

Course Title
Master of Science Program in Food Technology

Master Degree: Master of Science Program in Food Technology

Academic Institution: School of Agro-Industry, Mae Fah Luang University, Chiang Rai

Duration: Two (2) academic years; 1st semester: August - December
2nd semester: January – May

Objective:

The Master's program in Food Technology is aimed at students who want to learn more about agricultural and food products and who want to collaborate in the future social innovation. The program covers the design and production of foods with safe, health and trends. This program is research-oriented and focuses on the interface between complex food matrixes and technical processes in the development and production of value-added agricultural, food and nutritional products. In this program, students acquire expertise in the advanced knowledge of food matrixes and technical processes of foods to develop processing techniques and/or appropriate formulas combined with a thorough understanding agricultural and food products with safe, health and trend issues. The creation of innovative products and technologies, followed by transferring the results of research, according to consumers or user's need are the importantly key aspects of this program.

Course Synopsis and Methodology:

The Master's program in Food Technology (2017-2021), focuses on the interface between complex food matrixes and technical processes in the development and production of value-added agricultural, food and nutritional products. All course are designed to provide advanced knowledge of complex matrixes and manufacturing processes for creation and investigation of properties and compositions to optimize quality in the development and production of value-added agricultural, food and nutritional products. Courses feature both theoretical and practical learning. The core courses include Advanced Statistics and Experimental Design, Research Methodology and Seminar 1-2. Students can choose their own elective courses that meet student's personal interests in 5 areas, including

- (1) Food Chemistry and Food Analysis,
- (2) Food Safety and Food Microbiology,
- (3) Food Biotechnology,
- (4) Food Processing and Food Engineering and
- (5) Food Product Development and Food Innovation.

Recommended course based on the program objectives include Advanced Food Chemistry and Food Analysis, Nutraceutical and Functional Food, Advanced Food Processing, Quality Control and Design, Food Innovation and Product Design, Experimental Design in Innovative Product Development, Sensory Evaluation, Advanced Food Microbiology and Food Safety and so on. This program is research-oriented and requires research Master's thesis to demonstrate student's ability to conduct independent scientific work in a field of Food Technology. A student usually works together with an advisor to develop course goals and requirements.

The instructional methods are implemented using Outcome Based Education (OBE) as a tool to stimulate the active learning environment. Students are engaged in class activities in order to construct and develop their knowledge, communication, and skills. Various techniques, such as lectures, practical, seminars, intensive tutorials, individually supervised project, brainstorming, role playing, mind mapping, collaborative or cooperative learning, problem-based learning and case-study learning are used for appropriate learning objectives, providing a clear way to deliver the course schedule and engage students in class. Various assessment methods is used via Outcome Based Assessment (OBA) based on class activities and designed courses. After completing the program, students will gain advanced knowledge, communication, and success skills which allow them to become efficient researchers in national and international universities or institutions, project management, quality assurance, and technical supervision in the Food industry and its related-industries.

Course Content/Study Topic:

The curriculum of Master of Science Program in Food Technology offers 2 study plans, plan A1: Thesis and plan A2: Coursework and Thesis.

Plan A1 Thesis (36 Credits)

The degree requirement includes 36 credits of research-intensive Master's thesis and two seminar courses. Research-intensive Master's thesis allows students to demonstrate ability to

conduct independent scientific work under the supervision and approval of the thesis defense committee. Research topic can be academic in nature, or developed within industry, based on individual interests and/or current research project of lecturers in the Food Technology program. The research can be carried out either in Mae Fah Luang University or our collaborated-partners in abroad.

Plan A2: Coursework (24 Credits) and Thesis (12 Credits)

Program structure includes core courses and elective courses. Core courses emphasize on Advanced Statistics and Experimental Design, Research Methodology and Seminar 1-2. Elective course cover a broad range of subjects intended to broaden the student's knowledge. In the first year of the program, the focus lies on core courses and major elective courses connecting soft matter science approaches with advanced knowledge necessary to understand all aspects of the processing of a complex food matrix. Students can choose elective courses according to individual interests and preferred areas of specialization. Students become familiar with scientific approaches such as advanced concepts in processing methods, instrumental methods, research methods and statistical methods, communication skills and practical skills during seminars, lecture and practical hours. In the second year of the program, knowledge and practical skills acquired in the first year are expanded by conducting research Master's thesis, allowing students to identify, analyze, solve a problem and demonstrate ability to conduct independent scientific work under the supervision and approval of the thesis defense committee. Research topic can be academic in nature, or developed within industry, based on individual interests and/or current research project of lecturers in the Food Technology program. The research can be carried out either in Mae Fah Luang University or abroad.

Research focus areas

Research in the fields of Food Technology at School of Agro-Industry, Mae Fah Luang University focus on characterization, technical/optimized process and development/innovation of valued-added agricultural, food and nutritional products with safe, health and trend issues. The research activities focus on the exploration and investigation of compositions, properties, interaction, and alterations of compounds, nutrients, ingredients, microorganisms or enzymes as well as contaminants in agricultural products, food and nutritional products during processing and storage. The research activities also focus on isolation, extraction and purification of functional ingredients from agricultural products to improve the quality of food products, formulate and develop innovative food products which have additional benefits for specific consumer groups.

Cooperation

In order to further expand and improve successful ongoing research projects as well as to create sustainable synergies, program is engaged in successful and intense cooperation with excellent partners in both national and global academic realm, including; Chiba University, Shinshu University, Japan; Bogor Agricultural University, Indonesia; Universiti Teknologi Mara, Malaysia; Universiti Putra Malaysia, Malaysia; Hohenheim University, Germany; Mendel University in Brno, Czech Republic; and is part of the AIMS programs.

Occupational fields

- Research groups in national and international universities or institutions
- Research and development, project management, quality assurance, and technical supervision in the following industrial sectors:
 - Food industry and its supplying industries
 - Biotech, Pharmaceutical and health care industry
 - Equipment, process, and packaging technology
 - Private and public research institutes
 - Business consulting

Reasons to Choose Food Technology, School of Agro-Industry, Mae Fah Luang University

- Small degree programs with an excellent student-teacher ratio
- Degree programs focused on connecting research and teaching
- Students are encouraged to take part in meetings, conferences, and taskforces that provide unparalleled networking opportunities.
- Modern laboratories and practical course rooms with the newest equipment
- Technical centers with pilot plants for research and education provide the opportunity to design and test new technological devices and processing techniques
- Opportunities to take Double Degree Program and gain Double Master Degree with our partners.
- Opportunities to study aboard in the student-exchange program.

Qualification:

Students with a bachelor's degree in Food Science, Biology, Chemistry, Biochemistry, Nutrition, Biotechnology, Agricultural and related fields with cumulative undergraduate GPA ≥ 2.5 and TOEFL score ≥ 450 are encouraged to join the program. The program admissions committee makes all admission consideration on case-by-case basis.

Document Required:

- Application affixed with photographs
- A copy of transcript from institutions attended;
- Evidence of English proficiency, TOEFL exam or others
- Statement of purpose
- Letters of recommendation from referee
- A copy of passport

Closing Date for Nominations: May, 2017

Late or incomplete applications/documents will not be considered.