

AGRICULTURE  
AND FOOD  
ENGINEERING

DEPARTMENT OF FOOD, AGRICULTURE AND BIORESOURCES



AIT

Asian Institute of Technology

School of Environment, Resources  
and Development

Food, Agriculture and Bioresources

FAB



Food



Agriculture



Bioresources

Apply  
Now



## Department of Food, Agriculture and Bioresources

The global food system today is beset by serious challenges and risks. Food demand is on rise due to population growth and changing consumption patterns; hunger and poverty levels remain high and unsustainable practices exacerbate environmental challenges. There is a fundamental need to boost productivity, especially of small to medium holders, increase access to markets, reduce risks, boost rural employment, and provide environmental services. However, management of agriculture, livestock, and aquaculture practices is challenged by accelerating climate change, population growth, urbanization, increased market risk, resource constraints, weak private sector engagement, weak progress on improving nutrition, and raising rural incomes. World food production needs to increase manifold in coming decades despite shrinking resources (land, water, farmers, energy). Similarly, food safety is receiving heightened attention worldwide as the important links between food and health.

### Mission

To produce newer generations for striving the solutions to sustainably feeding the hungry and rapidly changing world addressing the following key issues:

- Meeting the food and nutritional needs of growing urban and rural populations, with changing dietary preferences
- Increasing sustainable production and productivity through balancing the ecosystems
- Enhancing resilience of agricultural production systems to climate change
- Finding sustainable solutions to the increasing competition for natural resources
- Developing new technologies and processes for bioeconomy

# Agribusiness Management

This program caters to the unique needs of agribusiness professionals by equipping them with the knowledge and skills required to excel in globally competitive agro-industries. Our graduates are market-ready to enhance the performance of small, medium, and large-scale enterprises. We also aim at enhancing entrepreneurship among primary producers of agri-food products, processors, and other market intermediaries in the value chain.



## Research Area

- Agri-Food Value Chain Management
- Agro-Industrial Systems Development
- Agricultural Sector and Policy Analysis
- Climate-Smart Agriculture
- Food and Nutrition Security
- Innovations and Entrepreneurship
- Sustainable Agro-Food Systems







# Agricultural Systems and Engineering

**Focusing on** the utilization of technologies and management of biological and agricultural systems and natural resources with specialization in Agricultural Systems and Agriculture Engineering.

## Research Area (Agricultural Systems)

- Crop Water Management
- Crop Tolerance to Soil and Environmental Stresses
- Climate Change Adaptation and Food Security
- Climate-Smart Agriculture
- Sustainable Crop Production
- Conservation Agriculture
- Crop Nutrient/Pest Management

## Research Area (Agricultural Engineering)

- Precision Agriculture
- Cropping System Modeling
- IoT and Drones in Smart Agriculture
- On-Farm Irrigation Water Management
- Agricultural Machinery and Mechanization
- Artificial Intelligence and Big Data in Agriculture
- Remote Sensing and GIS Applications in Agriculture





# Aquaculture and Aquatic Resources Management

**Focusing on** intensive aquaculture systems for sustainable production and enhanced benefits with specialization in Aquatic Resources Ecosystem Management, Sustainable Aquaculture Production, Integrated Coastal Management and Aqua-Business Management.

## Research area

- Cleaner Aquaculture Production Systems
- Aquaculture-Environment Interactions
- Diseases of Aquatic Animals (Pathogen discovery, diagnosis, vaccine development, and alternatives to antibiotics)
- Applied Genetics in Aquaculture
- Digital Technology Applications in Aquaculture
- Innovative Hatchery Techniques
- Sustainable Seafood and Nutrition Security
- Aquaculture Nutrition and Feed Supplements
- Climate-Smart Fisheries and Aquaculture







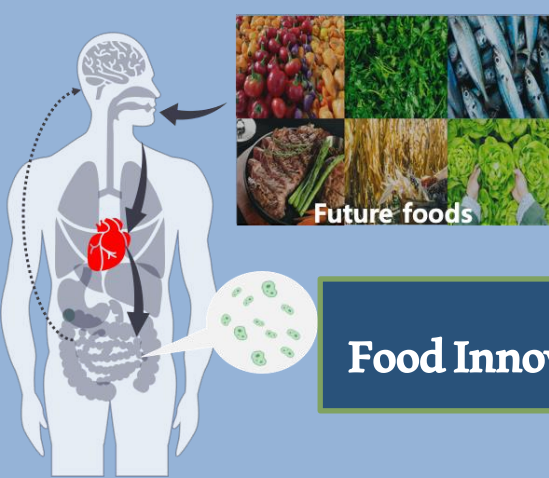
# Food Engineering and Bioprocess Technology

**Focusing on** understanding of food and biological materials, their processing, conversion, and utilization in sustainable, safe, and healthy products, with specialization in Food Process Engineering and Bioprocess Technology.

