Course Detail

Master of Science Program in Food Science and Technology (International Program)

Course Title: Master of Science Program in Food Science and Technology (International Program) New Curriculum 2015

Master Degree: Master of Science **(**Food Science and Technology**)**

Academic Institution: Faculty of Agro-Industry, Chiang Mai University

Duration: 2 Academic years

Background and Rational:

The International Program of Master's Degree in Food Science and Technology has been approved and provided by Faculty of Agro-Industry, Chiang Mai University, beginning year of the program in Academic Year 2015 as its first semester.

The Master of Science curriculum in Food Science and Technology (International Program) is the curriculum that emphasizing the internationalization by integrating advanced knowledge in the field of Food Science and Technology for food production with quality and safety in response to the demands of the world's market through research process and creation of knowledge. This will lead to the improvement and efficient development of food production and processing on national, South East Asia sub region, and international levels.

This science program on graduate study level, taught in English, will be recruiting both qualified Thai and International students. This program offers an opportunity to a select group of international students to learn and experience how to conduct a research and innovation in the field of Food Science and Technology by focusing on research with the characteristics of cooperation and multi-Interdisciplinary in order to implement acquired knowledge which is beneficial for the industrial development on both national and international levels.

There are many career options for students in the international program after their graduation i.e. Food Scientist, Food Safety Supervisor, Food Safety Inspector, Food Engineering Expert or Supervisor, Nutritionist, Lecturer, Academic Expert, Nutrition Consultant, Food Safety Consultant, Food Processing Consultant, Agro-Industrial business company owner, Factory entrepreneur, Food Product Supervisor, Quality Assurance Supervisor, Agro-Industrial Researcher and Product Development Manager.

Objectives:

1. To produce the graduates who have knowledge, ability and skills to carry out work relevant to food production and food quality control utilizing advanced level food technologies with the research ability in the field of Food Science and Technology. These can be achieved through critical thinking, analyses, and integration of the theoretical concepts on advanced level of Food

Science and Technology so that food industrial based problems or improvement can be resolved effectively.

2. To produce the graduates who have virtue, ethics, and maturity in performing the proper profession in both governmental and private sectors with the ability of analytical thinking and tackle problems based on systematic approach and morality.

3. To produce the graduates who have the ability in promoting the knowledge at both local and international levels. This will also include knowledge exchange with academics, policy makers, and members of the food industry organization in order to develop such organization in accordance with the international standard.

4. To produce the graduates who have good human relations are able to communicate with group members are able to implement of various types of information technology and are able to plan an efficient personal and organizational improvement.

Course Synopsis and Methodology:

Study plan

Length of Program

The program is designed to be two academic years, and the period of study shall not exceed 4 academic years for both Plan A Type A1 and Plan A Type A2

1. Plan A Type A 1

First Year

First semester		Credits	Second Semester		Credits
	Preparation of thesis proposal	-	601797	Thesis	12
	Proposing of thesis topic	-		Organizing seminar and presentation	-
	Total	**-**		**Total**	**12**

Second year

First semester		Credits	Second Semester		Credits
601797	Thesis	12	601797	Thesis	12
	Organizing seminar and presentation	-		Organizing seminar and presentation	-
				Taking the comprehensive examination	
				Defending Thesis	
	Total	12		**Total**	12

Total 36 credits throughout the program

2. Plan A Type A 2

First year

First semester		Credits	Second Semester		Credits
604715	Physical and Engineering Properties of Foods	3	601745	Advanced Food Processing and Technology	3
601731	Advanced Food Microbiology	3	601775	Advanced Food Science and Food Analysis	4
601758	Food Research Statistics	3		Elective subject	3
	Elective subject	3		Organizing seminar and presentation	-
	Organizing seminar and presentation	-		Preparation of thesis proposal	-
				Proposing of thesis topic	-
	Total	12		Total	10

Second Year

First semester		Credits	Second Semester		Credits
601791	Seminar 1	1	601792	Seminar 2	1
601799	Thesis	6	601799	Thesis	6
	Total	7		Total	7

A total of credits throughout the program will not be lesser than 36 credits

Academic Year (2017)

First Semester: August – December
Second Semester: January – May
Summer (Optional): Not available
Curriculum Operation: Semester System (bi – semesters)
One regular semester with no less than 15 weeks in each semester
Leaning time: in Office hours from Mon. – Fri. at 08.30 a.m. – 04.30 p.m.)

