

Curriculum Details

Institution Name : Chiang Mai University, the Graduate School and Faculty of Agro–Industry

Program Doctor of Philosophy Program in Food Science and Technology
(International Program) New Curriculum 2017

Types Type 1.1 (By Thesis) Total 48 Credits
Type 2.1 (By Thesis and Coursework) A minimum of 48 Credits

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

Program at a Glance

1. Degree Awarded

Thai	: Full	ปรัชญาดุษฎีบัณฑิต (วิทยาศาสตร์และเทคโนโลยีการอาหาร)
	: Abbreviated	ปร.ด. (วิทยาศาสตร์และเทคโนโลยีการอาหาร)
English	: Full	Doctor of Philosophy (Food Science and Technology)
	: Abbreviated	Ph.D. (Food Science and Technology)

2. Length of Program

The program is designed for 3 academic years and the period of study shall not exceed 6 academic years.

3. Qualification of the applicants

Type 1.1 is suitable for the graduates with Master's degree

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. Applicants must complete a Master's degree in the field of Food Science and Technology, Food Processing Technology or other related field which is in the consent of the Management committee with a minimum grade point average (GPA) of 3.50

3. Applicants must pass the test on English proficiency for the graduate study and show the proof of English test which must be valid within 2 years from the counting time of the application date.

4. 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.

Type 2.1 is suitable for the graduates with Master's degree

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. Applicants must complete a Master's degree in the field of Food Science and Technology, Food Processing Technology or other related field which is in the consent of the Management committee with a minimum grade point average (GPA) of 3.25

3. Applicants must pass the test on English proficiency for the graduate study and show the proof of English test which must be valid within 2 years from the counting time of the application date.

4. 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.

The criteria of scores for the English proficiency assessment from the institutions certified by Graduate School, Chiang Mai University is as follows;

Institutions	Qualification of applicants enrolling to any programs at doctoral level
CMU-eTEGS	45
CU-TEP	45
TU-GET	550
KU-EPT	50
IELTS	4.0
TOEFL	PBT : 450 CBT : 133 IBT : 45

4. Program of Study

Type 1.1: For student with Master's Degree Total credit 48 credits

A. Thesis 48 credits

601898 FST 898 Dissertation 48 credits

B. Academic activities

1. A student has to organize and/or present a seminar in English on the topic related to his/her thesis once every semester for at least 4 semesters and students have to attend seminar every semester throughout the studying period.
2. At least 3 papers from dissertation or parts of dissertation works must be published or accepted for publication. Amongst them, at least 2 publications must be in the international journals which are listed in ISI, Scopus, PubMed or Web of Science database, and the name of student must appear as the first author in at least 1 paper. In addition, at least 1 dissertation work or part of dissertation work must be presented in an international conference accepted in the field of study or have patent or petty patent.
3. A student has to report dissertation progression and the participation in the seminar and/or his or her seminar presentation to the Graduate School every semester, for approval at the Chairman of the Graduate Study Committee and submit to the Graduate School every semester.

C. Non-credit Courses

1. Graduate School requirement – Pass a foreign language examination
2. Program requirement – With consent of the advisor or curriculum management committee, students who do not graduate with a Food Science and Technology background are required to register the subjects which are not counted as cumulative credits. The required subjects are as follows:

601701 FST 701 Food Microbiology and Chemistry 4 credits

601702 FST 702 Food Processing and Engineering 4 credits

The students enroll in classes will receive S/U grading: "S" stands for "satisfactory" work and "U" stands for "unsatisfactory" work.

D. Qualifying Examination

1. A student must complete a qualifying examination to evaluate his/her ability before presenting a thesis proposal.
2. An unsuccessful examinee may take re-examination within the following regular semester.

3. An unsuccessful examinee may be transferred to Master's Degree studies with the approval of the Graduate Program Administrative Committee.

E. Comprehensive Examination

A student must complete the comprehensive examination. A student is therefore required to submit a request form to the Graduate School with approval of the general advisor or main thesis advisor.

