ข้อเสนอหลักสูตรศึกษาระดับปริญญาโทนานาชาติ

(Thailand International Postgraduate Programme : TIPP)

ระหว่างปี ๒๕๖๙ – ๒๕๗๑

Theme: Agriculture and Food Security

๑. Course Title: Integrative Biosciences and Innovation (Postharvest Track)

๒. Master Degree: Master of Science Program in Integrative Biosciences and Innovation (Postharvest) (International program)

๓. Academic Institution: School of Bioresources and Technology/ King Mongkut's University of Technology Thonburi

๔. Duration: 2 years (August 2026-December 2028)

๕. Background and Rational:

The Rationale for Thailand is proactively responding to rapid global changes driven by science, technology, and innovation by adopting the Bio-Circular-Green (BCG) Economy Model. This national priority aims to foster sustainable economic development. Both the Ministry of Higher Education, Science, Research and Innovation (MHESI) and the Office of National Higher Education Science Research and Innovation Policy Council (NXPO) have highlighted the urgent need for skilled interdisciplinary professionals to support key sectors like bioeconomy, food and health innovation, and biopharmaceuticals.

Unifying program: "Integrative Biosciences and Innovation"

In alignment with these national directives, the School of Bioresources and Technology has made a strategic decision to consolidate its master's programs in Biotechnology, Postharvest Technology, and Biochemical Technology. These have been merged into a single, forward-thinking program: "Integrative Biosciences and Innovation. This strategic consolidation is driven by several key factors:

1. Contemporary Educational and Research Imperatives

Modern educational and research initiatives increasingly require the integration of knowledge from diverse academic disciplines to address complex problems. Given the faculty's extensive cross-disciplinary research and their range of specializations, consolidating these programs is essential. This merger will enhance graduates' capabilities, particularly their ability to integrate knowledge for effective problem-solving and research. Additionally, it will expand career opportunities for alumni and promote interdisciplinary research that can have a significant impact on the national level.

2. Streamlining Operations and Optimizing Resources

The purpose of the merger is to eliminate redundancy in programs with overlapping content, thereby streamlining administrative tasks and optimizing the shared use of resources,

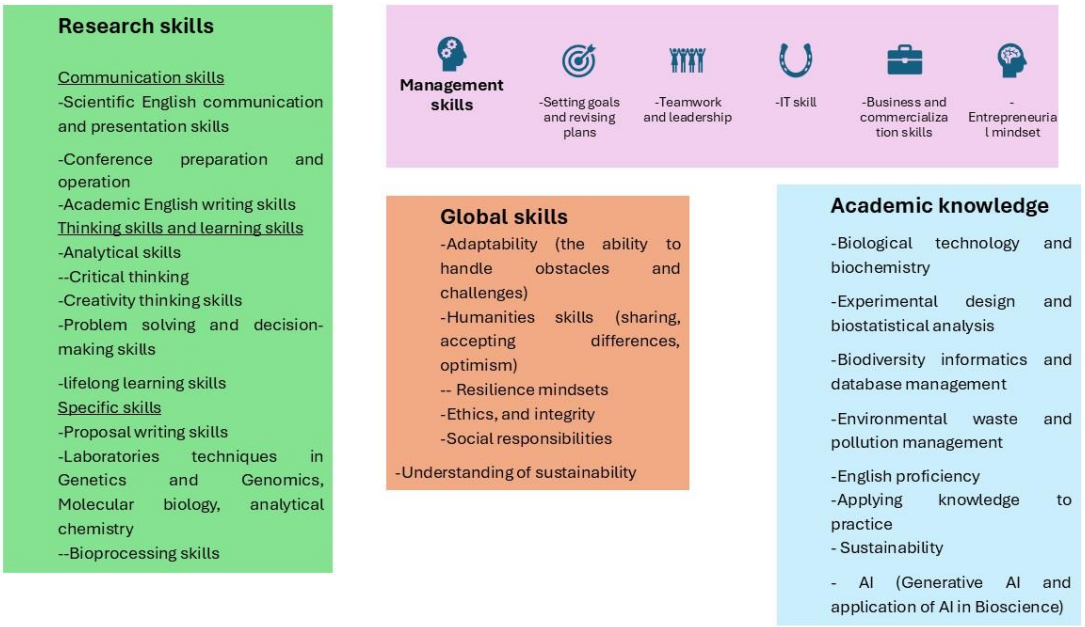
such as human capital and teaching/research equipment. This will enable faculty and staff to use their time more efficiently on teaching, research, and academic services. By integrating various scientific fields, the program aims to strengthen teaching, research, and academic services while encouraging collaborative efforts to enhance the impact of scholarly work, research, and community service. It will also facilitate shared administration and resource acquisition.

Moreover, this program consolidation aligns with the Reinventing University project of the Office of the Permanent Secretary, Ministry of Higher Education, Science, Research, and Innovation. It supports King Mongkut's University of Technology Thonburi's initiative to reform administrative systems, modernize curricula and teaching methods, and boost the nation's competitiveness through research and innovation. To produce high-quality human resources, it is crucial to re-evaluate curriculum structures in a new format to conserve and share resources effectively.