Field of Research

The International Program provides the advanced learning and research in the field of Food Science and Technology.

Courses

Program of Study

1. Plan A Type A 1

Degree Requirements **36** **credits**

A. Thesis 36 credits

601797 FST 797 Master's Thesis 36 credits

B. Academic activities

1) A student has to organize and present a seminar on the topic related to his/her thesis for at least 3 semesters and students have to attend seminar every semester throughout the studying period

2) The thesis or part of the thesis must

2.1) At least 1 master's thesis work or a part of master's thesis work must be published or at least accepted to publish in English in a national journal listed in TCI Tier 1 database and the student's name must be listed as the first author, **and** at least 1 master's thesis work or a part of master's thesis work must be presented in national conference accepted by the field of study and a full paper, written in English with the name of student listed as the first author, must be published in the peer reviewed Proceedings; **OR**

2.2) Be granted a patent **and** at least 1 master's thesis work or a part of master's thesis work must be presented in an international conference accepted by the field of study; and a full paper, written in English with the name of student listed as the first author, must be published in the peer reviewed Proceedings.

3) A student has to report thesis progression by following the format of results report stipulated by the Graduate School with approval by the Chairman of the Graduate Study Committee every semester

C. Non-credit Courses

1) Graduate School requirement : English language

2) Program requirement: in accordance with the consent of the adviser or the curriculum committee

D. Comprehensive examination

The student has to send a request form for comprehensive examination to Graduate School which is pre-approved by general or thesis advisers.

2. Plan A Type A2

Degree Requirements			**a minimum of**	**36 credits**
A.	**Coursework**		**a minimum of**	**24 credits**
1.	**Graduate Courses**		**a minimum of**	**24 credits**
1.1 Subjects inside field of concentration			a minimum of	24 credits
1.1.1 Required courses				18 credits
601731	FST 731	Advanced Food Microbiology		3 credits
601745	FST 745	Advanced Food Processing and Technology		3 credits
601758	FST 758	Food Research Statistics		3 credits
601775	FST 775	Advanced Food Science and Food Analysis		4 credits
601791	FST 791	Seminar 1		1 credit

601792	FST 792	Seminar 2	1 credit
604715	FE 715	Physical and Engineering Properties of Foods	3 credits

1.1.2 Elective courses a minimum of 6 credits

The students select elective courses as following:

601711		Cereal and Legume Chemistry	3 credits
601712		Carbohydrate in Foods	3 credits
601722	FST 722	Enzymes in Food Processing	3 credits
601723	FST 723	Minimally Processed Fruits and Vegetables	3 credits
601724	FST 724	Advanced Food Technology	3 credits
601729	FST 729	Fresh Product Management	3 credits
601742	FST 742	Food Encapsulation Technology	3 credits
601743	FST 743	Food Powder Technology	3 credits
601744	FST 744	Production Technology for Aerated Foods	3 credits
601746	FST 746	Advanced Marine Biotechnology	3 credits
601753	FST 753	Quality Control and Safety in Marine Products	3 credits
601754	FST 754	Utilization of Seafood Waste in Healthy Foods	3 credits
601755	FST 755	Mathematical Modeling for Bioprocess	3 credits
601765	FST 765	Food for Health	3 credits
601766	FST 766	Nutrition Labelling of Processed Food	3 credits
601767	FST 767	Advanced Human Nutrition	3 credits
601768	FST 768	Protein Functionality and Application	3 credits
601769	FST 769	Nutrient Metabolism	3 credits
601770	FST 770	Nutrition in Health and Disease	3 credits
601787	FST 787	Selected Topics in Food Science and Technology 1	1 credit
601788	FST 788	Selected Topics in Food Science and Technology 2	2 credits
601789	FST 789	Selected Topics in Food Science and Technology 3	3 credits
601811	FST 811	Dairy Chemistry and Microbiology	3 credits
601844	FST 844	Advanced Food Stability	3 credits
603724	PKT 724	Advanced Food Packaging Materials and Testing	3 credits
603743	PKT 743	Food Packaging Innovation	3 credits
603752	PKT 752	Food Packaging Design and Marketing	3 credits
604741	FE 741	Equipment Design in Food Industry	3 credits
604743	FE 743	Rheology of Foods and Biomaterials	3 credits
604751	FE 751	Postharvest System Engineering of Agricultural Products	3 credits
604761	FE 761	Drying Technology	3 credits
604762	FE 762	Frying Technology	3 credits
604764	FE 764	Membrane Technology	3 credits
604765	FE 765	Extrusion Technology	3 credits
604766	FE 766	Non-thermal Food Processing	3 credits
604767	FE 767	Supply Chain Management in Food Industry	3 credits

