Programme Duration and Class Schedules
Each 12-credit course is an intensive workshop offered over two weeks, consisting about 40 contact hours. Preceded by preparatory study of carefully selected distance-learning material and followed by consolidation and assessment, each course is self-contained and is individually assessed.

Target Students
Students are expected to have basic knowledge in physiology, biochemistry, or molecular biology for understanding the topics covered in the programme. The programme is intended for those with relevant experience in the food, chemical, pharmaceutical, and public health sectors, including but not limited to:

- supervisory positions in the above industries or consultancy;
- environmental, food, and health officers in local/national regulatory authorities;
- officers in diagnostic or analytical laboratories;
- graduates who completed relevant undergraduate degrees, looking for opportunities in the above industries/government agencies.

Assessment
Written work forms an important part of the assessment. All written and verbal communication in English. Most courses are assessed by examination and by coursework, each course is self-contained and is assessed individually. There will be a focus on coursework for the part-time programme.

Application
Application will be considered immediately until April 29, 2020.

Programme details:
https://www.scifac.hku.hk/prospective/tpg/about
Online application:
https://www.scifac.hku.hk/prospective/tpg/about

Enquiries
School of Biological Sciences
The University of Hong Kong
Tel: 2388 0292
Email: biobio@hku.hk

Faculty of Science
The University of Hong Kong
G3, Chong Yuet Ming Physics Building, Pokfulam Road, Hong Kong
Tel: 3917 5267
Tel: 3917 5020
Email: science@hku.hk
https://www.scifac.hku.hk/prospective/tpg/about

Programme Director
Dr Hans E D Nezami
nezzami@hku.hk

Professor C Y Ma
BSc, MSc (HK); MSc, PhD (Br Col)
Professor of Molecular Toxicology
School of Biological Sciences
The University of Hong Kong
Tel: 3917 5236
Fax: 2858 4620
Email: scism@hku.hk

Programme Coordinator
Dr Hani S El-Nezami
Dr Hani S El-Nezami holds an adjunct Professor post at the University of Turku, Finland, and Mar Universitas for Science and Technology, Egypt. Dr El-Nezami is a Senior Scientist of consortium EU countries plus China and Hong Kong funded to the European Union amounting to the modernisation project of the Finnish Society of Toxicology, Eurotox, the Finnish Society of Toxicology, Eurotox, and the American Society of Microbiology. Dr El-Nezami serves as consultants for several firms in Finland and Egypt.

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The composition fee for the full-time programme is HK$70,000 per year for two years. The fee shall be payable in two instalments over one year for full-time study or in four instalments over two years for part-time students. In addition, students are required to pay Caution Fee (HK$140,000 for 2020-21 intake and that for the part-time programme). The fee shall be payable in two instalments over one year for full-time study or in four instalments over two years for part-time students. Application will be considered immediately until April 29, 2020.

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Apply now for entry in September 2020

FACULTY OF SCIENCE
THE UNIVERSITY OF HONG KONG

Admission Requirements
A Bachelor’s degree with Honours in science. Preference will be given to those who possess a Bachelor’s degree in physiology, biochemistry, microbiology, food science, chemistry, biological sciences, clinical laboratory science, environmental sciences, pharmacology or other related disciplines.

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The composition fee for the full-time programme is HK$70,000 per year for two years. The fee shall be payable in two instalments over one year for full-time study or in four instalments over two years for part-time students. In addition, students are required to pay Caution Fee (HK$140,000 for 2020-21 intake and that for the part-time programme). The fee shall be payable in two instalments over one year for full-time study or in four instalments over two years for part-time students. Application will be considered immediately until April 29, 2020.
Course Contents

**FSTX5001 Principles of toxicology (12 credits)**

This module introduces students to the general principles and practice of toxicology. The major focus of the course is on basic principles, mechanisms and common methods underpinning the science of toxicology. Selected target organs systems (e.g. nervous, immune and reproductive) are studied with respect to understanding how representative chemicals damage and impair their ability to function. Students will develop an understanding of how chemicals may exert toxic effects and gain insight into the importance of organ-specific toxicity.