The concept of the consolidated program

The Master of Science Program in Integrative Biosciences and Innovation combines the existing MSc programs in Biotechnology, Agriscience and Technology (Post-harvest Technology), and Biochemical Technology. While these programs previously focused on specialized topics, modern research and complex problem-solving require a multidisciplinary approach. Consolidating these programs will enhance graduates' skills in integrating knowledge for effective solutions and broaden career opportunities. This initiative also promotes interdisciplinary research with significant potential impact on the country.

The consolidated program **outlines Program Learning Outcomes (PLOs)** aimed at enhancing the competencies of graduates to meet the needs of various customers and stakeholders, including new students, current students, alumni, potential customers, and employers. Additionally, these PLOs align with the KMUTT Qualification Framework (QF) and the AHEC Announcement on Learning Outcomes based on the Higher Education Qualification Standards B.E. 2565 (2022).



A summary of essential skills important for curriculum development, derived from **stakeholder analysis**

The program aims to generate knowledge and foster innovation through experimental-based research, which is organized into three core disciplines: Biotechnology, Biochemical Technology, and Postharvest Technology. These areas are interconnected, providing students with a comprehensive understanding before they focus on a specific research application. This approach aligns with the BCG economy's emphasis on precision agriculture, biochemical technology, and the study of active compounds in herbs

The **curriculum structure** is divided into **three tiers (Figure 2.1)**, with specific courses assigned to each. This includes identifying courses that need to be adjusted or merged, as well as new courses that should be introduced. This curriculum is **flexible and demand-driven**, allowing students to **freely select courses in Tier 3**. Their choices can align with their research direction or their future career path after graduation.

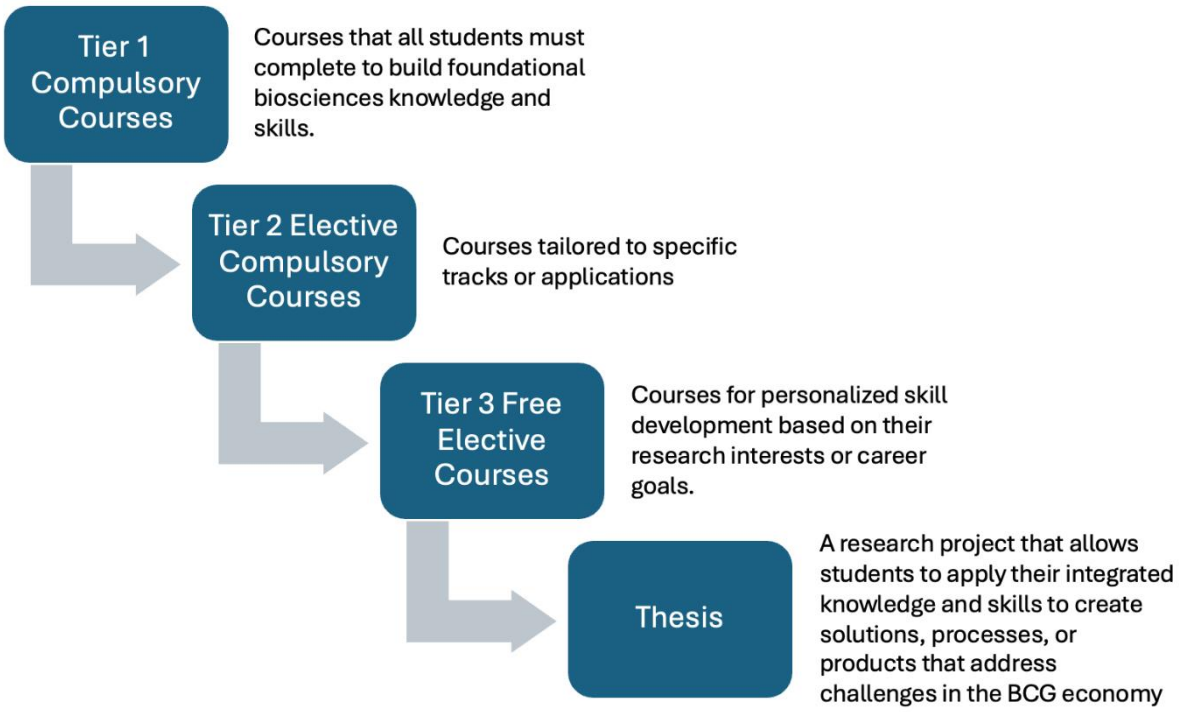


Figure 2.1 The Curriculum Structure for the Integrative Biosciences and Innovation program.

Issues changed from the former version of the program can be summarized as follows:

Revise the program learning outcomes (PLOs) corresponding to align with the needs of the key stakeholders.

