



Degree Level  Bachelor's  Grad.Dip.  Master's  Higher Grad.Dip.  Doctoral

Mahidol University International College

TQF2 Bachelor of Science Program in Biological Sciences (International Program)

Science Division

## MU Degree Profile



Undergraduate Program	
<b>1. Program Title</b> (Thai) หลักสูตรวิทยาศาสตรบัณฑิต สาขาวิชาวิทยาศาสตร์ชีวภาพ (หลักสูตรนานาชาติ) (English) Bachelor of Program in Biological Sciences (International Program)	
<b>2. Degree Title</b> (Thai) วิทยาศาสตรบัณฑิต (วิทยาศาสตร์ชีวภาพ) (English) Bachelor of Science (Biological Sciences)	
Program Overview	
Type of Program	Bachelor's Degree (International Program), Academic Program
Number of Credits	No less than 168 credits
Duration of Program/ Program Cycle	Four-Year Program
Program Status and Schedule of Program Start Dates	Revised Program 2020 Program start: Trimester I Academic Year 2020
Degree Offered	One degree of one major (Optional double major; one or more minors)
Institution Offering Degree (collaboration with other institutions)	Mahidol University
Organization Certifying the Standards of the Program	-
Specific Data of the Program	
Purpose / Goals / Objectives	<b>Goals:</b> To produce bachelor degree graduates who meet the requirements and specifications of the national



	<p>standards and expectations, and possess Mahidol core values. The graduates will be equipped with knowledge in different biological science disciplines, professional skills, innovative mindset with ethical acumen to serve future employment, graduate studies and social needs.</p> <p><b>Objectives:</b> to produce graduates who are innovative, ethical and professional.</p> <ul style="list-style-type: none"> <li>• To develop graduates who can integrate and apply knowledge as well as technical skills in biological, biomedical and related sciences to address health, societal and environmental issues</li> <li>• To develop students' critical and analytical thinking, thus enabling evidence-based solutions for human well-being</li> <li>• To produce graduates skilled in interpersonal communications</li> <li>• To instill moral and ethical values, thus enabling wise decision-making</li> <li>• To develop graduates as "innovators" with innovative mindset who can formulate original ideas and novel products to serve the social needs.</li> <li>• To prepare students for a broader scope of post-graduate paths, including employment in biological or related sciences, post-graduate studies and professional biomedical degrees</li> </ul>
Distinctive Features	Biological Sciences Program provides academic knowledge from diverse biological disciplines, including biomedical science, biotechnology, bioinformatics, and ecology &



	<p>conservation. Students of the Biological Sciences Program will be trained to utilize integrative knowledge to solve problems and formulate sustainable solutions to serve social needs.</p>
<p>Academic System (semester/trimester/quarter system)</p>	<p>Trimester system</p>
<p><b>Advancement Path of the Graduates</b></p>	
<p><b>Career Opportunities</b></p>	<ol style="list-style-type: none"> <li>1) Work as teaching assistants in the field of Biological Sciences at any academic institutes or universities.</li> <li>2) Pursue a teaching career as primary- and secondary-school teachers in the field of Biological Sciences at any international schools.</li> <li>3) Work in a research and development department of any biological products companies or manufacturers.</li> <li>4) Quality control or quality assurance positions.</li> <li>5) Research assistants in any research institutes and projects or programs.</li> <li>6) In scientific instruments trading and services in private and public sectors.</li> <li>7) Customer relations for biological or biomedical product companies or private hospitals that require personnel with good command of English.</li> <li>8) Owner of the companies that sell products and/or services in the field of biological sciences.</li> </ol>
<p><b>Further Study after graduation</b></p>	<p>Continue their studies for higher degree in any fields of biological sciences, health care professionals, and related fields, such as dentistry, veterinary science and pharmacy.</p>



