

Course Detail

Master of Science Program in AgriScience and Technology (Postharvest) (International Program)

Course Title: AgriScience and Technology (Postharvest) (International Program)

Master Degree: M.Sc. in AgriScience and Technology (Postharvest)

Academic Institution: Division of Postharvest Technology
School of Bioresources and Technology
King Mongkut's University of Technology Thonburi (KMUTT)
126 Pracha-Uthit Road, Bangmod, Thungkru, Bangkok 10140

Duration: 2 years (August 2021 – July 2023)

Background and Rational:

In less-developed countries, both quantitative and qualitative losses of agricultural products extremely variable magnitude occur at all stages of supply chain from production, harvesting, through handling, storage, processing and marketing (wholesale and retail) to final deliver to the consumer. Postharvest losses of agricultural products estimated about 25% of fruits, 40% vegetables and 15-20% grains are wasted during pre-harvest and post-harvest period. Hence the elimination of losses in agricultural products is important to augment food availability and food security for human in every nation.

In Thailand, there are plenty of raw agricultural commodities, which are produced for local market. The quality of such products is seldom adequate for export markets. At present, the export potential of the tropical to temperate zone is more quantity but the serious limitations are the failure to maintain the quality of produce and lack of appropriate handling techniques to reduce losses at harvest and after harvest. Therefore, King Mongkut's University of Technology Thonburi, feeling it had a key role to play, established the Postharvest Technology Program in 1993 to be response for graduate programs, research and development with the application of adequate technologies to solve the problem of losses and to control the quality of raw agricultural products after harvest.

In line with the government policy to improve the relationship between Thailand and ASEAN members as well as other partnership. KMUTT is willing to assist our partnership to develop human capabilities including training and technical exchanges. In doing this, the postharvest technology division is being conducted in English and accepted students from the Indochina, ASEAN and other regional countries. Students will be encouraged to do work in which research directions are motivated by problems in their countries to satisfy the country needs.

The division of postharvest technology offers graduate work leading to Master of Science in AgriScience and Technology (Postharvest) with majors in pre-harvest and postharvest

technology of perishable crops, postharvest technology of cereals and grain legumes. With a major, the main areas of specialization are physiology, entomology, pathology and engineering. The facilities available for graduate training include green house, laboratory of postharvest physiology, laboratory of postharvest enzymes and molecular biology, packinghouse unit and others. Graduate work in this division is designed to develop a high order of independent thought, broad knowledge and technical skills. The emphasis in graduate work is placed on research, supplemented by courses and seminars.

Objectives:

To develop an effective graduate program in postharvest technology by promoting research activities to meet national and international needs as well as promoting linkages between institute. In addition, to produce qualified students with knowledge and ability to solve problems on pre and postharvest losses of agricultural products.

Course Synopsis and Methodology:

1. Study plan

<u>1st Year/ 1st Semester</u>		Credit (Lecture-Practical-Shelf study)
Code	Subject	(hour/week)
PHT 601	Research Techniques in Postharvest Technology	3 (2-3-7)
PHT 621	Postharvest Handling System of Perishable Crops	3 (2-3-7)
PHT xxx	Elective 1	<u>3</u> (x-x-x)
PHT xxx	Elective 2	<u>3</u> (x-x-x)
Total		12
Accumulative credit		12
<u>1st Year/ 2nd Semester</u>		Credit (Lecture-Practical-Shelf study)
Code	Subject	(hour/week)
PHT 612	Agricultural Production Systems	3 (2-3-7)
PHT 691	Seminar in Postharvest Technology I	1 (0-2-7)
PHT 699	Thesis	2 (-)
PHT xxx	Elective 3	<u>3</u> (x-x-x)
Total		9
Accumulative credit		21
<u>2nd Year/ 1st Semester</u>		Credit (Lecture-Practical-Shelf study)
Code	Subject	(hour/week)
PHT 698	Special Problem	3 (0-3-9)

PHT xxx	Elective 4	3 (x-x-x)
PHT 699	Thesis	3 (-)
Total		9
Accumulative credit		30
<u>2nd Year/ 2nd Semester</u>		Credit (Lecture-Practical-Shelf study)
Code	Subject	(hour/week)
PHT 692	Seminar in Postharvest Technology II	1 (0-2-7)
PHT 699	Thesis	7 (-)
Total		8
Accumulative credit		38