604843	FE 843	Advanced Kinetic Analysis in Food Process Engineering	3	credits
604844	FE 844	Advanced Processing and Biochemistry of Functional Foods	3	credits
604845	FE 845	Food Preservation by Pulsed Electric Fields	3	credits
604846	FE 846	Transport Phenomena in Food Processing	3	credits
604847	FE 847	Water Activity in Food Process Engineering	3	credits
604848	FE 848	Fluidization in Food Processing	3	credits
604849	FE 849	Development of Mathematical Modeling and Simulation in Food Process Engineering with Visual Basic Applications Programming	3	credits

or select from subjects with course code level of 700 or above with the consent of the graduate program administrative committee

1.2 Subjects outside field of concentration (If any) with course code level of 700 or above with the consent of the graduate program administrative committee

2. Advanced Undergraduate Subjects - none -

B. Thesis **12 credits**

601799 FST 799 Thesis 12 credits

C. Non-credit Courses

1) Graduate school requirement: - a foreign language

2) Program requirement

Students who did not graduate from the field of Food Science and Technology in Bachelor Degree level are required to enroll in the subjects which will not be included as cumulative credits as following;

601701 FST 701	Food Microbiology and Chemistry	4	credits
601702 FST 702	Food Processing and Engineering	4	credits

The assessment result will be presented in S/U grading: "S" stands for "satisfactory" and "U" stands for "unsatisfactory" works.

D. Academic activities

1) A student has to organize and present a seminar on the topic related to his/her thesis for at least 2 semesters and students have to attend seminar every semester throughout the studying period

2) The thesis or part of the thesis must

2.1) be published or be processed to ensure that the research results or part of research results are accepted for at least one publication in the international journal or academic article with database at the Tier 1 level or be presented in the academic conference with at least one proceeding and the name of the student must appear as first author for at least one item. The published article must also be in full paper format in the journal with a peer reviewing committee or

2.2) be granted a petty patent or a patent

3) A student has to report thesis progression by following the format of results report stipulated by the Graduate School with approval by the Chairman of the Graduate Study Committee every semester

Graduation Conditions:

The Curriculum for Plan A Type A 1 program

1. A student must pass the foreign language examination under the requirements set by the graduate school of Chiang Mai University.

2. A student must complete all requirements of the program division.

3. A student must pass the comprehensive examination.

4. A student must successfully pass the thesis defense examination.

5. The whole or part of a thesis must be

5.1 Be published or processed to ensure that the research results or part of research results are accepted for at least one publication in the scientific journal or academic article, and be presents in the academic conference with at least one proceeding and the student must appear as the first author for at least in one item. The published article must also be in full paper format in the journal with a peer reviewing committee or

5.2 Be granted a petty patent or a patent or be published in the journal or academic article for at least one item or be presented in the academic conference with at least one proceeding and the name of the student must appear as first author for at least one item. The published article must also be in full paper format in the journal with a peer reviewing committee.

6. A student must meet the qualifications as outlined in the Chiang Mai University Regulations on student honors, 2023

The Curriculum for Plan A Type A 2 program

1. A student must pass the foreign language examination under the requirements set by the graduate school of Chiang Mai University.