In light of the consolidation of the MSc. Programs in Biotechnology and Agriscience and Technology (Post-harvest Technology) with the MSc. Program in Biochemical Technology, a revision of the **Program Learning Outcomes (PLOs)** is imperative. This revision aims to ensure alignment with the intended graduate attributes of the integrated curriculum, responsiveness to customer and stakeholder requirements, adherence to university policy, and compliance with the Ministerial Regulations on Higher Education Curriculum Standards B.E. 2565 (2022) and the Notification of the Higher Education Standards Committee concerning the detailed learning outcomes pursuant to the National Higher Education Qualification Standards B.E. 2565 (2022).

๖. Objectives:

1) To produce graduates with expertise in Integrative Biosciences and Innovation development, equipping them with advanced knowledge, practical skills, and effective communication abilities to lead innovation, create novel solutions for the Bio-Circular-Green (BCG) economy, and contribute significantly to the field at both national and international levels.

2) To support the production and research development in Integrative Biosciences and Innovation, meeting national demands and adhering to international quality.

๗. Course Synopsis and Methodology:

Postharvest losses of agricultural commodities have been recognized since the Sixth National Economic and Social Development Plant of Thailand. Losses of durable and perishable commodities are estimated to be 10 and 20-40%, respectively, worth over 20 billion baths annually. In order to reduce losses and maintain quality of the commodities, qualified manpower in the field of Postharvest Technology, which is the integrated knowledge among Engineering, Agriculture and Biology is urgently needed. Thus, Postharvest Technology program was established at KMUTT since 1993.

Academic team effort is the key issue to address the above challenges. At present, division of postharvest technology, KMUTT has 7 academic staffs and all of them graduated in doctoral degree from foreign countries (List of academic staff shows in Table 1). All of staffs have experience in research and extension work for more than 10 years in both regional and international level. In each year, all staffs published a research paper in average of 2 articles per person. The knowledge from our research was delivered to students through lecture and practical classes.

Postharvest Technology program at KMUTT has a strong linkage with the consortium university under the Postharvest Technology Innovation Center (PHTIC), The Ministry of Higher Education, Science, Research and Innovation and also foreign partner universities. With supporting from PHTIC, a lot of modern instruments were purchased thus the students can do a basic research up to advance research. As we have very strong collaboration with foreign universities thus the professors from partner universities involved to develop the international curriculum in postharvest technology which may benefit to the student from all region of the world. We deliver the knowledge to students by using English as a tool. Until now, more than 15 foreign students awarded the degree from our program including the students who have supported by TICA (Appendix). Postharvest technology program (International program) at KMUTT is the first institution in Thailand that awarded the master and doctoral degree in this field.

Course methodology Plan A2 (Academic; a thesis-oriented program)

For students in Plan A2, our teaching and learning processes are designed to encourage knowledge acquisition, foster lifelong learning, and cultivate a growth mindset. While the core design concepts are similar to those used for Plan A1 students, the approach for the students in Plan A2, who are engaged in coursework, incorporates specific pedagogical methods. These strategies, such as problem-based learning (PBL) and collaborative learning, are critical for fostering knowledge acquisition, lifelong learning, and a growth mindset. We use real-world case studies and situations to promote independent analysis and problem-solving. Collaborative

learning encourages teamwork, idea sharing, and appreciation for other perspectives, all of which improve critical thinking and problem-solving abilities.

Learning Outcomes of the research project

Learners will be able to critically analyze scientific literature, formulate research hypotheses, design and present a research proposal in the field, communicate research progress effectively, defend their dissertation proposal with academic rigor, and prepare scholarly work for publication in accordance with KMUTT graduate regulations.

Preparation

Students undertaking a thesis must obtain approval from their advisor. The advisor will guide the students in planning their work to achieve their objectives and goals, as well as provide assistance in addressing any issues that may arise. Before commencing their thesis, students must have their thesis proposal approved by their thesis advisor. The advisor will then nominate the thesis committee for consideration by the program committee, which will subsequently seek approval from the faculty committee. Once the students begin their thesis, they are required to undergo a thesis progress examination with the thesis committee every semester until graduation.

Evaluation Process

Students must defend their thesis proposal before beginning their research, at which point the thesis committee will evaluate the outcome. Once the proposal is successfully defended, students may proceed with their thesis work. During each subsequent semester, students engaging in thesis work will undergo evaluations of their progress, with assessments provided by the advisor and thesis committee until the thesis meets the defined objectives and scope of work. Finally, students are required to present their thesis and undergo a final oral examination. Additionally, students must disseminate a portion of their thesis in a suitable format, in accordance with their academic plan and the King Mongkut's University of Technology Thonburi Regulations on Graduate Studies B.E. 2568 (2025).

Assessment Approaches at Program-level and Course-level (PLOs) and CLOs)

a) The alignment of learning outcomes, teaching and learning approach, and assessment approach aims to develop learners to achieve the program learning (Constructive Alignment).