Type 2.1: For student with Master's Degree

Total credit		a minimum of	48	credits
A. Course work		a minimum of	12	credits
1. Graduate Courses		a minimum of	12	credits
1.1 Field of specialization courses		a minimum of	12	credits
1.1.1 Required courses			9	credits
601812	FST 812	Advanced Food Microbiology and Chemistry	3	credits
601842	FST 842	Physical and Engineering Properties of Food	3	credits
601891	FST 891	Ph.D. Seminar 1	1	credit
601892	FST 892	Ph.D. Seminar 2	1	credit
601893	FST 893	Ph.D. Seminar 3	1	credit
1.1.2 Elective courses		a minimum of	3	credits
		The courses are able to be selected presented as follows:		
601722	FST 722	Enzymes in Food Processing	3	credits
601723	FST 723	Minimally Processed Fruits and Vegetables	3	credits
601729	FST 729	Processing of Fresh Products	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
601745	FST 745	Advanced Food Processing and Technology	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
601775	FST 775	Advanced Food Science and Food Analysis	4	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	Nonthermal 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 students may select any other 700 level of non–major courses with consent of the graduate program administrative committee.

Note: For students who graduated from the Master’s degree program provided by Faculty of Agro–Industry, Chiang Mai University, the selected courses must be different from the courses taken in the master degree’s course work.

1.2 Other courses (if any) 700 level of non–major courses with consent of the graduate program administrative committee.

2. Advanced Undergraduate Courses: – None –

B. Thesis

601899	FST 899	Dissertation	36	credits
--------	---------	--------------	----	---------

C. Non-credit Courses

1. Graduate School requirement – A foreign language
2. Program requirement – With consent of the advisor or curriculum management committee, students who do not graduate with a Food Science and Technology background are required to register the subjects which are not counted as cumulative credits. The required subjects are as follows:

601701	FST 701	Food Microbiology and Chemistry	4	credits
--------	---------	---------------------------------	---	---------

601702	FST 702	Food Processing and Engineering	4	credits
--------	---------	---------------------------------	---	---------

The students enroll in classes will receive S/U grading: "S" stands for "satisfactory" work and "U" stands for "unsatisfactory" work.

D. Academic activities

1. A student has to organize and/or present a seminar in English on the topic related to his/her dissertation once every semester for at least 4 semesters and students have to attend seminar every semester throughout the studying period.
2. At least 2 papers from dissertation or parts of dissertation works must be published or accepted for publication. Amongst them, at least 1 publication must be in the international journals which are listed in ISI, Scopus, PubMed or Web of Science database, and the name of student must appear as the first author. In addition, at least 1 dissertation work or part of dissertation work must be presented in an international conference accepted in the field of study or have patent or petty patent.
3. A student has to report dissertation progression and the participation in the seminar and/or his or her seminar presentation to the Graduate School every semester, for approval at the Chairman of the Graduate Study Committee and submit to the Graduate School every semester.

E. Qualifying Examination

1. A student must complete a qualifying examination to evaluate his/her ability before presenting a thesis proposal.
2. An unsuccessful examinee may take re-examination within the following regular semester.
3. An unsuccessful examinee will be transferred to Master's Degree studies with the approval of the Graduate Program Administrative Committee.

F. Comprehensive Examination

A student must complete the comprehensive examination. A student is therefore required to submit a request form to the Graduate School with approval of the general advisor or main thesis advisor.

Coursework

(1) Required subjects

601812	FST 812	Advanced Food Microbiology and Chemistry	3(3-0-6)
601842	FST 842	Physical and Engineering Properties of Food	3(2-3-4)
601891	FST 891	Ph.D. Seminar 1	1(1-0-2)
601892	FST 892	Ph.D. Seminar 2	1(1-0-2)
601893	FST 893	Ph.D. Seminar 3	1(1-0-2)

