

Food Science & Technology

Programmes

- Master of Food Science & Technology
- Master of Food & Nutrition
- M.Sc. in Food Science & Technology
- M.Sc. in Food & Nutrition
- Master of Philosophy (M.Phil.)
- Doctor of Philosophy (Ph.D.)

About the Board of Study

The Board of Study in Food Science & Technology is the Postgraduate arm of the Department of Food Science & Technology of the Faculty of Agriculture, which was in existence since the beginning of the Postgraduate Institute of Agriculture. The Board introduced two degree programmes to accomplish the requirements of the country in the areas of Food Science & Technology and Food and Nutrition. The postgraduate degree programme in Food Science & Technology was first established with the objective of producing manpower capable of handling the technical, advisory, marketing and managerial functions of the food industry and taking up research leading to product development. The courses were designed providing greater opportunities for students to link with the rapidly expanding food industry locally and abroad. In addition to the services of qualified staff in the University, the teaching and research programme was strengthened by the services from eminent personnel in the food industry who were intimately linked with developing, offering and upgrading the said degree programme.

The Food and Nutrition degree programme was introduced as the second degree programme of the Board of Study in 1996 to produce manpower qualified in handling nutrition related issues in the food industry, health sector and the community. The programme was designed as a blend of multidisciplinary subjects to suit the needs of those in the food industry, medical and nursing officials, dietitians, managers, planners and other officials handling food and nutrition programmes. In addition to the science of human nutrition, students receive training in a range of socioeconomic aspects viz. planning and management of food and nutrition programmes, sociology of food and nutrition, economics of nutrition, dietetics and nutritional status assessment in the community, which make them qualified nutritionists who can serve in the food or health sectors, anywhere in the world.

The Board of Study provides necessary facilities for postgraduate students to be engaged in full-time studies, making use of excellent laboratory facilities available in the Department. The programmes have undergone several revisions from time to time to suit the needs of the country's development, and today they stand as popular subject areas in the Postgraduate Institute of Agriculture.

Master of Food Science & Technology

Overview

Food Science & Technology is a rapidly expanding field in Sri Lanka and the food industry is presently the second largest foreign exchange earner, next to the garment industry. Small and medium scale food industries, mostly targeted at the export market, are emerging rapidly and there is a demand for skilled man-

power capable of handling production, quality and safety and managerial functions in the food industry. In addition to above tasks, large scale food industries require personnel capable of engaging in research, new product development and handling food regulatory issues. Some enterprising young students may be interested in starting up their own business. Upon successful completion students will be confident to take up any food-related employment in local food industry/ in a foreign country or start their own business.

Key features

The modern food industry is highly competitive and quality and safety are two key elements in its success. These two aspects are adequately emphasized in this postgraduate curriculum. In addition, emerging fields such as functional foods and nutraceuticals are given due consideration through course work and research. In order to successfully compete in the global market a food scientist/technologist should be well equipped with the up-to-date theoretical knowledge as well as practical skills in the subject area. The postgraduate (Master/M.Phil./ Ph.D.) Food Science & Technology degree programmes have been developed to be of international standard and are conducted by highly qualified staff in the country having national and international experience in both technical and advisory capacities. Furthermore, adequate laboratory facilities are provided for skills development.

No. of Credits: 30

Minimum Programme Duration: 3 semesters

Entry Requirements: Applicants should possess a Bachelor's degree in Agriculture, Food Science or Natural Sciences from a recognized institute of higher education acceptable to the Senate of the University of Peradeniya.

graduate degree programmes (masters/M.Phil./ Ph.D.) prepare students to become well- rounded Food Scientists/Technologists or successful Entrepreneurs. Masters of Food Science & Technology and Master of Food & Nutrition Programmes are offered at PGIA Peradeniya and PGIA Colombo branch.

Code	Title	Credits	Option
First Semester			
FT 5102	Food Physics	2	Compulsory
FT 5103	Biochemistry	3	Compulsory
FT 5104	Food Chemistry	2	Compulsory
FT 5105	Food Microbiology	2	Compulsory
FT 5106	Food Preservation	2	Compulsory
FT 5199	Seminar	1	Compulsory
FT 5107	Science and Technology of Commodity Processing	2	Elective
FT 5111	Food Safety	2	Elective
FT 5112	Food Protection Systems	2	Elective
FT 5114	Nutritional and Health Aspects of Food	2	Elective
FT 5154	Functional Foods and Nutraceuticals	2	Elective
FT 5155	Food Biotechnology	2	Elective
FT 5156	Food Regulations and Quality Management Systems	2	Elective
FT 5157	Beverage Technology	2	Elective
ST 5155	Design & Analysis of Experiments	2	Elective
Second Semester			
FT 5204	Industrial Exposure	1	Compulsory
FT 5222	Food Process Engineering and Unit Operations	2	Compulsory
FT 5223	Food Analysis	3	Compulsory
FT 5224	Sensory Evaluation of Foods	2	Compulsory
FT 5298	Directed Study	5	Compulsory
ST 5204	Nonparametric Statistics	2	Compulsory
FT 5201	Food Plant Layout and Operations	1	Elective
FT 5203	Production and Marketing Operations in Food Manufacturing Organizations	2	Elective
FT 5205	Cereal Chemistry and Bakery Products Technology	3	Elective
FT 5206	Horticultural Products Technology	2	Elective
FT 5207	Meat and Fish Science and Technology	3	Elective
FT 5208	Poultry and Egg Products Technology	2	Elective
FT 5209	Processing of Milk and Milk Products	2	Elective
FT 5210	Processing of Kernel and Nut Products	1	Elective
FT 5211	Spice Processing Technology	1	Elective
FT 5213	Techniques in Research and Scientific Writing	2	Elective
FT 5221	Food Lipids	2	Elective
FT 5226	Consumer-Driven Food Product Development	2	Elective