## Research area

- Novel Food Processing Technologies
- Mathematical Modeling of Foods and Food Processes
- Chemical Sensors and Biosensors for Food Safety Applications
- Postharvest Technology
- Edible Packaging and Bio-Packaging
- Probiotics, Functional Foods, and Nutraceuticals
- Safety, Risk Assessment, and Value-Chain Analysis in Food and Natural Products
- Food and Pharmaceutical Biotechnology
- Nanotechnology in Food and Pharmaceutical Applications
- Delivery and Controlled Release of Bioactive and Live Cells in Food and Nutraceuticals





# Food Innovation, Nutrition and Health

**Focusing on** unique blend that combines food innovation and nutrition with health. This concept helps address the way our consumption of food has changed. The learning in FINH is scientific and application-oriented that challenges traditional concepts of Food Science and gastronomy. The program has been extensively studied and prepared with the support from the European Commission for Higher Education.

## Research area

- Sustainable Food Product Design
- Design Thinking and Innovations in Healthy Food Product Development
- Molecular Nutrition, Food Toxicology, and Health
- Gut Physiology, Metabolic Disease, and Health
- Properties of Food Biomaterials and Nutrients
- Food Safety Standardization
- Risk Management and Traceability Systems
- Processing Effects on Functional Components of Foods
- Consumer Behavior and Diet Preferences



# ELIGIBILITY FOR APPLICATION

- Degree in agricultural science, engineering, aquaculture, biology, life science, social science, fisheries science, and/or other related disciplines
- Degree from an institution of recognized standing

## SCHOLARSHIPS AND FELLOWSHIPS

- HM The King's Scholarship (Doctoral Program)
- HM The Queen's Scholarship
- GMS Scholarship
- ADB-Japan Scholarship
- Thai Pipe Scholarships
- Royal Thai Government Fellowship
- AIT Scholarship, and
- Many other scholarships from private and public sectors

Website: <https://ait.ac.th/financial-aid/>

## CAREER OPPORTUNITIES



Our graduates find placements in several sectors, including industries, government agencies, non-governmental organizations, academia, and entrepreneurship.



# FACULTY MEMBERS

**Prof. Avishek Datta (Ph.D. University of New England, Australia)**

Professor of Agricultural Systems & Engineering, Head of the Department

**Research Area:** Sustainable crop management, Crop water management, Climate-smart agriculture, Climate change adaptation and food security, Crop tolerance to soil and environmental stresses

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**Prof. Anil K. Anal (Ph.D. Asian Institute of Technology, Thailand)**

Professor of Food Engineering and Bioprocess Technology

**Research Area:** Green technology, Smart food processing and packaging, Plant-based proteins and peptides, Delivery of bioactive compounds in human, Antimicrobial resistance and mitigation, Food safety

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**Dr. Krishna R. Salin (Ph.D. Central Institute of Fisheries Education, India)**

Associate Professor of Aquaculture and Aquatic Resources Management

**Research Area:** Cleaner aquaculture systems, Aquaculture-environment interactions, Applied aquaculture for enhanced productivity, Sustainable intensification of shrimp and prawn, Innovative hatchery techniques

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**Dr. Loc Thai Nguyen (Ph.D. Ohio State University, USA)**

Associate Professor of Food Engineering and Bioprocess Technology

**Research Area:** Non-thermal food processing technologies, Mathematical modeling of foods and food processes, Chemical sensors and biosensors for food safety application, Food waste recycling and utilization

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# FACULTY MEMBERS

**Dr. Ram C. Bhujel (Ph.D. Asian Institute of Technology, Thailand)**

Research Associate Professor of Aquaculture and Aquatic Resources Management and Director of Aqua Center

**Research Area:** Aquaculture business management, Aquafeed production and management, Gender in aquaculture/fisheries, Biostatistics, Tilapia farming, Training and capacity development

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**Dr. Farhad Zulficar (Ph.D. Asian Institute of Technology, Thailand)**

Assistant Professor of Agribusiness Management

**Research Area:** Agricultural and value chain sustainability, Agricultural policy analysis, Climate-smart agriculture, Food and nutrition security, Innovation adoption, Water management

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**Dr. Ha Thanh Dong (Ph.D. Chulalongkorn University, Thailand)**

Assistant Professor of Aquaculture and Aquatic Resources Management

**Research Area:** Aquatic animal health, Infectious and emerging infectious diseases, Disease diagnostics, Fish immunology and vaccines

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**Dr. Sushil Kumar Himanshu (Ph.D. Indian Institute of Technology Roorkee, India)**

Assistant Professor of Agricultural Systems & Engineering

**Research Area:** Precision agriculture, Cropping system modeling, IoT and drones in agriculture, On-farm irrigation management, AI and big data in agriculture, Remote sensing and GIS applications in agriculture

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## Information for applicants

### Admissions

<https://ait.ac.th/admissions/>

### Eligibility

<https://ait.ac.th/eligibility/>


### Financial aid

<https://ait.ac.th/financial-aid/>

### Apply online

<https://ait.ac.th/apply-online/>

**Contact:** Head, Department of Food, Agriculture and Bioresources

 (+66-2) 524-5450

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<https://ait.ac.th/department/food-agriculture-and-bioresources/>



