Biotechnology
International Graduate program

Program Specification
M.Sc. Biotechnology

1. **Program title:** Master of Sciences Program in Biotechnology
2. **Awarding institution:** King Mongkut's University of Technology Thonburi
3. **Teaching Institution:** School of Bioresources and Technology

   King Mongkut's University of Technology Thonburi (Bangkhunthian)

4. **Contract Address:** Biotechnology Program,
   School of Bioresources and Technology,
   King Mongkut's University of Technology Thonburi,
   49 Soi Thian Thale 25, Bang Khun Thian Chai Thale Road, Tha Kham, Bangkhunthian, Bangkok, 10150
   (https://biotech.kmutt.ac.th/)
5. **Mode of study**: Full Time

   Language of study: English
6. **Admission Criteria:**

   Eligible applicant must have;

   1. Completed Bachelor's degree in Sciences or Engineering or related fields.
   2. Academic background and/or research experiences approved by the program committee

7. Professions after graduation:

1. Academics/researchers in biotechnology or bioscience in research institutes, and government and industrial sectors
2. Biotechnology related project analysts/ consultants
3. Entrepreneurs or biotechnology business owners

8. Program objective:

This master program is designed for students to gain knowledge in advanced biotechnology and develop skills in carrying out either independent and sustained research or applying knowledge to solve problems in biotechnology industry or entrepreneurship in biotechnology related business.

9. Program learning outcomes

Program Learning Outcomes		Teaching and Learning Methods
PLO1 : Students have ability to apply biotechnological concepts/knowledge to solve research problems/ industrial problems or develop entrepreneurship by having the following abilities:		
Sub PLO1A	Ability to explain principles of advanced biotechnology and related fields.	Lecture-based teaching that provides principle and applications aspects, seminar, tutorial, self-directed study and peer review sessions
Sub PLO1B	Ability to identify research problems and suggest solutions.	Directed independent learning activities, project-based and problem-based learning, special research project, thesis
Sub PLO1C	Ability to choose proper mathematical/ statistical/ computer tools together with the related information for effective analysis of research results.	Lecture-based teaching using a range of tools to solve 'real' and 'theoretical' case-studies and problem-based learning scenarios.
Sub PLO1D	Ability to solve research problems/ industrial problems or develop entrepreneurship.	Research proposal, experimental works, project presentation and report.
PLO 2 : Students have ability to communicate and exchange academic issues/finding/solution effectively in both oral and written presentations.		Seminar, group discussion, thesis progress report and defense, conference participations, manuscript writing, thesis writing
PLO 3: Students realize the value of continuous self-improvement and strive to achieve high quality work.		Guided, self-directed and student-centered learning, with increasing independence of approach, thought and process.
PLO 4: Students have ability to work in teams with both Thais and foreigners in either leadership or partner roles.		Laboratory works, group assignments
PLO 5: Students demonstrate an understanding of, and commitment to, research ethics or code of practice.		Training, workshop, role model, individual assignment and individual research projects

10. Program structures

Plan	Compulsory Courses	Elective Courses	Seminar	Thesis	Research project	Special project study	Total credits
Plan 1.2 (Thesis 12 credits)	10	12	2	12	-	-	36
Plan 1.2 (Thesis 24 credits)	10	-	2	24	-	-	36
Plan 2 (Biotechnology Practice program)	10	15	-	-	6	6	37
Plan 2 (Biotechnopreneur program)	7	16	1	-	6	6	36