Program Level ☑ Bachelor ☐ Graduate Diploma     Faculty of Information and Communication Technology

☐ Master ☐ Higher Graduate Diploma ☐ Doctor

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

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# MU Degree Profile

| Bachelor's degree Program |
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**1. Program Title**

    (In Thai)     วิทยาศาสตรบัณฑิต สาขาวิชาเทคโนโลยีสารสนเทศและการสื่อสาร (นานาชาติ)

    (In English) Bachelor of Science Program in Information and Communication Technology

           (International Program)

**2. Degree Offered**

    (In Thai)    วิทยาศาสตรบัณฑิต สาขาวิชาเทคโนโลยีสารสนเทศและการสื่อสาร

    (In English) Bachelor of Science in Information and Communication Technology

| General Information of the Program | |
|---|---|
| Type of program | Bachelor's degree: Academic Program |
| Number of Credits | 120 credits |
| Study Duration / Program Cycle | 4 years |
| Program Status and Program Schedule | Revised program in the 1st semester of academic year 2023 onwards |
| Degree Granting | One degree |
| Degree-granting Institutions (MOU with other institutions) | Mahidol University |
| Accreditation Institution | - |

| Specific information of the program | |
|---|---|
| Goals & Objectives | **Goals:**<br><br>To produce graduates with expertise in information and communication technology (ICT) coupled with analytical thinking, presentation and creative skills, and English language skills necessary for professional practice and further study of new knowledge to meet the vision of the Faculty to be a leading institution that can meet the needs of a rapidly changing world in education, research and innovation in computer and digital technology internationally and according to the characteristics of desirable graduates of Mahidol University and to provide a Bachelor of Science program in Information and Communication Technology (International Program) is accredited according to AUN-QA international standards and focuses on student learning achievement (Outcome-based Education). |

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|  | **Objectives:** |
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|  | By the end of the study, graduates will be able to: |
|  | 1. Have knowledge and skills in computer science and information and communication technology, well-versed in science, social sciences, humanities and economics. |
|  | 2. Have the ability to analyze, design, and develop computer software and effectively apply computer hardware. |
|  | 3. Professionalism, ethics, social responsibility and respect the laws related to the field of information and communication technology. |
|  | 4. Ability to solve problems, basic analytical thinking, present and create ICT works based on principles and reasons by oneself. |
|  | 5. Have the necessary English language skills for professional practice and learn more about computer science. |
| Distinctive Features | The students will have well-rounded knowledge in various fields and deep knowledge in specific fields. There is a flexible curriculum structure that allows students to personalize their specialization. The curriculum structure also supports life-long learning skills and international experiences including having partners in cooperation with foreign countries to produce graduates' opportunity in competitive experience, conducting research and working with international companies or organizations. |
| Educational System | Semester |
| **Graduates' advancement** | |
| Career opportunities | **1. Academic area**<br>   e.g., Computer Science Educator, Computer Scientist, Data Scientist, Data Engineer<br>**2. System Design and Development area**<br>   e.g., System Analysts and Designers, Corporate Architecture Designers, Electronic Business System Developers, Programmers, Web Developers, User Experience Designers, Software Developer, Software Engineer, Multimedia Developer, Game Developer<br>**3. System Testing area**<br>   e.g., Software Tester, Cyber Security System Analyst<br>**4. System Management and Control area**<br>   e.g., Database Administrators, Network and Server Administrators<br>**5. ICT Entrepreneurs and ICT Application area** |
| Further fields of study | Master's degree or Ph.D. in Information and Communication Technology and related fields |

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| Philosophy in program administration | |
|---|---|
| Educational Philosophy | The program focuses on learning achievement (Outcome-based Education) that the learner is the main component of education. There is a process to enhance knowledge through a combination of theoretical knowledge and instructor guidance in which students are accumulators of knowledge, connect with old and new knowledge to create understanding from virtual situations applied with the experience to solve the problems with creativity. (Learning-Centered; Constructivism and Essentialism Blending) |
| Strategy / teaching guidelines | The program is taught according to the Outcome Base Education (OBE) approach, aiming to achieve the specified learning outcomes. The teaching strategy focuses on active learning by providing a variety of learning activities (Activity-based Learning), Project-based learning and by applying and integrating knowledge in practice, have creative ideas, can extend the existing knowledge to new contexts, emphasizing on practical work, develop the research skills of the students from basic to advanced levels respectively, so that learners can relate their knowledge. using various teaching methods as follows:<br>• Interaction-based Lecture<br>• Lab<br>• Discussion<br>• Cooperative Learning<br>• Experience-based Case Study (Discovery Learning)<br>• Inquiry-based Learning<br>• Coaching<br>• Project-based Learning (Expeditionary Learning) |
| Strategy / student's evaluation guidelines | The program provides the Learning Assessments (PLOs) in the form of Formative Assessment and Summative Assessment, and grades are judged based on theoretical and practical scores of students in various areas according to the learning outcomes as follows:<br>• Quiz<br>• Examination<br>• Observation<br>• Assignment Evaluation<br>• Report Evaluation<br>• Essay Evaluation<br>• Project Evaluation<br>• Presentation Evaluation<br>• Critique Evaluation<br>• Participation Assessment<br>• Self-Assessment |

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| Competences provided to the students | |
|---|---|
| Generic Competences | 1. Equipping with the 21st century skills, including the ability to communicate and present the work in English, the ability to work as a team and manage team relationship, the ability to analyze and solve problems as well as being creative and having leadership skills<br>2. Being able to manage and complete assigned tasks within the specified time effectively.<br>3. Having morals and ethics, responsibility for oneself and the public, and complying with the rules of the society.<br>4. Being able to use software tools or related technology for real-world problem solving. |
| Subject-specific Competences | 1. Having knowledge of specific computer science subjects as follows: Organization and Information Systems, Technology Application, Software Development, Fundamental and Infrastructure, System Architecture<br>2. Being able to apply knowledge of 1 in 8 areas related to the profession in solving problems, making decisions, or developing computer systems (8 areas: Computer Science, Database Systems, Network and Security, Software Engineering, Health Information Technology, Interactive Multimedia Technology, Information Systems Management, Artificial Intelligence).<br>3. Being able to further apply the ICT knowledge in the project, learning outside the classroom, and research work. |
| **Graduates' learning outcomes** | |

At the end of the program, successful students will be able to:

**Program–Level Learning Outcomes: PLOs**

      PLO1:    Solve ICT related problems using critical thinking, problem solving, and ICT disciplinary skills

      PLO2:    Demonstrate abilities to work in ICT related project collaboratively

      PLO3:    Perform the individual, social, and ethical responsibilities of a professional working in ICT-related disciplines

      PLO4:    Use effective command of the English language for professional communication

**Stream Learning Outcomes: SLOs**

      SLO1:    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)

      SLO2:    Develop ICT-based solutions or ICT-based research with the awareness of advanced technologies using ICT professional practices and lifelong learning skills