**Assessment:** Course work (25%); Examination (75%)

**FSTX5002 Toxicology tests and hazards evaluation methods (18 credits)**

This module will provide students with the current state-of-the-art methodology employed to investigate the effect of chemical and microbial toxins and environmental pollutants on living systems. Topics include: biological assays, enzyme linked immunosorbent assay (ELISA), classical in vitro tests, microbial cell culture tests, in vivo tests for mutagenicity, genotoxicity and cytotoxicity, for reproductive toxicity, teratogenicity, developmental toxicity and delayed neurotoxicity. Major focus is on the basic principles, understanding each test method including the test rationale, protocol design, limitations and data interpretation. Students will be introduced to the basic concepts of toxicological evaluation and criteria for setting guidance values for dietary and non-dietary exposure to chemicals, with emphasis on food safety perspectives. Determination of exposure in toxicological evaluation is also considered.

**Assessment:** Course work (20%); Examination (80%)

**FSTX5003 Chemical and microbial hazards in food (12 credits)**

This module will introduce students to the chemical and microbial hazards in food and their effects on human health. Special reference is made to heavy metals, pesticides, food additives, persistent organic pollutants and natural food contaminants of current public concern. Emphasis will be placed on developing the understanding of the actual impact of food and waterborne pathogens; their epidemiology and factors contributing to the increase in their incidence. Determination of exposure pathways and linking food hazards to human health is the primary focus. This module will also cover contamination monitoring, quantification of exposure at the individual level, intensive and quantitative exposure to multiple food toxicants, perceptions of risk and integration of laboratory data with population-based studies.

**Assessment:** Course work (25%); Examination (75%)

**FSTX5004 Food safety management (12 credits)**

**Course coordinator:** Dr. Stephanie W Y Ma

Good manufacturing practice has a significant impact on the daily operation of a food processing facility. Quality products and a safe work place environment are components of a good food production system. The course will cover the principles and aspects of the physical design of a food processing facility which include safety and hygiene in the food industry. The emphasis is on the design of production facilities that will provide students with a framework to develop a comprehensive food safety plan. An important goal is to design facilities and equipment that are easy to clean, to maintain and that prevent food contamination. Students will be introduced to food safety and quality management systems, to the basic concepts of food safety and health and food safety regulations. An introduction to the International Codex Alimentarius Commission (CAC), HACCP and ISO22000 will be described. Introduction to local and international food laws will be provided.

**Assessment:** Course work (25%); Examination (75%)

**FSTX5005 Project (12 credits)**

All students are required to undertake their training up to maximum 6 months in one of the following areas:

- Academic institutions, to carry out basic research projects using the most advanced techniques in molecular biology, analytical chemistry and chemical toxicology.
- Food, chemical and pharmaceutical industries, to develop food products or to conduct the industry procedures on ensuring that the emerging newly developed food and chemical products meet regulatory standards and requirements and are safe for consumers, their potential health implications, and regulatory standards and requirements.
- Government agencies, to gain knowledge on the procedures involved in the coordination and formulation of science-based policies, laws and regulations to ensure food safety, health and safety of consumer and use of hazardous chemicals.

The candidate shall make a formal presentation on the topic of his training during the final semester of the teaching programme.

**Assessment:** Project (100%)
Course Contents

**FSTX8001** Principles of toxicology (12 credits)
Coordinator: Dr Hani S El-Nezami

**FSTX8002** Principles of toxicology II (12 credits)
Coordinator: Dr Hani S El-Nezami

**FSTX8003** Toxicology tests and hazards evaluation methods (9 credits)
Coordinator: Dr Stephanie W Y Ma

**FSTX8004** Regulatory toxicology risk assessment, risk management and communication (12 credits)
Coordinator: Dr Stephanie W Y Ma

**FSTX8005** Chemical and microbial hazards in food (9 credits)
Coordinator: Dr Hani S El-Nezami

**FSTX8006** Food safety management (9 credits)
Coordinator: Professor C Y Ma

**FSTX8007** Project (12 credits)
Coordinator: Professor C Y Ma

**FSTX8008** Food safety management (12 credits)
Coordinator: Professor C Y Ma

All students are required to undertake training up to maximum 6 months in one of the following areas:
- Academic institutions, to carry out basic research project using the most advanced techniques in molecular biology, analytical chemistry and biomedical sciences.
- Food, chemical and pharmaceutical industries, to cover industry procedures on ensuring that the emerging/ newly developed food and chemical products meet regulatory standards and requirements and are safe for customers, their potential health implications.
- Government agencies, to gain knowledge on the procedures implemented in the governmental authorities formulating science-based policies, laws and regulations to ensure safety and quality of food and pharmaceutical products.

