

Foreign Faculty



Name: Karl R. Matthews

Affiliation: Department of Food Science, Rutgers University,
New Brunswick, NJ, 80901, USA

Email: Matthews@sebs.rutgers.edu

Title: Professor of Food Microbiology; Chair, Department of Food Science

Karl R. Matthews, Ph.D., is a Professor of Food Microbiology in the Department of Food Science at Rutgers, The State University of New Jersey. He serves as Chair of the Department of Food Science. Matthews' research addresses farm-to-fork food safety issues. His research covers elucidating at the molecular level the interaction of human enteric pathogens with plants to developing novel antimicrobials to improve the microbial safety of fresh fruits and vegetables from post-harvest processing to retail practices. He serves as Principle and Co-principle investigator on USDA and foundation grants and commercial funded projects. He is actively engaged in teaching at the undergraduate and graduate level and served as the Food Science undergraduate program director. Matthews has given presentations and lectures throughout the world. He has taught courses on Food Microbiology and Current Issues in Food Safety and Food Law at Shanghai Jiao Tong University, China. He is involved in projects in the Philippines and Thailand to promote development of Food Science programs and microbial food safety. He has received awards recognizing both his teaching and research. He serves on both NIH and USDA panels and on the editorial boards for several journals. He is Associate Editor of Frontiers in Sustainable Food and Agriculture and Editor-in-Chief of the Journal of Food Safety. Matthews is senior-author of Food Microbiology – An Introduction a leading textbook on Food Microbiology, editor of Microbiology of Fresh Produce, and senior-editor of The Produce Contamination Problem – causes and solutions. He has collectively published more than 275 abstracts, peer reviewed papers, and book chapters.

Host Faculty



Dr. Tejpal Dhewa is an Assistant Professor in the Department of Nutrition Biology, Central University of Haryana. He serves as a Coordinator- Food Safety Training and Certification (FoSTaC) Centre, Food Safety and Standards Authority of India (FSSAI), and UGC SWAYAM Coordinator-Central University of Haryana. He is a Course Coordinator of UGC MOOC on Food Microbiology and Food Safety (4 credits). He has a diverse industrial, teaching, and research experience.

He has published 22 papers in various national and international journals in the area of food microbiology and food safety. Besides, 10 book chapters, 01 book, and 05 e-content. He has successfully completed DU innovation project (2013-2015). Recently, Dr. Dhewa granted an ECR project as Principal Investigator by Science and Engineering Research Board, Department of Science and Technology, Govt. of India.

Course Coordinator

Dr. Tejpal Dhewa
Assistant Professor
Department of Nutrition Biology
Central University of Haryana
Mahendergarh-123031
Mob. 8826325454
Email: tejpal@cuah.ac.in

Local Coordinator

Dr. Aditya Saxena
Department of Physics
Central University of Haryana
Mahendergarh – 123031
Haryana, India
E-mail: adityasaxena@cuah.ac.in

How to Participate:

1. Register yourself on GIAN portal of IIT Kharagpur (<http://www.gian.iitkgp.ac.in/>)
2. Choose the course i.e. Food Safety, Food Security and Food Regulations: A primer* by drop down menu
3. Fill the Registration form and pay the course fee by DD/Cheque/RTGS
4. Scan filled Registration form and send to Course Coordinator by E-mail.



Food Safety, Food Security and Food Regulations: A primer

(Course Code: 174040H04)

16th September - 20th September, 2018

(Sponsored by Ministry of Human Resource Development (MHRD)
under the scheme Global Initiative for Academic Network)



Department of Nutrition Biology
Central University of Haryana
Jant-Pali, Mahendergarh, Haryana

Food Safety, Food Security and Food Regulations: A primer

MHRD Scheme on Global Initiative on Academic Network (GIAN)

1.0 Overview

An in-depth presentation of Current Issues in Microbial Food Safety and Food Law/regulations encompassing topics that impact all segments of the food industry and consumers. Food security will be addressed in the context of food safety/Food regulations. The course will cover a range of topics from the safety of supermarket food handling practices to laws regulating organic food production to food export and import to street foods and vendors. The subject material will encompass global issues of microbial food safety and contrast government (Country) food regulations. Cases studies are used to highlight the consequences to human health and food manufacturer when government regulations and industry standards are not followed. This course will:

- Introduce foodborne pathogens of global concern and factors that influence growth and survival. Improve understanding of key issues surrounding microbial food safety
- Compare and contrast government regulations as they apply to the food industry
- Encourage independent critical thinking.
- Introduce active learning exercises and decrease reliance on lectures as the primary medium of information transfer.

