

## **MASTER OF SCIENCE PROGRAM IN FOOD SCIENCE**

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**Academic Institution:** Department of Food Science and Technology,  
Faculty of Agro-Industry, Kasetsart University

**Duration:**

Two (2) academic years: two semester's system start in June-September, and November-February, with a summer thereafter.

**Eligible Countries:**

Afghanistan, Bangladesh, Djibouti, El Salvador, Eritrea, Fiji, Gambia, Guinea, Indonesia, Iran, Jordan, Kenya, Lesotho, Malawi, Maldives, Marshalls Islands, Micronesia, Nepal, Pakistan, Papua New Guinea, Philippines, Samoa, Solomon Island, Sri Lanka, Sudan, Tanzania, Timor-Leste, Uganda and Vanuatu.

**Objectives:**

To produce Master of Science graduates through state of the art basic or applied research in the area of food science, food safety and related food disciplines.

To enroot international food scientists with perspectives and abilities in research capacity which promote academic advancement and problem based-solving in food science and food industry.

To contribute internationally-valued research projects and to distribute knowledge to industries and other interested parties.

**Course Synopsis & Methodology:**

Food science and technology study at Kasetsart University has been in place since 1964 as the first program in Thailand and is considered one of the best food science programs in South East Asia. Internationally recognized, the department takes pride in the rigorous scientific curriculum. Master's degree graduates with in-depth basic and practical food science knowledge are trained to serve their own societies and countries.

Food science and technology graduates are major driven forces that contribute to the success of Thai food industry. Range of knowledge and researches cover all aspects of food science and technology, e.g., food chemistry, food safety, food process and product innovation. Advance in food research study is enhanced by close link to food industry, both local and international company, and through extensive research collaborative network. Research exchange with most prominent food science institution and University in Europe, USA and Canada and Asia is available with special arrangement between professors involved. Talented international students are our priority for student selection.

**Master of Science Program:** There are 2 programs available;

Program A1 focuses on research capacity building with a minimum of 36 credits research thesis. Two seminars and 1 research publication in a recognized scientific journal is required.

Program A2 involves student with 24 credits courseworks plus a minimum of 12 credits research thesis. In addition to seminars and research publication, a grade point average (GPA) of B (3.0 out of 4.0 score) is required for graduation according to Kasetsart graduate school requirement.

**Course Content / Study Topic:**

Selected courseworks will be offered during a semester. Examples are: Advanced food science, Advanced food processing, Colloidal systems in foods, Hygienic problems of foods, Carbohydrate in foods, Chemistry of food flavor and analysis, The application of physical chemistry to food science, Lipid in foods, Protein in foods, Enzyme in foods, Food additives, Food Toxicology, Nutrition in Food Science.

Thesis research topics are in the area of industrial needs and academic advancement such as:

Food safety: novel sanitizers, microbial stress-response, cell-to-cell communication, biosensors and rapid method, food risk assessment, food mycotoxins, food safety and additives.

Food colloids and biopolymers: fabrication of food structure from biopolymer (mainly protein, polysaccharides and starches) with desirable characteristics at micro- and nano-length scales from the approaches of physico-chemistry and food physics.

Phytochemistry and functional foods: extraction, purification and modification of functional and health benefit compounds from local plants, with an emphasis on polyphenolics, terpenoids, flavonoids and phytosterols.

Food flavor: aroma active compounds in Thai and Asian ethnic foods and ingredients, food interactions and processing factors affecting the flavor of traditional Thai food products.

Food process engineering and simulation: food process optimization, modeling and simulation, design of food processes and equipments.

Controlled-release delivery systems for bioactive compounds: antioxidants, anticancers and immunopromoters to be micro- or nano-encapsulated, the understanding of the self-assembling process of biomolecules and the interactions between core and encapsulating materials.

Rice and rice products: modified starch, starch-protein/lipid interactions, functional properties of rice bran protein, L-amino butyric acid, oryzanol, application in value-added starch and rice-based products.

Other research area includes: alternative ingredients and additives for food industry, freshness preservation of food products, food chemical toxicology, drying technology, physico-chemical properties and processing of confectionery products, frozen food process and product development, utilization and value-added of food industry by-product, postharvest technology.

#### **Qualifications:**

As required by the rules and regulations of the Graduate School of Kasetsart University, which is Bachelor of Science degree in food science and technology or equivalent of B.S. in related fields, i.e., biotechnology, nutrition, pharmaceutical.

Competency in English communication and writing is required for application. English proficiency proof is required for graduation according to Kasetsart University graduate school. Current requirement is IELTS score not less than 5.0, or TOEFL (Paper-based Test: Section 2 and 3, score not less than 45 for each section, and Total score not less than 450) (Computer-based Test: Section 2 score not less than 14, section 3 score not less than 13, and Total score not less than 133), (Internet-based Test: Total score not less than 45). Alternatively, students must take and pass the English course arranged by Kasetsart University graduate school.

#### **Documents Required:**

- Three (3) copies of the TICA Application Form, each affixed with photographs.
- Curriculum vitae
- Official transcript of records
- A concept proposal (3 – 4 pages A4)
- Proof of English proficiency or reference of English proficiency from an academic institution
- Two (2) letters of recommendation

#### **Closing Date For Nomination:**

November 30, 2013

Late or incomplete applications / documents will not be considered.

#### **Contact:**

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