(2) Elective subjects inside field of specialization

601722	FST 722	Enzymes in Food Processing	3(2-3-4)
601723	FST 723	Minimally Processed Fruits and Vegetables	3(2-3-4)
601724	FST 724	Advanced Food Technology	3(3-0-6)
601729	FST 729	Processing of Fresh Products	3(3-0-6)
601742	FST 742	Food Encapsulation Technology	3(3-0-6)
601743	FST 743	Food Powder Technology	3(3-0-6)
601744	FST 744	Production Technology for Aerated Foods	3(3-0-6)
601745	FST 745	Advanced Food Processing and Technology	3(2-3-4)
601746	FST 746	Advanced Marine Biotechnology	3(3-0-6)
601753	FST 753	Quality Control and Safety in Marine Products	3(2-3-4)
601754	FST 754	Utilization of Seafood Waste in Healthy Foods	3(2-3-4)
601755	FST 755	Mathematical Modeling for Bioprocess	3(2-3-4)
601765	FST 765	Food for Health	3(3-0-6)
601766	FST 766	Nutrition Labelling of Processed Food	3(3-0-6)
601767	FST 767	Advanced Human Nutrition	3(3-0-6)
601768	FST 768	Protein Functionality and Application	3(3-0-6)
601769	FST 769	Nutrient Metabolism	3(3-0-6)
601770	FST 770	Nutrition in Health and Disease	3(3-0-6)
601775	FST 775	Advanced Food Science and Food Analysis	4(3-3-6)
601787	FST 787	Selected Topics in Food Science and Technology 1	1(1-0-2)

601788	FST 788	Selected Topics in Food Science and Technology 2	2(2-0-4)
601789	FST 789	Selected Topics in Food Science and Technology 3	3(3-0-6)
601811	FST 811	Dairy Chemistry and Microbiology	3(2-3-4)
601844	FST 844	Advanced Food Stability	3(2-3-4)
603724	PTB 724	Advanced Food Packaging Materials and Testing	3(3-0-6)
603743	PTB 743	Food Packaging Innovation	3(3-0-6)
603752	PTB 752	Food Packaging Design and Marketing	3(3-0-6)
604741	FE 741	Equipment Design in Food Industry	3(3-0-6)
604743	FE 743	Rheology of Foods and Biomaterials	3(2-3-4)
604751	FE 751	Postharvest System Engineering of Agricultural Products	3(3-0-6)
604761	FE 761	Drying Technology	3(3-0-6)
604762	FE 762	Frying Technology	3(3-0-6)
604764	FE 764	Membrane Technology	3(3-0-6)
604765	FE 765	Extrusion Technology	3(2-3-6)
604766	FE 766	Nonthermal Food Processing	3(3-0-6)
604767	FE 767	Supply Chain Management in Food Industry	3(3-0-6)
604843	FE 843	Advanced Kinetic Analysis in Food Process Engineering	3 (3-0-6)
604844	FE 844	Advanced Processing and Biochemistry of Functional Foods	3 (3-0-6)
604845	FE 845	Food Preservation by Pulsed Electric Fields	3 (3-0-6)
604846	FE 846	Transport Phenomena in Food Processing	3 (3-0-6)
604847	FE 847	Water Activity in Food Process Engineering	3 (3-0-6)
604848	FE 848	Fluidization in Food Processing	3 (3-0-6)
604849	FE 849	Development of Mathematical Modeling and Simulation in Food Process Engineering with Visual Basic Applications Programming	3 (3-0-6)

(3) Elective subjects outside field of specialization

Subjects with course code level of 700 or above with the consent of the graduate program administrative committee

(4) Thesis

601898	FST 898	Dissertation	48 Credits
601899	FST 899	Dissertation	36 Credits

(5) Subjects in accordance with conditions of the Division

601701	FST 701	Food Microbiology and Chemistry	4(3-3-6)
601702	FST 702	Food Processing and Engineering	4(3-3-6)

Note : Definition of code and number of subjects

The code of curriculum coursework consists of the abbreviation of coursework (i.e. 601, 603) following by 3 digits of number, it can be explained as below,

The hundredth digit means code of subjects in graduate level

The tenth digit means subject categories of each division

The unit digit means the series number of subject in each category

Study Plan

Type 1.1 for a student with Master's degree

First Year

1 st Semester		Credits	2 nd Semester		Credits
With consent of the advisor or curriculum management committee, students who do not graduate with a Food Science and Technology background are required to register the subjects which are not counted as cumulative credits. The required subjects are as follows:			601898	Dissertation	12
				Organizing seminar and presentation	-
601701	Food Microbiology and Chemistry	(4)			
601702	Food Processing and Engineering	(4)			
General registration	Enrollment for services and facilities of university	-			
	Organizing seminar and presentation	-			
	Passing foreign language requirement	-			
	Passing qualifying examination	-			
	Proposing of thesis topic	-			
	Total	-		Total	12