2. A student must complete the coursework and meet all requirements of the program division.

3. A student must earn the cumulative GPA of at least 3.00 and have the GPA of at least 3.00 for subjects in field of concertration.

4. A student must successfully pass the thesis defense examination.

5. The whole or part of a thesis must be

5.1 Be published or processed to ensure that the research results or part of research results are accepted for at least one publication in the journal or academic article or be presents in the academic conference with at least one proceeding and the name of the student must appear as the first author for at least in one item. The published article must also be in full paper format in the journal with a peer reviewing committee or

5.2 Be granted a petty patent or a patent.

6. A student must meet the qualifications as outlined in the Chiang Mai University Regulations on student honors, 2023.

Applicant Qualifications:

1. This will be in accordance with the Chiang Mai University Announcement of Candidates Eligible for Admission to an International Graduate Program for each academic year.
2. The students must complete a Bachelor's degree in the field of Food Science and Technology, Food Processing Technology, Packaging Technology, Marine Product

Technology, Product Development Technology, Biotechnology, Nutrition Sciences or other related fields, with a minimum grade point average (GPA) of 2.50 and graduated from either educational institutions accredited by the Office of Higher Education Commission or from other institutions with grade point equivalent to 2.50

3. Pass the fundamental English language qualification and show the proof of English test which must be valid within 2 years from the counting time of the application date. The evidence must indicate the minimum standards in the English language below:

TOEFL	Minimum 523 (paper-based) or
	Minimum 523 (ITP) or
	Minimum 193 (CBT) or
	Minimum 69 (IBT) or
IELTS	band 5.5 or
CMU-eTEGS	65

4. For the lack of evidence or the applicant has the proof of English language which is resulted less scores than the required standards above (no. 3), the approval of admission will be considered on the consent of the curriculum management committee. In case that the applicant is accepted to the program, he/she must take an English proficiency test and provide further the proof of result which passes the requiring standards announced by the Graduate School, prior to submit the thesis topic and draft of proposal.

5. Other qualifications apart from those mentioned will be given according to the discretion of the Committee of Graduate Program in the Division of Food Science and Technology.

Document Required:

Application materials:

1. A completed application form
2. Four 1-inch square photographs of ID/ passport type taken not more than six months.
3. An official proof of the applicant's undergraduate degree.
4. An official transcript written in English of the applicant's academic records.
5. A letter of recommendation written by the head of the applicant's affiliated institution or enterprise.
6. The applicant's concept proposal of about 800 – 1,000 words in one page of A4 paper-typed describing the research outline and/or previous research experience and research work presented at meetings and/or published (if any).
7. Official proof of English proficiency such as either the TOEFL or the IELTS with the following score criteria;

TOEFL	Minimum	523 (paper-based) or
	Minimum	523 (ITP) or
	Minimum	193 (CBT) or
	Minimum	69 (IBT) or
IELTS	band 5.5 or	
	CMU-eTEGS	65

8. Copy of Awards/ Certification (If any).
9. Additional documents: A copy of valid passport

Contact:

1. Ass. Prof.Dr.Pilairuk Intipunya
Faculty of Agro-Industry,
Chiang Mai University
Tel: 66-53-948246
Fax: 66-53-948-218
Email: pilairuk@hotmail.com

2. Suthinee Songsrikate
Coordinating officer (International Program)
School of Agro-Industry
Faculty of Agro-Industry
Chiang Mai University
Tel/Fax: 66-53-948218
Email: suthinee.s@cmu.ac.th

Website: http://www.agro.cmu.ac.th

For more information:

Bureau of International Cooperation on Human Resources Development
Thailand International Cooperation Agency (TICA)
Government Complex, Building B (South Zone), 8th Floor,
Chaengwattana Rd. Laksi District, Bangkok 10210 THAILAND
Tel. +66 (2) 203 5000 ext. 43305, 43306 Fax: +66 (2) 143 8451
E-mail: tipp@mfa.mail.go.th

***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.