427 Theory of Computation	●	●	●
ITCS 436 Intro. to Parallel and High Performance Computing	○		
ITCS 440 Principles of Compiler Design	●		
ITCS 475 Mathematical Programming	○		
ITCS 498 Special Topics in Computer Science	○		

Example careers and related courses in the **DB** Specialization

Courses in DB Specialization	DB Programmer	DB Designer	DB Admin	Data Engineer	Data Scientist
ITCS 441 Information Retrieval and Text Mining	○	○	○	○	○
ITCS 442 Relational Database Design	●	●	●	●	●
ITCS 444 Data Mining	○	○	○	○	○
ITCS 446 Database Administration	●	●	●	●	●
ITCS 448 Data Warehousing and Business Intelligence	●	●	●	●	●
ITCS 449 Introduction to Big Data Management	○	○	○	○	○
ITCS 454 Special Topics in Database Systems	○	○			

Example careers and related courses in the **NS** Specialization

Courses in NS Specialization	Network Administrator	IoT Engineer	Cybersecurity Engineer
ITCS 447 Embedded Systems and Internet of Things		●	
ITCS 460 Introduction to Penetration Testing			●
ITCS 462 Internet of Things Security and Privacy		●	○
ITCS 464 Advanced Cybersecurity			○
ITCS 466 Local Area Network and Network Management	●		
ITCS 467 Special Topics in Computer Networks, IoT and Cyber Security	○	○	○
ITCS 468 IT Auditing	○		●
ITCS 469 Wireless and IoT Networking	●	●	
ITCS 499 Cloud Computing Systems, Services and Applications	●	○	○

Example careers and related courses in the **SE** Specialization

Courses in SE Specialization	Software Eng.	DevOps Eng.	SQA / Test Eng.	Business Analyst	System Analyst
ITCS 379 Practical Software Engineering	●	●	●	●	●
ITCS 382 Software Design and Modelling	●	○	○	●	●
ITCS 383 Software Construction and Evolution	●	●	●	○	○
ITCS 384 Software Process and Quality Assurance			●		○
ITCS 385 Software Architecture	○	●	●	●	●
ITCS 386 Software Verification and Validation	●	●	●	○	○
ITCS 470 Software Requirements Engineering	●	○	○	●	
ITCS 472 Software Metrics	●	○	○		●
ITCS 490 Special Topics in Software Engineering	○	○	○	○	○
ITCS 387 Project Management and Practice (IS)	○	○	○	○	○

Example careers and related courses in the **HT** Specialization

Courses in HT Specialization	Healthcare System Admin	Data Engineer	Data Scientist
ITCS 404 Information Technology for Healthcare Services	●	○	○
ITCS 405 Information Models and Healthcare Information Standards	●	●	●
ITCS 407 Practical Healthcare Management	○	○	○
ITCS 409 Special Topics in Healthcare Systems	●		
ITCS 410 Practicum in Health Information Technology	●		
ITCS 448 Data Warehousing and Business Intelligence (DB)	○	●	●
ITCS 389 Introduction to Machine Learning (AI)	○	●	●

Example careers and related courses in the **MT** Specialization

Courses in MT Specialization	Game Dev.	3D App Dev.	Concept Art Designer	Modeler	Animator
ITCS 315 Introduction to Animation Technology and Basic 2-D Assets			●	●	●
ITCS 316 2-D Asset Pipeline			●	●	○
ITCS 317 2-D Rigging and Motion Animation			○	○	●
ITCS 318 2-D Production			○	○	○
ITCS 321 Digital Storytelling and Visual Design	○		●		○
ITCS 322 Virtual Reality	○	●			
ITCS 324 Special Topics in Interactive Multimedia Technology	○	○	○	○	○
ITCS 325 Data Visualization		○			
ITCS 327 Assistive Technology and Accessibility	○	○	○		
ITCS 328 Introduction to Animation Technology and Basic 3-D Assets	●	●	●	●	●
ITCS 329 3-D Asset Pipeline	●	○	●	●	●
ITCS 330 3-D Lighting and Rendering	○	○	○	●	○
ITCS 332 3-D Rigging	○	○	○		
ITCS 333 3-D Animating	○	○	○		●
ITCS 334 3-D Visual Effects	○	○	○		●
ITCS 339 Technology for Game Development	●	●			
ITCS 344 Game-Level Development	●	●			
ITCS 345 Game Logic and Game Play Development	●	●			
ITCS 416 Introduction to Computer Vision	○	○			
ITCS 481 Computer Graphics	●	●		●	●
ITCS 314 Introduction to Experience Design	○	○	○		

Example careers and related courses in the **IS** Specialization

Courses in IS Specialization	Business Analyst	System Analyst	IT/Digital Consultant	Sale Consultant	Solution Designer	UX/UI Designer
ITCS 311 Information Systems Management	•		•	•	•	•
ITCS 312 Special Topics in Information Systems	○		○		○	
ITCS 313 Entrepreneurial Practice	○	○			○	○
ITCS 314 Introduction to Experience Design	•	•	•	•	•	•
ITCS 368 Information and Business Process Management	•		○	○	•	•
ITCS 387 Project Management and Practice	•	○	•	•	•	•
ITCS 448 Data Warehousing and Business Intelligence (DB)	•					•
ITCS 382 Software Design and Modelling	•	•	•	•	•	•

Example careers and related courses in the **AI** Specialization

Courses in AI Specialization	Graduate Study	Data Engineer	Data Scientist	ML Engineer
ITCS 346 Time Series Analysis	○	○	○	○
ITCS 347 Recommendation System	○		○	○
ITCS 348 Social Network Analysis	○	○	○	
ITCS 349 Graph Mining	○	○	○	
ITCS 350 Advanced ML Paradigms	○	○		○
ITCS 351 Deep Learning for NLP	○	○		○
ITCS 352 Advanced NLP Applications	○	○		○
ITCS 353 Explainable AI	○	○	○	○
ITCS 354 Deep Learning for CV	○	○	○	○
ITCS 355 ML Operation and Deployment	○		○	○
ITCS 356 Machine Learning with Big Data	○	○	○	○
ITCS 357 Content-Based Search Engines	○	○	○	○
ITCS 358 Affective Computing Basic	○	○		
ITCS 389 Introduction to Machine Learning	•	•	•	•
ITCS 411 Introduction to Artificial Intelligence	○	○	○	○
ITCS 415 Introduction to Natural Language Processing	○	○	○	○
ITCS 416 Introduction to Computer Vision	○	○	○	○
ITCS 417 Deep Learning	○	○	○	○
ITCS 418 Special Topics in AI and Data Science		○	○	

## STUDENT EXCHANGE / INTERNSHIP

Students from the Faculty of ICT have participated in numerous international activities in countries such as Japan, Germany, the United Kingdom, Australia, Norway, China, Taiwan, Malaysia, and Singapore. The experience they gain from these activities is invaluable. The Faculty of ICT strongly encourages all students to seek international experiences. Mahidol University offers Mahidol University Scholarship for Undergraduate Student Mobility Program<sup>3</sup> for students to participate in international activities abroad, including internship programs, student exchange programs, and student workshops.

For more information about international opportunities, please visit the Faculty of ICT's website.

## ICT JOB AND EDUCATIONAL FAIR

The ICT Mahidol is a highly anticipated annual event, Scheduled in the first semester. This fair serves as a hub, connecting students with companies for job applications, intern recruitment, and study abroad opportunities. Students have the chance to engage with potential employers and academic institutions, paving the way for future career and educational pursuits.



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<sup>3</sup> <https://op.mahidol.ac.th/ir/scholarship-for-undergrad/>