Program Learning Outcomes (PLOs)	Teaching and Learning Approach	Assessment Approach
PLO 1 Students utilize knowledge and technology in applied biosciences to create solutions, processes, or	- Interactive lectures - Problem-based learning - Seminar and workshop - Group meeting and discussion	- Oral exams, written exams, and assignment evaluations - Class project presentation and seminar presentation

products that address challenges in the Bio-Circular-Green (BCG) economy through research.	- Working on a research project or thesis	- Discussion and Q&A in class, observation - Regular Thesis progress evaluation (Evaluation of written reports and oral presentations using scoring rubrics)
PLO 2 Students effectively communicate research findings in written and oral formats to engage diverse audiences.	- Seminar and workshop - Group meeting and discussion - Working on a research project or thesis - Regular Thesis progress presentations to thesis advisors	- Evaluation for the Seminar course: Using rubrics to assess written reports and oral presentations - Discussion and Q&A, observation - Regular thesis progress evaluation (Evaluation of written reports and oral presentations using scoring rubrics)
PLO 3 Students demonstrate entrepreneurial and resilience mindsets, teamwork, and creativity to achieve their work.	- Interactive lectures - Extra curriculum activities - Group activity assignment	- Regular evaluation of thesis progress by the thesis committee and advisor using scoring rubrics - Discussion and Q&A in class, observation
PLO 4 Students follow ethical principles and professional standards in conducting research, ensuring the integrity and reproducibility of their work.	- Provide training/workshops on research integrity and ethics, especially on research involving humans and animals - Seminar - Working on a research project or thesis - Regular Thesis progress presentations to thesis advisors	- Regular evaluation of dissertation progress by the thesis committee and advisor using scoring rubrics

b) Stage Learning Outcomes (Stage-LOs) or Year Learning Outcomes (Year-LOs)

To ensure students achieve the curriculum's desired learning outcomes, the program designates checkpoints for these outcomes. This enables periodic, sequential, and continuous

monitoring and assessment of student learning progress throughout the entire course of study, summarized below. Learning outcomes are evaluated in three time-based stages, ranging from foundational knowledge and skills in applied bioscience to cooperatively generating entrepreneurial, resilient, and ethical solutions for research goals.

Stage LO	Period of assessment (within)	Assessment method	Assessment criteria
Stage LO 1: Comprehensive demonstration of foundational knowledge, technology, and skills in applied bioscience	Year 1/2 (Plan 1.1) Year 2/1 (Plan 1.2)	• Presentation in bioscience seminars • Thesis proposal examination through written reports and oral presentations using rubrics assessment	• Apply basic scientific principles and appropriate technologies to analyze and identify problems regarding BCG context (PLO 1). • Organize research information logically to deliver a clear and concise written report and effective communication (PLO 2, PLO 3). • Recognize the research methodology based on the proposed research questions (PLO 1, PLO2).
Stage LO 2: Implementation of acquired knowledge and skills to advance research problems in applied bioscience while adhering to ethical principles and practicing effective teamwork.	Year 1/2-2/2 (Plan 1.1) Year 2/1-2/2 (Plan 1.2)	• A semester evaluation of Thesis progress through written reports and oral presentations using rubrics assessment	• Execute research experiments or projects to generate solutions, processes, or products addressing BCG economy (PLO 1). • Analyze, evaluate, and interpret research finding based on advisory input. (PLO 1, PLO2, PLO3, PLO 4) • Prepare written summaries of scientific observations and

Stage LO	Period of assessment (within)	Assessment method	Assessment criteria
			effectively communicate with peers (PLO 2). • Demonstrate ethical principles and fundamental teamwork practices to foster responsible and collaborative work. (PLO 3 and 4)
Stage LO 3: Cooperatively generate proper solutions and strategies by applying entrepreneurial and resilient mindsets, teamwork, and ethical principles to achieve research goals.	Year 2/2 (Plan 1.1) Year 2/2 (Plan 2.2)	• Thesis defense examination by the external and internal committee evaluating through Thesis booklet and oral presentation	• Utilize advanced knowledge and cutting-edge technologies in applied biosciences to find solutions and comprehensive strategies that significantly address challenges within the Bio-Circular-Green (BCG) economy through original research. (PLO 1) • Effectively communicate research findings in both written reports and oral presentations, adapting the message and delivery for distinct scientific and general audiences. (PLO 2) • Clearly demonstrate ethical principles in research and participate constructively in team-based activities to promote responsible

Stage LO	Period of assessment (within)	Assessment method	Assessment criteria
			collaboration (PLO 3, PLO 4).

Our program implements multiple mechanisms to track learner progress. For example, we conduct assessments and evaluations for each course every semester. These assessments are administered periodically throughout the learning process. If a student faces difficulties during their studies, the instructor and/or course coordinator will reach out to the student to identify strategies that address their weaknesses, ensuring they can meet the course learning outcomes. **Seminar Courses and Thesis Preparation** In our seminar courses, which prepare students for their thesis, we incorporate both lectures and workshops designed to develop a range of skills. We also offer consultation clinics for presentations and provide regular opportunities for students to present their work in these seminar courses. This approach significantly boosts students' confidence in delivering effective presentations. Furthermore, assessments are conducted using scoring rubrics, and the results are shared with both students and their advisors. This information helps guide the development of supplementary activities aimed at improving any remaining skills. **Thesis Course Assessment** In the thesis course, we require examinations every semester, starting with the proposal defense, followed by the thesis progress examination, and concluding with the final thesis defense. Each of these examinations employs scoring rubrics for assessment and evaluation. The results are communicated to the students, their advisors, and the SBT Faculty Development Committee. We track student progress by comparing their scoring rubrics from previous years. This allows both students and advisors to see growth in student performance and use this information to plan skill improvements for the next semester. This process ensures that targeted supplementary activities can be organized to address any skills deficits that remain. This comprehensive program management approach effectively reduces instances where students are unable to meet their program learning outcomes.

