



Mahidol University Degree Profile

Bachelor's Degree Program	
<p>1. Program Title</p> <p>(In Thai) หลักสูตรวิทยาศาสตรบัณฑิต สาขาวิชาชีวนวัตกรรม (หลักสูตรนานาชาติ)</p> <p>(In English) Bachelor of Science Program in Bioinnovation (International Program)</p>	
<p>2. Degree Offered</p> <p>(In Thai) วิทยาศาสตรบัณฑิต (ชีวนวัตกรรม)</p> <p>(In English) Bachelor of Science (Bioinnovation)</p>	
General information of the program	
Type of the program	Bachelor's Degree (International Program), Academic Program
Required number of credits	Plan A – no less than 122 credits of courses taken while studying at the Faculty of Science, Mahidol University Plan B – No less than 81 credits of courses taken while studying at Faculty of Science, Mahidol University and no less than 240 credits of courses taken while studying at the University of Sussex (equivalent to 60 credits from Mahidol University)
Studying duration / program round	4-Year Program
The program's status and opening schedule	1. Revised Program 2022 2. Program start: Semester 1 Academic Year 2022
Degree granting	One degree of one major
Degree-granting Institutions (MOU with other institutions)	Mahidol University, Thailand
Organizations certifying the standard	-



Specific information of the program	
Purpose / Goals / Objectives	<p>Bioinnovation program has goals in creating graduates who can bring together knowledge in biological sciences and related branches to apply and develop sustainable innovations. The program will develop students to become new generation entrepreneurs and business owners or become the persons who can create innovation leading to intellectual property, patents and start-up businesses using scientific knowledge and technologies.</p> <p><u>Program Objectives</u></p> <p>To produce graduates who have the characteristics, knowledge and skills as follows:</p> <ol style="list-style-type: none"> 1. integrate and apply knowledge in bioinnovation and related sciences to address current and future trends in industry 2. demonstrate practical skills for using instruments, planning and development of bioinnovation related projects using appropriate scientific instruments 3. hands-on experience in a wide range of active research laboratories and industrial internships 4. have responsibility for society, problem solving, critical thinking and creative thinking as well as self development 5. display teamworking skill with professional ethics and 6. interpersonally communicate effectively
Distinctive Features	<ol style="list-style-type: none"> 1. The only international bachelor program in bioinnovation in Thailand 2. Students have an opportunity to study abroad through a double degree MoU with the University of Sussex. 3. Students will receive hands-on experience through summer internships and senior projects in academic and industry setups.
Educational system	Semester System



Graduates' advancement	
Obtainable jobs	<ul style="list-style-type: none"> - Project or policy and plan analyst. - Researcher in R&D or innovation center such as food, medicine, biological products, and agricultural industry. - Consultant for private company both local and international. - Smart farming or precision agriculture experts or specialist. - Entrepreneur in medical, agriculture, and food industry innovation. - Scientist
Further fields of study	Graduate programs in science innovation and related fields including biotechnology, biochemistry, food science and technology, science education, biomedical sciences, material sciences, biomedical engineering, environmental science and other programs in biosciences
Philosophy in program administration	
Educational philosophy	<p>Mahidol University provides quality education that focuses on learners' achievements by means of a learning-centered approach and constructivism theory for self-development of knowledge, abilities, and new skills to achieve the program expected learning outcomes based on outcome-based education, which all learning outcomes can be achieved</p> <p>The philosophy of this program is to develop human resources who will be ready for their future career and become a change agent in Thailand through creation of biological-based innovation in the fields of health and wellness, agriculture and the environment, and food industry. The program will focus on developing the</p>



	graduates with transferrable skills necessary for their future with creative and innovative mindset as well as advance knowledge in science and technology.
Strategy / teaching guidelines	The program is aware of student differences in backgrounds, strengths and weaknesses, interests, and learning styles. Therefore, a range of teaching styles are set through various class-engaging learning activities including active learning, key practical laboratory, individual and group discussions with emphasis on student's demonstration of collaborative and cooperative learning and problem-solving skill.
Strategy / student's evaluation guidelines	The assessments and evaluations align with the teaching strategies and the desired learning outcomes including formative and summative assessments by using a variety of tools such as written and oral examination, practical test, oral presentation, individual or group class participation and assignment report. Rubrics based on the objectives of the course are announced clearly and used to score the students' achievement.
Competences provided to the students	
Generic Competences	<ol style="list-style-type: none"> 1. Ethics: demonstrate moral and ethical behavior and be responsible in their own action including awareness of plagiarism 2. Critical thinking and analysis: be capable of analytical and critical thinking and be able to evaluate both general and scientific information with logical and systematic thinking 3. Creativity: be able to bridge research to innovation which further enhance basic knowledge 4. Communication: be able to choose appropriate forms of communications depending on target



	<p>audience and for academic purposes with awareness of social impacts, ethical guidelines and limitation.</p> <p>5. Collaboration: be able to work with others appropriately and accept the difference between people</p> <p>6. Digital skill: be able to choose the appropriate information technology for searching of information and data and be able to analyze the reliability of data from various sources.</p> <p>7. Lifelong learning skill: be able to integrate learning skills that go beyond specific knowledge or occupational areas and continue to develop the knowledge and skills after formal education and throughout their lives.</p>
<p>Subject-specific Competences</p>	<p>The graduates from this multidisciplinary program will have a wide range of knowledge and experience in natural sciences, applied sciences, biomedical sciences, material sciences, health science, and management and should be able to demonstrate the following competences:</p> <ol style="list-style-type: none"> 1. Conceptual knowledge and skills in basic science related to bioinnovation including biology, chemistry, mathematics, and physics and understanding of the global trends in business, innovation and society 2. Experience in a wide range of practical laboratories and industrial internship with the use of laboratory techniques and scientific instruments in bioinnovation 3. Integration of knowledge and concept of biosciences, business and entrepreneurship with a code of ethics and professional conduct to create sustainable bioinnovation



Graduates' learning outcomes	
PLOs	<p>At the end of the program, successful students will be able to:</p> <ol style="list-style-type: none"> 1. PLO 1: Apply conceptual to identify problems and provide logical solutions by applying knowledge in bioinnovation of interdisciplinary approaches for career in both public and private sectors 2. PLO 2: Carry out industrial and academic works relating to bioinnovation by using appropriate instruments and in accordance with international standard methodologies 3. PLO 3: Create an independent project in bioinnovation under professional code of conduct to solve problems and accomplish new concept and know-how 4. PLO 4: Communicate concepts of bioinnovation clearly and purposefully with peers and academic persons in English using appropriate tools with understanding of social impacts, ethical guidelines and limitation 5. PLO 5: Demonstrate teamworking and problem-solving skills and be able to work independently and with others to achieve the goals based on the given roles and responsibilities 6. PLO 6: Demonstrate knowledge and concept about entrepreneurship, intellectual property, and regulations, especially those that are related to bioinnovation