The candidate shall make a formal presentation on the highlights of their training during the final semester of the teaching programme.
Assessment: Project (100%)
Admission in September 2020

Features:

- Multi-disciplinary programme extending over two years of full-time study or one year of part-time study
- First postgraduate Toxicology programme to be designed to address specific needs on food safety
- Focused on general principles of toxicology, chemical and microbial hazards in food, toxicology, exposure assessment, risk assessment and risk management
- Taught by a teaching team with considerable experience in risk and safety evaluation, exposure assessment and research and consultancy for industry and government
- Internationally renowned visiting lecturers to give lectures on microbial hazards in food, toxicity evaluation, exposure of part-time research and consultancy for industry and government
- Multi-disciplinary programme extending over two years

Course Contents

FSTX7001  Principles of toxicology (12 credits)
Coordinator: Dr. Hani S El-Nezami

This module introduces students to the general principles and practice of toxicology. The course continues to focus on basic principles, mechanisms and common methods underpinning the science of toxicology. Selected target organs systems (e.g., nervous, immune and endocrine systems) are studied with respect to understanding how representative chemicals damage and impair their ability to function. Students will develop fundamental understanding of how chemicals may exert toxic effects and gain insight into the importance of organ-specific toxicity.

Assessment: Course work (25%); Examination (75%)

FSTX7002  Toxicity tests and hazard evaluation methods (9 credits)
Coordinator: Dr. Stephanie W Y Ma

This module will provide students with the current state-of-the-art methodology employed to investigate the effect of chemical and microbial toxins and environmental pollutants on living systems. Topics to include include: histotoxicology, oncotoxicology, reproductive toxicology, teratogenicity, developmental toxicity, genotoxicity, pharmacokinetics, and risk assessment techniques. Evaluation is based on a combination of laboratory practicals and an essay. The assessment will be a 25% coursework based on laboratory practicals and 75% examination.

Assessment: Course work (25%); Examination (75%)

FSTX7003  Chemical and microbial hazards in food (9 credits)
Coordinator: Professor C Y Ma

This module will introduce students to the chemical and microbial hazards in food and their effects on human health. Special reference is made to insecticides, pesticides, food additives, persistent organic pollutants and natural food contaminants of current public concern. Students will be introduced to the different methods employed to investigate the effect of chemical and microbial hazards on living systems. The role of biochemical, metabolic and toxicokinetic studies in toxicological evaluation is also considered.

Assessment: Course work (25%); Examination (75%)

FSTX7006  Food safety management (9 credits)
Coordinator: Dr. Stephanie W Y Ma

This module will introduce students to the chemical and microbial hazards in food and their effects on human health. Special reference is made to insecticides, pesticides, food additives, persistent organic pollutants and natural food contaminants of current public concern. Students will be introduced to the different methods employed to investigate the effect of chemical and microbial hazards on living systems. The role of biochemical, metabolic and toxicokinetic studies in toxicological evaluation is also considered.

Assessment: Course work (25%); Examination (75%)

FSTX7007  Project (12 credits)
Coordinator: Dr. Stephanie W Y Ma

The candidate shall make a formal presentation on the following topics: the role of BC in the development and implementation of a VFA/P using food and farm case studies.