Second Year

1 st Semester		Credits	2 nd Semester		Credits
601898	Dissertation	12	601898	Dissertation	12
	Organizing seminar and presentation	-		Organizing seminar and presentation	-
	Total	12		Total	12

Third Year

1 st Semester		Credits	2 nd Semester		Credits
601898	Dissertation	12		Enrollment for services and facilities of university	-
	Organizing seminar and presentation	-		Organizing seminar and presentation	-
				Taking the comprehensive examination	
				Defending Thesis	
	Total	12		Total	-

Total 48 credits throughout the program

Type 2.1 for a student with Master's degree

First Year

1 st Semester		Credits	2 nd Semester		Credits
With consent of the advisor or curriculum management committee, students who do not graduate with a Food Science and Technology background are required to register the subjects which are not counted as cumulative credits. The required subjects are as follows:			601891	Dissertation	1
				Elective subject	3
				Organizing seminar and presentation	
				Passing foreign language requirement	
601701	Food Microbiology and Chemistry	(4)		Proposing of thesis topic	
601702	Food Processing and Engineering	(4)			
601842	Physical and Engineering Properties of Food	3			
601812	Advanced Food Microbiology and Food Chemistry	3			
	Organizing seminar and presentation				
	Total	6		Total	4

Second Year

1 st Semester		Credits	2 nd Semester		Credits
601892	Ph.D. Seminar 2	1	601899	Dissertation	12
601899	Dissertation	12		Organizing seminar and presentation	
	Total	13		Total	12

Third Year

1 st Semester		Credits	2 nd Semester		Credits
601893	Ph.D. Seminar 3	1		Enrollment for services and facilities of university	
601899	Dissertation	12		Taking the comprehensive examination	
				Organizing seminar and presentation	
				Defending Thesis	
	Total	13		รวม	-

A total of credits throughout the program will not be lesser than 48 credits

5. Academic Year 2018

First Semester:	August – December 2018
Second Semester:	January – May 2019
Summer (Optional):	Not available
Curriculum Operation:	Semester System (bi – semesters) One regular semester with no less than 15 weeks in each semester
Learning time:	in Office hours from Mon. – Fri. at 08.30 a.m. – 04.30 p.m.)

6. Tuition and Fees

Tuition fee per person:

Package tuition fee of the program for Type 1.1 and 2.1

Full time Thai Students 465,000 Baht / whole program

Full time foreign students 585,000 Baht / whole program

Application Fee: THB 900 (excluded of fee of bank transfer)

7. Other Recommendation

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 Master 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 previous research experience and research work presented at meetings and/or published (if any) and research outline or criteria for study in the program.
7. An Official valid proof of English proficiency
8. Copy of Awards/ Certification (If any).
9. Additional documents for Thai applicants:
 - 9.1 A copy of Thai national ID card
 - 9.2 A copy of Thai residential registration
10. Additional documents for foreign applicants: A copy of valid passport.

8. Contact Information:

1. Assoc. Prof. Dr. Noppol Leksawasdi
Head of School of Agro-Industry,
Faculty of Agro-Industry,
Chiang Mai University
Tel: 66-53-948-274 Fax: 66-53-948-218
Email: noppol@hotmail.com

2. Mrs. Nattaluck Buranasilapin
Coordinating officer (International Program)
School of Agro-Industry
Faculty of Agro-Industry
Chiang Mai University
Tel/Fax: 66-53-948218
Email: nattaluck28@gmail.com

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



The banner features the Chiang Mai University logo on the left. The main text reads "International Program" in large purple letters, followed by "MS & PhD in Food Science and Technology" in yellow and white. Below this, it says "Faculty of Agro-Industry and the Graduate School Chiang Mai University". A QR code is in the bottom left. The website URL "http://www.agro.cmu.ac.th/agro60/school/inter_fst.php" and contact number "Contact us :Tel. 66 53 948218" are at the bottom. The right side of the banner contains several images: a person in a lab coat working with equipment, a person presenting at a screen, and two graduates in caps and gowns.