๗.๑ Study plan A2 for Postharvest Track

- Compulsory Courses 6 Credits
- Elective Compulsory Courses 10 Credits
- Free Elective Courses 8 Credits
- Thesis 12 Credits

Total Credit 36 Credits

Study Plan A2: Thesis-oriented program (Thesis 12 credits) for the Postharvest track

Year of Study 1 Semester 1		credit	L	P	S
IBS 60001	Integrative Knowledge and Technology for BCG Model	1	1	0	3
IBS 60002	Digital Tools and Emerging Technologies for BCG Model	1	1	0	3
IBS 61001	Statistics in Biosciences	1	1	2	2
IBS 61002	Experimental Design for Biosciences 1	1	1	0	3
IBS 62001	Instrumental Techniques for Biosciences	1	1	3	3
IBS 62004	Agricultural Commodities Quality Analysis	1	1	1	3
IBS 63000	Bioscience Entrepreneurship	1	1	0	3
IBS 67001	Physico-Chemical Analysis	1	1	1	3
IBS 67002	Preharvest Factors	1	1	1	3
IBS 67003	Postharvest Technology	1	1	1	3
IBS 67004	Case Study	1	0	2	3
IBS XXX	Free Elective Course 1	1	1	0	3
IBS XXX	Free Elective Course 2	1	1	0	3
	Total	13	(2	11	38
	Number of Hours/Week	= 61			

Year of Study 1 Semester 2		credit	L	P	S
IBS 641	Seminar in Biosciences and Innovation 1	1	0	2	2
IBS 679	Postharvest Physiology and Technology of Agricultural Commodities	3	3	0	9
IBS 691	Thesis	2	0	4	4
IBS XXX	Free Elective Course 3	3	3	0	9
IBS XXX	Free Elective Course 4	3	3	0	9
	Total	12	9	6	33
	Number of Hours/Week	= 48			

Year of Study 2 Semester 1		credit	L	P	S
IBS 642	Seminar in Biosciences and Innovation 2	1	0	2	2

IBS 691	Thesis		6	0	12	12
		Total	7	0	14	14
		Number of Hours/Week	= 28			

Year of Study 2 Semester 2			credit	L	P	S
IBS 691	Thesis		4	0	8	8
		Total	4	0	8	8
		Number of Hours/Week	= 16			

Thesis Plan

Thesis Plan	Estimated timeline
Submission of thesis proposal	February 2027
Thesis proposal examination	May 2027
First thesis progressive examination	December 2027
Second thesis progressive examination	May 2028
Comprehensive examination	July 2028
Thesis defense examination	December 2028

๗.๒ Course Content

Compulsory Course		6 credit
IBS 60001	Integrative Knowledge and Technology for BCG Model	1 (1-0-3)
IBS 60002	Digital Tools and Emerging Technologies for BCG Model	1 (1-0-3)
IBS 61001	Statistics in Biosciences	1 (1-2-2)
IBS 63000	Biosciences Entrepreneurship	1 (1-0-3)
IBS 641	Seminar in Biosciences and Innovation 1	1 (0-2-2)
IBS 642	Seminar in Biosciences and Innovation 2	1 (0-2-2)
Elective Compulsory Course for Students in the Postharvest track		10 credit
IBS 67001	Physico-Chemical Analysis	1(1-1-3)
IBS 67002	Preharvest Factors	1(1-1-3)
IBS 67003	Postharvest Technology	1(1-1-3)
IBS 67004	Case Study	1 (0-2-3)
IBS 679	Postharvest Physiology and Technology of	3 (3-0-9)

	Agricultural Commodities	
IBS 61002	Experimental Design for Biosciences 1	1 (1-0-3)
IBS 62001	Instrumental Techniques for Biosciences	1 (1-3-3)
IBS 62004	Agricultural Commodities Quality Analysis	1 (1-1-3)

Free Elective Courses for Students in the Postharvest track 8 credit

(Depend on Personalized Competency Development)