Assessment: Course work (25%); Examination (75%)

Course Structure

First year – Core courses (18 credits)
FSTX7001  Principles of toxicology (12 credits)
FSTX7002  Toxicity tests and hazard evaluation methods (9 credits)
FSTX7003  Chemical and microbial hazards in food (9 credits)
FSTX7004  Regulatory toxicology: risk assessment, risk management and communication (12 credits)
FSTX7005  Hazard identification methods, risk assessment, management and communication (12 credits)
Second year – Core courses (30 credits)
FSTX7005  Hazard identification methods, risk assessment, management and communication (12 credits)
FSTX7006  Food safety management (9 credits)
FSTX7007  Project (12 credits)

Assessment: Course work (25%); Examination (75%)

Full-time one-year study

To complete all the core courses listed above.

Part-time two-years study

First year – Core courses (12 credits)
FSTX7001  Principles of toxicology (12 credits)
FSTX7002  Toxicity tests and hazard evaluation methods (9 credits)
FSTX7003  Chemical and microbial hazards in food (9 credits)
FSTX7007  Project (12 credits)

Assessment: Examnation (100%)

Second year – Core courses (18 credits)
FSTX7005  Hazard identification methods, risk assessment, management and communication (12 credits)
FSTX7006  Food safety management (9 credits)
FSTX7007  Project (12 credits)

Assessment: Course work (25%); Examination (75%)

Full-time one-year study

To complete all the core courses listed above.

Part-time two-years study

First year – Core courses (12 credits)
FSTX7001  Principles of toxicology (12 credits)
FSTX7002  Toxicity tests and hazard evaluation methods (9 credits)
FSTX7003  Chemical and microbial hazards in food (9 credits)
FSTX7007  Project (12 credits)

Assessment: Examnation (100%)

Second year – Core courses (18 credits)
FSTX7005  Hazard identification methods, risk assessment, management and communication (12 credits)
FSTX7006  Food safety management (9 credits)
FSTX7007  Project (12 credits)

Assessment: Course work (25%); Examination (75%)

Established by the School of Biological Sciences in 2009, the MSc in the field of Food Safety and Toxicology programme aims to provide a comprehensive training on a multi-disciplinary field involving general toxicology, food toxicology, regulatory toxicology, and food safety management. The distinctive feature of this toxicology programme is in its focus on food safety perspectives. It emphasises on basic knowledge as well as practical skills in recognition and evaluation of human exposure to potentially hazardous chemicals and pathogens, in our living environment as well as during handling, storage and consumption of foods. Special reference will be made to food safety evaluation and regulation.
**Programme Director and Class Schedules**

Each 9-credit course is an intensive workshop offered over two weeks, consisting of about 40 contact hours. Preceded by preparatory study of carefully selected distance-learning material and followed by consolidation and assessment, each course is self-contained and is individually assessed.

**Target Students**

Students are expected to have basic knowledge in physiology, biochemistry or molecular biology for understanding the topic covered in the programme. The programme is intended for those with relevant experience in the food, chemical, pharmaceutical and public health sectors, including but not limited to:

- supervisory positions in the above industries or consultancies;
- environmental, food and health officers technical officers in local/national regulatory authorities;
- officers in diagnostic or analytical laboratories;
- graduates who completed relevant undergraduate degrees, looking for opportunities in the above industries/government agencies.

**Admission Requirements**

A Bachelor’s degree with Honours in science. Preference will be given to those who possess a Bachelor’s degree in physiology, biochemistry, biotechnology, food science, chemistry, biological sciences, clinical laboratory science, environmental sciences, pharmacology or other related disciplines.

**Application**

Application will be considered immediately until April 20, 2020.

**Programme details**

Programme: [https://asah stripper/lp/t](https://asah stripper/lp/t)

Online application: [https://asah stripper/lp/t](https://asah stripper/lp/t)

**Enquiries**

School of Biological Sciences
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[[https://www.scifac.hku.hk/prospective/tpg/about](https://www.scifac.hku.hk/prospective/tpg/about)]

**Tuition Fees**

The composition fee for the full-time programme is HK$140,000 for 2020-21 intake and that for the part-time programme is HK$70,000 per year for four years. The fee shall be payable in two instalments over one year for full-time study or in four instalments over two years for part-time study. In addition, students are required to pay Caution money HK$500, refundable on graduation subject to no claims being made and Graduation fee HK$500.