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Educational Philosophy in Program Management	
Program Philosophy	<p>The Biological Sciences Program of Mahidol University International College proudly strives to raise each student to the greatest level that they are personally capable of achieving. Our success as science educators is proportionate to the degree to which our graduates actualize their ethical, inquisitive and innovative potentials. Thus, our educational philosophy is implicit in the original Latin <i>educere</i>, to lead forth; we guide students to a comprehensive and broad understanding of state-of-the-art interdisciplinary science to enable them to become responsible professionals able to innovate sustainable, pragmatic solutions for a multi-cultural world. This is implemented via strong liberal arts requirements and supportive student-faculty interactions fostering dual aims: individual achievement and ultimately a more altruistic and harmonious global society.</p>
Strategy/ Practice in teaching and learning	<p>Our philosophy is implemented via strong liberal arts requirements and supportive student-faculty interactions fostering dual aims: individual achievement and, ultimately a more altruistic and harmonious global society. Teaching strategy follows the outcome-based-learning style, in which the objectives of the program are established based on the feedback from faculty members, students, alumni, parents and employers. Courses within the program are then designed to fulfill each objective.</p>
Strategy/Practice for Evaluating Learning Outcomes of Students	<p>Different methods of formative and summative evaluation are used, for example written examination, practical test, presentation, class participation and project-based learning.</p>



	<p>Rubrics based on the objectives of the course are used to score the students' achievement. Students receive grades according to the criteria stated in Mahidol University's regulations on undergraduate studies as well as MUIC's regulations and/or announcements.</p>
<b>Competencies Enhanced to the Students of the Program</b>	
<p>Generic Competence</p>	<p><b>Critical thinking &amp; analysis</b></p> <ul style="list-style-type: none"> <li>• Comprehend qualitative and quantitative data and ideas</li> <li>• Draw meaningful conclusion from the diverse materials</li> <li>• Assess the relevance of information acquired to the objective at hand</li> <li>• Formulate lines of enquiry to drive problem solving</li> </ul> <p><b>Creativity and Innovativeness</b></p> <ul style="list-style-type: none"> <li>• Understand the potential for knowledge transfer for innovation</li> <li>• Formulate a process for data acquisition based on scientific methodology</li> <li>• Observe and create networks to learn from others and create new ideas</li> </ul> <p><b>Ethicality</b></p> <ul style="list-style-type: none"> <li>• Apply accepted ethical standards to resolve ethical dilemma</li> <li>• Implement the course of action in accordance with moral and ethical judgement</li> </ul> <p><b>Communication</b></p> <ul style="list-style-type: none"> <li>• Demonstrate proficiency in oral and written communication to both the scientific community and the wider society</li> </ul>



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	<p><b>Collaboration</b></p> <ul style="list-style-type: none"><li>• Work independently or coordinate with others to complete tasks at hand</li></ul> <p><b>Professionalism</b></p> <ul style="list-style-type: none"><li>• Retrieve relevant scientific information independently from authoritative sources</li><li>• Manage scientific literature using a reference management program</li><li>• Maintain data integrity using appropriate tools and acceptable methods</li><li>• Demonstrate accountability and responsibility to self and society</li><li>• Set, plan and accomplish assigned projects in a timely manner</li></ul>
Subject-specific Competence	<ul style="list-style-type: none"><li>• Demonstrate an understanding of the fundamental and detailed knowledge of different biological disciplines</li><li>• Possess basic technical skills in a specific course to perform experimentation in laboratory or field</li><li>• Apply knowledge and technical skills in different biological science disciplines to address health, societal and environmental issues</li><li>• Demonstrate systematic and logical thinking in formulating solutions through the application of knowledge and technical skills acquired from the different biological science disciplines</li></ul>



	<ul style="list-style-type: none"> <li>• Recognize ethical issues in human and animal experimentation, and emerging ethical issues in biological sciences</li> <li>• Apply concepts of lab and fieldwork safety when carrying out the tasks</li> </ul>
<b>Learning Outcomes of the Graduates</b>	
PLOs	<p>At the end of this program, successful students will be able to:</p> <ol style="list-style-type: none"> <li>1. Apply knowledge and technical skills of diverse biological disciplines to address health, societal and environmental issues</li> <li>2. Critically appraise information from scientific articles/journals, biological research methodology and experimentation to draw meaning conclusion from the materials</li> <li>3. Proficient in oral and written communication of biological science concepts formally and informally to both scientific community and general audience</li> <li>4. Apply scientific integrity, professionalism, and competencies to function independently as well as a team player</li> <li>5. Apply moral and ethical values when dealing with issues relating to humans, animals and the environment, enabling actions based on moral and ethical judgment</li> <li>6. Demonstrate innovative mindset to formulate and create solutions for situations relevant to oneself, the well-being of others, and the natural environment</li> </ol>