1. Statistics, Computational Methods, and AI	**2. Laboratory Techniques**	**3. Entrepreneurship**	**4. Scientific Communication**
IBS 61002 Experimental Design for Biosciences 1 1 (1-0-3) **IBS 61003** Experimental Design for Biosciences 2 1 (1-0-3) **IBS 61100** Biological and Environmental Data Preparation for AI Training 1 (0-2-2) **IBS 61200** AI for Bioinformatics and Systems Biology 1 (1-0-3)	**IBS 62001** Instrumental Techniques for Biosciences 1 (1-3-3) **IBS 62002** Analysis and Drying Techniques of Bioproducts 1 (1-3-3) **IBS 62003** Molecular Techniques 1 (1-3-3) **IBS 62004** Agricultural Commodities Quality Analysis 1 (1-1-3) **IBS 621** Techniques and Solutions in Biotechnology 1 (0-3-3)	**IBS 631** Patent Analysis for Innovation Development (1-0-3) **IBS 632** Innovative Entrepreneurship 3 (3-0-9) **IBS 633** Business and Management of Biotechnology Enterprise 3 (3-0-9) **IBS 634** Biotechnology Enterprise Initiative 3 (3-0-9)	**IBS 643** Scientific Presentation 1 (1-0-3) **IBS 644** Scientific Research Manuscript Writing 1 (1-0-3)
5. Biochemical Technology	**6. Biotechnology**	**7. AgriScience & Postharvest**	**8. Special and Selected Topics**

IBS 650 Functional Properties of Biochemicals 3 (3-0-9) **IBS 651** Enzyme Technology and Innovation 3 (3-0-9) **IBS 652** Nucleic Acid Technology and Innovation 3 (3-0-9) **IBS 653** Carbohydrate Technology and Innovation 3 (3-0-9) **IBS 654** Lipid Technology and Innovation 3 (3-0-9) **IBS 655** Flavor Technology and Innovation 3 (3-0-9) **IBS 656** Perfumery Technology and Innovation 3 (3-0-9) **IBS 657** Bioactive Compounds and Nutraceuticals 3 (3-0-9) **IBS 658** Lignin Technology and Innovation 3 (3-0-9) **IBS 659** Yeast Innovative Research and Technology 3 (3-0-9) **IBS 75100** Biofuel and Biorefinery 3 (3-0-9)	**IBS 561** Cell Biology 3 (3-0-9) **IBS 660** Technical Bioprocess 3 (3-0-9) **IBS 66101** Gene and recombinant DNA technology 1 (1-0-3) **IBS 66102** Bioinformatics for Biosciences 1 (1-0-3) **IBS 66103** Gene manipulation and expression in different host systems 1 (1-0-3) **IBS 662** Applied Mathematics and Statistics in Life Sciences 3 (3-0-9) **IBS 66301** Cellular and Molecular Vaccinology 1 (1-0-3) **IBS 66302** Vaccine Design and Development 1 (1-0-3) **IBS 66303** Vaccine Evaluation and Manufacturing 1 (1-0-3) **IBS 664** Biological Treatment and Utilization of Biowastes 3 (3-0-9) **IBS 665** Plant Technology 3 (3-0-9) **IBS 666** Algal Biotechnology 3 (3-0-9) **IBS 667** Trends in Modern Biotechnology 3 (3-0-9) **IBS 668** Nanobiotechnology	**IBS 67001** Physico-Chemical Analysis 1 (1-1-3) **IBS 67002** Preharvest Factors 1 (1-1-3) **IBS 67003** Postharvest Technology 1 (1-1-3) **IBS 67004** Case Study 1 (0-2-3) **IBS 671** Postharvest Losses of Agricultural Commodities 2 (2-0-6) **IBS 672** Postharvest Handling Systems of Ornamentals 2 (2-0-6) **IBS 673** Fresh-cut Technology for Fruits and Vegetables 2 (2-0-9) **IBS 674** Seed and Grain Technology 3 (3-0-9) **IBS 675** Produce Packaging Systems 3 (2-3-9) **IBS 676** Postharvest Pathology of Agricultural Commodities 3 (2-3-9) **IBS 677** Value Chain Management 3 (3-0-9) **IBS 678** Emerging Agricultural Science 2 (2-0-9) **IBS 679** Postharvest Physiology and Technology of Agricultural Commodities 3 (3-0-9) **IBS 771** Postharvest Biochemistry of Agricultural Commodities 3 (3-0-9)	**IBS 681** Special Topics in Biosciences 1 3 (3-0-9) **IBS 682** Special Topics in Biosciences 2 3 (3-0-9) **IBS 683** Selected Topics in Biosciences 1 (1-0-3)

	3 (3-0-9) **IBS 66901** Upstream Processing of Biopharmaceuticals 1 (1-0-3) **IBS 66902** Downstream Processing of Biopharmaceuticals 1 (1-0-3) **IBS 66903** Trends in Biopharmaceutical Manufacturing and Regulations 1 (1-0-3) **IBS 66904** Biopharmaceutical Processing Practice 1 (1-0-3)		

Thesis 12 credits

IBS 691 Thesis 12 credits

๘. Graduation Conditions:

In accordance with the Notification of the Higher Education Standards Committee on Standards for Graduate Programs B.E. 2565 (2022) and in accordance with the Regulations of King Mongkut's University of Technology Thonburi. Regarding Graduate Education B.E. 2565 (2025) or other amended regulations.

๙. Applicant Qualifications

Must have completed a bachelor's degree or higher in biochemical technology, biotechnology, agricultural science, other scientific disciplines, or an equivalent field.