Estimated timeline for thesis plan

Submission of thesis proposal : February 2022

Thesis proposal examination : May 2022

First thesis progressive examination : December 2022

Second thesis progressive examination : May 2023

Comprehensive examination : July 2023

Thesis defense examination : December 2023

2. Course Content

The division of postharvest technology offers graduate work leading to Master of Science in AgriScience and Technology (Postharvest) with majors in pre-harvest and postharvest technology of perishable crops, postharvest technology of cereals and grain legumes. With a major, the main areas of specialization are physiology, entomology, pathology and engineering. The facilities available for graduate training include green house, laboratory of postharvest physiology, laboratory of postharvest enzymes and molecular biology, packinghouse unit and others. Graduate work in this division is designed to develop a high order of independent thought, broad knowledge and technical skills. The emphasis in graduate work is placed on research, supplemented by courses and seminars.

CURRICULUM

Course Requirement

1. Compulsory Courses 14 credits

PHT 601 Research Techniques in Postharvest Technology	3 (2-3-7)
PHT 612 Agricultural Production Systems	3 (3-0-9)
PHT 621 Postharvest Handling System of Perishable Crops	3 (2-3-7)
PHT 691 Seminar in Postharvest Technology I	1 (0-2-7)
PHT 692 Seminar in Postharvest Technology II	1 (0-2-7)
PHT 698 Special Problem	3 (0-3-9)

2. Electives in Postharvest Technology Courses 12 credits

PHT 602 Statistics for Agricultural Research	3 (2-3-9)
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PHT 603 Agricultural Information Systems	3 (2-3-9)
PHT 611 Postharvest Losses of Agricultural Products	3 (3 0 9)
PHT 622 Postharvest Physiology and Technology of Agricultural Commodities	3 (3-0-9)
PHT 623 Postharvest Handling System of Ornamental Plants	3 (2-3-7)
PHT 624 Fresh-cut Technology for Fruits and Vegetables	3 (2-3-7)
PHT 631 Postharvest Handling System of Cereals and Grains	3 (3-0-9)
PHT 632 Postharvest Technology of Seeds	3 (2-3-7)
PHT 651 Smart Farming Systems and Emerging Technology	3 (3-0-9)
PHT 652 Management System Designs of Packing House for Agricultural	3 (3-0-9)
PHT 653 Produce Packaging System	3 (2-3-7)
PHT 661 Postharvest Insect Pest of Agricultural Products	3 (2-3-7)
PHT 662 Postharvest Pathology of Agricultural Products	3 (2-3-7)
PHT 671 Supply Chain Management and Logistics for Agricultural Commodities	3 (3-0-9)
PHT 672 Quality Management of Agricultural Produce	3 (3-0-9)
PHT 673 Business Management of Agricultural Commodities	3 (3-0-9)
PHT 697 Selected Topics in Postharvest Technology	3 (3-0-9)
<i>3. Master Thesis</i>	
PHT 699 Thesis	12 credits

Graduation Conditions:

Students who want to graduate must fulfill the requirements as the follows;

- Students must complete study according to curriculum structures.
- Students must fulfill the program requirement with a GPA of at least 3.00.
- Students must pass a comprehensive examination.
- Pass a thesis defense examination with the result “PASSED”.
- Before being awarded a degree, students need to have their research work published in recognized national or international journals/proceeding, or their equivalent.

Applicant Qualifications:

Applicants must hold a Bachelor's Degree in Engineering or Science (Agriculture, relevant Biological or Environmental Science, Food technology) average (GPA) of 2.75 or must has an experience in professional work at least 1 year.

Document Required:

- Application form
- Completed transcript record
- Curriculum vitae
- 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

Contact:

1. Contact person for the detail of study program

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2. Program coordinator/ Student administrator

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For more information:

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***The application procedure will complete when TICA has received the hard copy of the application form and other related documents through the Royal Thai Embassy/Permanent Mission of Thailand to the United Nations/Royal Thai Consulate – General accredited to eligible countries/territories.