

Department of Food Science and Technology

Doctor of Philosophy Program in Food Science (International Program)

Ph.D. (Food Science)

Option 1.1:

Total credits required: minimum 48 credits

(1) Major courses: minimum 4 Credits (audit)

- Seminar: 4 credits

01052697 Seminar 1,1,1,1

(2) Thesis: minimum 48 credits

01052699 Thesis 1-48

Option 2.1:

Total credits required: minimum 48 credits

(1) Major courses: minimum 12 credits

- Seminar: 4 credits

01052697 Seminar 1,1,1,1

- Major requirements: 3 credits

01052691 Advanced Research Methods in Food Science 3(2-3-6)

- Major electives: minimum 5 credits

Students are required to choose at least 3 credits of 600 level courses in the field of Food

Science from the list below

01052611 Advanced Food Analysis 3(2-3-6)

01052612 Advanced Food Additives 3(2-3-6)

01052613 Food Materials 2(1-3-4)

01052631 Physical and Engineering Properties of Biomaterials 3(3-0-6)

01052661 Advanced Food Microbiology 3(2-3-6)

01052696 Selected Topics in Food Science and Technology 1-3

01052698 Special Problems 1-3

In addition, students may choose at least 2 credits of 500 level courses in the field of Food Science or other related field. He/she must gain approval from advisory committee, Head of Department, and the Dean of the Graduate School.

(2) Thesis: minimum 36 credits

01052699 Thesis 1-36

Course Description

01052611 Advanced Food Analysis 3(2-3-6)

Modern methods, current techniques, and progress in various food analyses.

Development and improvement of appropriate food analytical methods for specific situation. Field trip required.

01052612 Advanced Food Additives 3(2-3-6)

Current research on different aspects of food additives. New food additives.

Toxicological significance and use of food additives. Modern techniques in food additive analysis.

01052613	Food Materials	2(1-3-4)
	Physics related to food structure creation of nutrients and food ingredients having self-assembling characteristics. Interactions and chemical bonds within food structure fabricated during processing and storage associated with materials properties of food products under the alterations of stress, strain and time. Evaluation methods of the materials property changes in food.	
01052631	Physical and Engineering Properties of Biomaterials	3(3-0-6)
	Structure of solid biomaterials. Physical and engineering properties of biomaterials including mechanical, surface, thermal and electrical properties. Changes of properties and testing. Phase transition of biomaterials. Case study.	
01052661	Advanced Food Microbiology	3(2-3-6)
	Quantitative evaluation of microorganisms in food by modern, rapid and automatic techniques. Microbiological quality assurance of food. Relationship between starter culture and quality of fermented food products. Production and storage of starter culture for food industry. Field trip required.	
01052691	Advanced Research Methods in Food Science	3(2-3-6)
	Advanced research methods in food science, preparation of research proposal, application of computer and information technology for data retrieval and data analysis. Data collection and manuscript preparation for technical presentation and group discussion with academic and food industry, technical report writing for publication in accredited journals in the food science area or for technical report in food industry.	
01052696	Selected Topics in Food Science and Technology	1-3
	Selected topics in food science at the doctoral degree level. Topics are subjected to be changed each semester.	
01052697	Seminar	1
	Presentation and discussion on current interesting topics in food science at doctoral degree level.	
01052698	Special Problems	1-3
	Study and research in food science at the doctoral degree level and compile into a report.	
01052699	Thesis	1-48
	Research at the doctoral degree level and compile into a thesis.	