2.0 Objectives

The primary objectives of the course are as follows:

- i. Participants will obtain foundational factual knowledge related to application of microbial theory, biotechnology, and preventative systems related to microbial safety of food.
- ii. Enhance understanding of national and international government and industry regulations and concerns related to safe food production.
- iii. Expose participants to fundamental practices linked to food safety that influence food security.

3.0 Teaching Faculty

1. Foreign faculty: Professor Karl R. Matthews, Professor of Food Microbiology, Department of Food Science at Rutgers, The State University of New Jersey
2. Host faculty: Dr Tejpal Dhewa, Central University of Haryana

4.0 Course details

4.1 Duration: September 16, 2018 to September 20, 2018

4.2 Tentative Lecture Schedule

Day 1

Lecture 1: 10:30 - 11:30 AM
Food Regulations and Foodborne illness
Lecture 2: 12:00 - 1:00 PM
Foodborne pathogens of concern: infection vs intoxication
Tutorial 1: 2:30 - 4:30 PM
Problem-solving. Studies designed to address microbial cross-contamination at retail units (including street vendors), commercial processing centers, and on the farm.

Day 2

Lecture 3: 10:30 - 11:30 AM
Foodborne viruses, parasites and prions.

Lecture 4: 12:00 - 1:00 PM
Food spoilage – Causes and solutions

Tutorial 2: 2:30 - 4:30 PM
Learning from outbreaks: Case study—Outbreak of *Listeria monocytogenes* linked to cantaloupe

Day 3:

Lecture 5: 10:30 - 11:30 AM
Food waste and Food sustainability

Lecture 6: 12:00 - 1:00 PM
Antimicrobials and the food industry: Safety, efficacy, cost

Tutorial 3: 2:30 - 4:00 PM
Interactive group activity: Alternatives to use of traditional antimicrobial agents (e.g., photosensitizers, competitive exclusion, bacteriophage) and processes (e.g., high-pressure processing, cold plasma): from pre-harvest to retail.

Day 4

Lecture 7: 10:30 - 11:30 AM
Organic and conventional produced agricultural commodities – Pros and cons, safety. Export/Import

Lecture 8: 12:00 - 1:00 PM
Farm to Table - Microbes and chemicals associated with your foods

Tutorial 4: 2:30 - 4:30 PM
Debate: Unintended Consequences: Critical thinking/problem solving based on: "Agricultural & Food Controversies—What everyone needs to know" (Norwood, Oltenacu, Calvo-Lorenzo, and Lancaster)

Day 5

Lecture 9: 9:00 AM to 10:00 AM
Sustainability meets food safety

Lecture 10: 10:15 AM to 11:15 AM
Shift in Consumer food preferences and microbial food safety

Tutorial 5: 11:30 AM to 1:00 PM
Group activity: "Un-packing" food safety regulations.

Examination: 2:00 - 4:00 PM

5. Who can attend

- Students at all levels (BTech/MSc/MTech/PhD) or faculty from reputed academic institutions and technical institutions
- Scientists, engineers and researchers from food/pharmaceutical industries, and government organizations including R&D laboratories.
- Professional involved in food safety policies, regulatory frameworks and microbiological risk assessment (MRA)

6. Participation fees

- Industry Participants: INR 4000/-
- Faculty/Scientists: INR 2000/-
- Students: INR 1000/- (OBC/UR); INR 500 (SC/ST); INR 0/- (PWD)

The above fee include all instructional materials, computer use for tutorials, and assignments, laboratory equipment usage charges, 24 hrs free internet facility. The participants will be provided accommodation on payment basis.