Or must possess qualifications or sufficient foundational knowledge to undertake this program, as approved by the program's curriculum committee or the admissions committee.

Or must possess **research qualifications published in national, regional, or international journals**, or disseminated through other formats, or have **relevant work or research experience**, as determined by the Program Administrative Committee.

All applicants must meet the English proficiency requirements as outlined in the Announcement of King Mongkut’s University of Technology Thonburi English Proficiency

Requirement for Master Degree Students B.E. 2568, These requirements may be subject to change based on future announcements by the university.

๑๐. Document Required

- Application form
- Completed transcript record
- Curriculum vitae
- Physical Health examination certificate (not over than 3 months)
- Mental Health examination certificate (not over than 3 months)
- Statement of academic background in bachelor's degree including brief of research experience
- Statement of study plan in Thailand
- Recommendation Letter with seal of institution
- English Proficiency Test

๑๑. Contact:

๑๑.๑ ระบุชื่อและข้อมูลติดต่อ กรณีผู้สมัครขอข้อมูลเพิ่มเติมเกี่ยวกับเนื้อหาหลักสูตร

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Appendix 1

List of Academic staffs in division of postharvest technology, KMUTT

Name	Academic position	Educational background
Dr. Varit Srilaong	Associate Professor	Ph.D. (Agricultural Science)
Dr. Apiradee Uthairatanakij	Associate Professor	Ph.D. (Postharvest Technology)
Dr. Pongphen Jitareerat	Associate Professor	Ph.D. (Agricultural Science)
Dr. Chalermchai Wongs-Aree	Associate Professor	Ph.D. (Plant Molecular and Cell Biology)
Dr. Mantana Buanong	Assistant Professor	Ph.D. (Horticulture)
Dr. Nutthachai Pongprasert	Associate Professor	Ph.D. (Agricultural Science)
Dr. Panida Boonyaritthongchai	Associate Professor	Ph.D. (Agricultural Science)

Appendix 2

List of Scientific Equipment at Postharvest Technology Innovation Center, King Mongkut's University of Technology Thonburi

	Name	Brand	Model
1	Texture Analyser and Accessories	Texture Analyzer	TAXT Plus
2	Atomic Absorption Spectrophotometer	Perkin Almer	Aanalyst 100
3	Centrifuge	Sorvell	RC-5C PLUS
4	Freeze Dry	EYELA	FD-1
5	PCR Thermal Cycle		PTC-200 30/48
6	Shock and Vibration Tester		Shocklog RD298
7	Chamber Heat Treatment Oven	Memmert	
8	Oil Vacuum Pump		1023-V2-G583X/G608X
9	Gas Analyzer Set (Gas Chromatography)	Agilent	4890 TCD FID
10	Gas Permeation Tester System	Illinois	8000
11	Vacuum Plastic Sealer		
12	Vacuum Evaporator	Buchi	R-205/V
13	Ultra-Low Temperature Deep Freezer	Sanyo	MDF-U50V
14	CO_2 Incubator	Sanyo	MCO-20 AIC
15	High Performance Liquid Chromatography	Waters	
16	Vibration Test System	Lansmont	MS2000
17	Compression Tester	Lansmont	Squeezer
18	Autoclave	Sanyo	MLS-3020
19	Amino Acid Analyzer	Waters	
20	CA-Gas Analyzer System	Agilent	6890N and Accessories
21	Bioclean Bench System		
22	CA-Mixing System		
23	Cooling Circulator	LabCon	LTB25/20
24	Microscope System with camera	Nikon	
25	Ultra-Low Temperature Chamber	Sanyo	MLR-350H
26	Water purified apparatus	Elga LabWater	R15
27	Incubator Shaker		BR-11FP
28	Gel Documentation Analysis System	SynGene	GeneGenerous
29	Carbon Dioxide Permeation Tester System	MoCon	Permatran-C4/41 T Master
30	Chlorophyll Analysis System	LI-COR	Li-6400 3000A
31	Nitrogen Analyzer	Buchi	
32	Refrigerated Centrifuge	Sorvell	RC-5C PLUS