Master of Food & Nutrition

Overview

It is widely recognized that the improvement of nutrition situation in a country requires a multi-disciplinary approach and that a collective effort by professionals from the health sector, agricultural sector, food industry and social sciences

is needed to achieve this goal. It is imperative that all professionals engaged in uplifting a country's nutritional situation, including medical professionals, should have a sound scientific knowledge and practical skills in all aspects of nutrition. Sri Lanka is beginning to appreciate the role of nutrition in the country's development and the long-term health and prosperity of its nation as evident by the incorporation of nutrition in the portfolio of the Ministry of Health and by several undergraduate and postgraduate degree programmes recently established in the country in this emerging field. The Food and Nutrition postgraduate degree programmes (Masters/M.Phil./Ph.D.) offered by PGIA since 1998 has attracted graduate students from all stakeholders of nutrition (from the food industry, universities, health and agriculture sectors, NGO's) and has been producing nutritionists/dietitians capable of handling nutrition-related problems in the community, food industry and the health sector both private and government of the country.

Key features

The nutritionist/dietitian, whose primary role is preventive rather than curative, should be able to understand the multi-disciplinary nature of the nutrition problem and be prepared to work as a multi-disciplinary team of professionals in solving nutrition problems. The Food and Nutrition postgraduate curriculum in the PGIA is carefully designed as a blend of multi-disciplinary subject areas covering core nutritional science

No. of Credits: 30
Minimum Programme Duration: 3 semesters

Entry Requirements: The applicants should possess a Bachelors degree in Agriculture, Natural Science or an equivalent qualification from a recognized institute of higher education acceptable to the Senate of the University of Peradeniya.

subjects of biochemistry, human nutrition, community nutrition, nutritional and health aspects of food, dietetics, nutrition epidemiology, nutritional assessment, nutritional genomics and social science subjects of food & nutrition economics, sociology of food & nutrition, nutrition advocacy and counselling, planning and management of food and nutrition programmes together with basic food science subjects (principles of food science, food microbiology, food safety, food

analysis, food lipids, functional foods and nutraceuticals) and adequate practical any nutrition related assignment in the community or in food industry. With further practical training in a hospital setting, they could be easily trained as hospital dietitians. Furthermore, the programme is developed and offered by a team of highly qualified academic staff in the discipline including several teachers qualified in the field of human nutrition at Ph.D. level from reputed overseas universities.

Code	Title	Credits	Option
First Semester			
FT 5101	Principles of Food Science	2	Compulsory
FT 5103	Biochemistry	3	Compulsory
FT 5105	Food Microbiology	2	Compulsory
FT 5113	Human Nutrition	3	Compulsory
FT 5114	Nutritional and Health Aspects of Food	2	Compulsory
FT 5199	Seminar	1	Compulsory
FT 5111	Food Safety	2	Elective
FT 5151	Sociology of Food and Nutrition	2	Elective
FT 5152	Sports Nutrition	2	Elective
FT 5153	Nutrition Advocacy and Counselling	2	Elective
FT 5154	Functional Foods and Nutraceuticals	2	Elective
EX 5101	Principles of Communication	2	Elective
ST 5103	Data Analysis Using Statistical Software	3	Elective
ST 5155	Design and Analysis of Experiments	2	Elective
Second Semester			
FT 5198	Directed Study	5	Compulsory
FT 5214	Community Nutrition	2	Compulsory
FT 5215	Assessment of Nutritional Status	2	Compulsory
FT 5216	Planning and Management of Food and Nutrition Programmes	2	Compulsory
FT 5217	Dietetics	2	Elective
FT 5207	Meat and Fish Science and Technology	3	Elective
FT 5209	Processing of Milk and Milk Products	2	Elective
FT 5213	Techniques in Research and Scientific Writing	2	Elective

Note: Course list continued on next page

FT 5218	Nutrition Epidemiology	2	Elective
FT 5221	Food Lipids	2	Elective
FT 5223	Food Analysis	3	Elective
FT 5225	Current Topics in Nutrition	1	Elective
EC 5207	Food and Nutrition Economics	2	Elective

Recent Research

- Colloidal milling as an alternative for homogenization of canned high fat coconut milk, assessment based on physical and microbiological parameters to comply with demeter processing requirements.
- Evaluation of the nutritional value of selected fruits and vegetables grown in Sri Lanka with emphasis on underutilized species and biodiversity.
- Utilization of industrial fruit waste: Extraction, characterization and incorporation of pectin from lime and mango peels for value addition to pasta and ice cream.
- Association between household food security and over nutrition in early adolescence in Colombo City.
- Effectiveness of mother supportive group intervention in childhood nutrition improvement.
- Evaluation and Comparison of the Nutritional Composition of Selected Traditional Cereals, Yams and Pulses Grown in Sri Lanka.
- Composition of antioxidant potential and total phenol content of traditional and improved rice varieties in Sri Lanka.
- Preservation of Ceylon olive with natural preservatives.
- Enzymatic interesterification of sesame and coconut oils to produce nutritionally superior oils and evaluation of their oxidative stability.
- Bioactivities of millet grain phenolic compounds; their bioaccessibility and bioavailability as affected by different food preparation and processing methods.
- Antimicrobial property, antioxidant activity and toxicity level of galangal (*Alpinia galanga*) grown in Sri Lanka and its potential to be used in functional foods.
- Development of Non-Dairy Legume Based Nutritious Drink.