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**Overseas Guest Lecturers (2019-2020):**

1. **Professor David Kitts**, University of British Columbia, Canada
2. **Professor Risto Juvonen**, University of Eastern Finland, Finland
3. **Professor Hany S El-Nezami**, Georgia State University, USA
4. **Professor Stephen Forsythe**, University of Nottingham, UK
5. **Professor Hannu Raunio**, University of Eastern Finland, Finland
6. **Professor David Bouwstra**, Wageningen University and Research Centre, the Netherlands
7. **Dr. Peter Chan**, Health Canada, Canada
8. **Professor chicken**, University of Eastern Finland, Finland
9. **Dr. Paul Turner**, University of Maryland, USA
10. **Dr. Peter Salk**, University of Manchester, UK
11. **Professor Hannu Raunio**, University of Eastern Finland, Finland
12. **Professor Hany S El-Nezami**, University of Eastern Finland, Finland
13. **Professor Kenneth Korch**, National Institute of Health, USA
14. **Dr. Chiranjit De**, Geetanjan University, India
Admission Requirements
A Bachelor’s degree with Honours in science. Preference will be given to those who possess a Bachelor’s degree in physiology, biochemistry, biology, scientific, clinical laboratory science, environmental sciences, pharmacology or other related disciplines.

Application
Application will be considered immediately until April 29, 2020.

Programme Coordinator
Dr Hani S El-Nezami

Programme Director
Dr Haiz S E-Nezami and Melissa Benny-MacAdams

Promoting Testing and Certification Services in Food Trade, Committee on Food Safety, and a member of the Panel on Science Programmes.

Dr Hani S El-Nezami
Associate Professor, School of Biological Sciences
Tel: 2299 0835 Email: elnezami@hku.hk

Course Coordinators
Dr Stephanie Y W Ma

Dr Stephanie W Y Ma

Professor C Y Ma

Dr Hani S El-Nezami

BSc, MSc (HK); MSc, PhD (Br Col)

Lecturer, School of Biological Sciences

Associate Professor, School of Biological Sciences

BSc, MSc(HK); PhD (Br Col)

Lecturer, School of Biological Sciences

BSc, MAppSc, PhD (RMIT-University, Australia)

Associate Professor, School of Biological Sciences of The University of Hong Kong.

Dr Stephanie W Y Ma

Online application:
https://aal.hku.hk/tpg/

Programme details:
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• supervisory positions in the above industries or consultancy;
• environmental, food and health officials in local/national regulatory authorities;
• officers in diagnostic or analytical laboratories; and
• graduates who completed relevant undergraduate degrees, looking for opportunities in the above industries/government agencies.

Assessment
Written work forms an important part of the programme. All written and verbal communication in English. Most courses are assessed by examination and by coursework. Coursework includes the seminars in which students present their work, followed by consolidation over two weeks, consisting about 40 contact hours.

Tuition Fees
The composition fee for the full-time programme is HK$140,000# for 2020-21 intake and that for the part-time intake will be payable in two instalments over one year for full-time study or in four installments over two years for part-time study. In addition, students are required to pay Caution (HK$1,000) and Graduation Fee (HK$350).

1. Professor David Kitts, University of British Columbia, Canada
2. Professor Risto Juvonen, University of Eastern Finland, Finland
3. Professor Hannu Mykkanen, University of Eastern Finland
4. Professor Hannu Raunio, University of Eastern Finland, Finland
5. Professor Janna Rysä, University of Eastern Finland
6. Professor Wolfgang Kneifel, University of Natural Resources and Life Sciences, Austria
7. Professor David Gooding, University of Wales, UK
8. Professor Stephen Forsythe, Nottingham Trent University, UK
9. Professor Kenneth Korach, National Institute of Health, USA
10. Professor Stephen Forsythe, Nottingham Trent University, UK
11. Professor Hani S El-Nezami, Institute of Environmental Medicine, Karolinska Institute, Sweden
12. Dr. Jenni Korhonen, University of Eastern Finland, Finland
13. Professor Kenneth Korach, National Institute of Health, USA
14. Dr. El-Nezami was awarded the prestigious Academy

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