33	Acetaldehyde Analyzer Set	Shimazu	GC/8A
34	Microtome set	Microm	HM 450+K 400
35	Cleaning Bench System	Thermo	S2010
36	Flame Photometer System		DV704
37	Vacuum Plastic Sealer		225PX VAC-STAR
38	Air Conditioner	Trane	
39	Volatile Compounds Analyzer	Shimadzu	GC-2010
40	Freeze Drier Set		
41	Grain Quality Testing System		
42	Cold Chamber System		
43	Anthocyanin Analyzer Set	Shimadzu	LC-20A
44	Vertical Electrophoresis Apparatus		
45	Autoclave (HICLAVE)	HiClave	HIR-1 HVE-50
46	Colorimeter	Minolta	CR-400
47	Handheld Digital Fruit Firmness		
48	Computer PC + Laser Printer	HP	Pavillion A6775L, M1522N MFP
49	Computer PC + Laser Printer	HP	Pavillion A6775L, M1522N MFP
50	Computer Laptop	Apple	Mac Book Air (MB543TH/A)
51	Homogenizer	Nissai	AM-3
52	Computer PC	HP	Pavillion a6785L
53	Water Spinner for Fresh Produce	Kronen	Centrifuge Turbo K50/K50-7
54	Fresh Produce Washer	Kronen	GEWA 2600 ECO
55	Book Scanner and accessories	ATIZ	Book drive DIY
56	Atmosphere Controlled Chamber	Sanyo	MLR-351H
57	Carbon dioxide and Oxygen Controlled Incubator Chamber	Sanyo	MCO - 18M
58	Deep Freezer	Sanyo	MDF - U4186S
59	Pressure Chamber	PMS	1000
60	Computer Laptop	Toshiba	Satellite P745-1005XT
61	Projector	Epson	EB-W10
62	Computer Laptop	HP	P2000M
63	Gas Chromatography TCD Detector	Shimazu	GC/8A
64	DSLR Camera set	Canon	7D
65	Gas Chromatography TCD + FID Detector	Shimazu	GC/2014
66	Electrolyzed Water Maker	Aquacca	mod 20-2-7
67	Laminar Flow		
68	Pack sealer	Toko	TK-8
69	Fruit sorter		

Appendix 3

List of TIPP Scholarship's students graduated from Division of Postharvest Technology, King Mongkut's University of Technology Thonburi during 2010 -2025

Name	Country	Study period
1. Mr. Lalith Wasantha *Advisor: Assoc. Prof. Dr. Pongphen Jitareerat*	Sri Lanka	2 years (1/2011-2/2012)
2. Mrs. Suzana Constancio *Advisor: Assoc. Prof. Dr. Songsin Photchanachai*	Timor Leste	2 years (1/2011-2/2012)
3. Mr. Fernando Hewage Ranjith Piyasiri *Advisor: Assoc. Prof. Dr. Varit Srilaong*	Sri Lanka	2 years (1/2012 - 2/2013)
4. Mr. Ugyen Dorji *Advisor: Assoc. Prof. Dr. Apiradee Uthairatanakij*	Bhutan	2 years (1/2012 - 2/2013)
5. Mr. Peter Opio *Advisor: Assoc. Prof. Dr. Varit Srilaong*	Uganda	2 years (1/2014- 2/2015)
6. Mr. Ayman Abd Elgader *Advisor: Assoc. Prof. Dr. Apiradee Uthairatanakij*	Sudan	2 years (1/2014- 2/2015)
7. Mr. Benny Gration Rushunju *Advisor: Assoc. Prof. Dr. Pongphen Jitareerat*	Tanzania	2 years and 3 months 1/2014- 1/2016
8. Mr. Maqbool Ahmed *Advisor: Assoc. Prof. Dr. Pongphen Jitareerat*	Pakistan	1/2018 – 2/2020
9. Mr.Ian Machanule Yosi *Advisor: Assoc.Prof.Dr. Varit Srilaong*	Republic of Kenya	2 years 1/2022- 2/2023
10. Ms.Kamogelo Maitumelo Radithobolo *Advisor: Assoc.Prof.Dr. Chalermchai Wongs-Aree*	Botswana	2 years 1/2022- 2/2023
11 Mr.Lesego Obonye *Advisor: Assoc. Prof. Dr. Apiradee Uthairatanakij*	Botswana	2 years 1/2022- 2/2023

Table 2. Status of graduated student after return to their home country

Name	Position	Organization
1. Mr. Lalith Wasantha	Provincial Extension Officer	Department of Agriculture, Sri Lanka
2. Mrs. Suzana Constancio Vilanova	Head of Crop Production & Postharvest Management	National Directorate of Agriculture, Horticulture & Extension, Ministry of Agriculture and Fisher, Democratic Republic of Timor Leste

3. Dr. Fernando Hewage Ranjith Piyasiri	Deputy Director	Regional Agriculture research center-Girandurukotte, Department of Agriculture, Sri Lankan
4. Mr. Ugyen Dorji	Head of Production and Quality Assurance Department	Bhutan Agro-Industries Ltd., Bhutan
5. Dr. Peter Opio	Ph.D. Candidate	Busitema University- Arapai campus. Faculty of Agriculture and Animal sciences. P.O Box 203, Soroti city, Uganda
6. Mr. Ayman Abd Elgader	Certified Seed Officer	Certified Seed Production Department, Kenana Integrated Agricultural Solution Company, Khartoum, Sudan
7. Mr. Benny Gration Rushunju	Researcher	Ministry of Agriculture in Tanzania
8. Mr. Maqbool Ahmed	Agriculture officer	Agriculture & Cooperatives Department, Government of Balochistan, Pakistan
9.Mr. Ian Machanule Yosi	Technical Officer	SGC- Siam Kubota Company, Kenya
10. Ms. Kamogelo Maitumelo Radithobolo	Researcher	Ministry of Agriculture, Botswana
11 Mr. Lesego Obonye	Business Development officer	Ministry of Trade and Entrepreneurship.