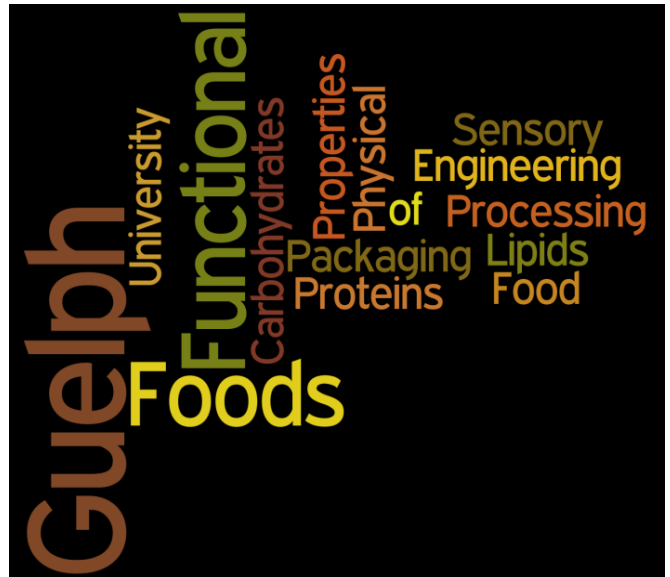


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June 22-26, 2015



Introduction to Food Science

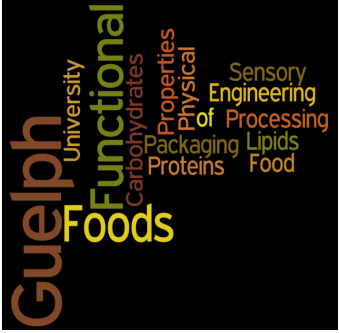
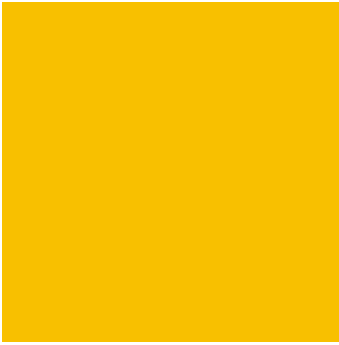
This practical and informative course provides participants with foundational knowledge related to all aspects of food science presented by world-renowned experts. This course is designed for anyone working in the food industry or a peripheral field that wishes to increase their knowledge in Food Chemistry, Food Processing & Engineering, Sensory Science, Food Safety, Food Packaging and Functional Foods & Nutraceuticals.

The course is designed to give you a five-day overview of the most relevant aspects of food science typically covered over our 4-year undergraduate program!

***Ideal preparation course for the
IFT Certified Food Scientist exam!***

UNIVERSITY
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Introduction to Food Science

Learning Objectives

- 1) Garner a basic appreciation in food chemistry focusing on the primary macronutrients: lipids, proteins and carbohydrates.
- 2) Provide a foundational knowledge to complex multi-disciplinary topics ranging from sensory science to food packaging.
- 3) Highlight the interrelationship between food processing, safety and quality.
- 4) Unify the breadth of topics pertaining to food science and health.

Introduction to Food Science

Topics



Physical Properties of Foods: This section covers the fundamentals of the physical chemistry of foods and the underlying principles that govern their stability. Selected topics related to the physical chemistry and physics of the major components in food materials such as lipids, proteins, carbohydrates and water, will be discussed.

Lipid Chemistry: Topics related to the chemistry (physical, organic and analytical) and physics of lipids including emulsions and emulsifiers and fat crystal networks will be outlined. Industrial reactions such as hydrogenation and intersterification and deteriorative oxidative reactions will be covered in detailed.

Protein Chemistry: Utilization of proteins in the food industry is essential for structuring foods in meat, dairy and grain based foods. An overview of the physical properties and chemical reactions germane to food protein chemistry will be provided.

Carbohydrate Chemistry: The chemistry and biochemistry of the major components of foods carbohydrates are introduced in this course. In addition, an overview of some of the reactions and changes in food components, which occur during processing, handling and storage will be presented.

Food Processing & Engineering: Food processes and the relationships between chemistry, microbiology, and engineering as they apply to food processing are discussed. The following topics are included: high and low temperature processes, moisture control and intermediate moisture foods, concentration and dehydration processes, and novel food processing techniques.

Sensory Science: This section is an introduction to sensory science. Students will gain an understanding of the factors contributing to sensory perception of foods. Sensory methodology and statistical tools for evaluation of all sensory aspects of food will be provided and students will gain experience with implementation, statistical analysis and interpretation of sensory data. Consumer sensory testing methods will also be discussed.

Food Safety: Important groups of microorganisms associated with food infections and intoxications are discussed in this course. Intrinsic and extrinsic factors and their relationship to microbial growth, control of microorganisms by food processing and application of Hazard Analysis Critical Control Points (HACCP) programs are also discussed.

Functional Foods: The course examines the relation of functional foods and nutraceuticals (FFN) to food and drugs. The safety and efficacy of individual FFN products, and the regulatory issues that influence the development and commercialization of FFN in global markets are emphasized.

Food Packaging: Functions of packaging in food preservation systems will be examined using a review of current packaging materials, their properties, production methods and applications for specific products. Additional topics include regulatory, environmental and marketplace influences on food packaging choices.



Introduction to Food Science

Agenda

Monday June 22	Tuesday June 23	Wednesday June 24	Thursday June 25	Friday June 26
Physical Chemistry of Foods	Protein Chemistry	Food Processing & Engineering	Food Safety	Food Packaging
Dr. Rogers	Dr. Brock	Dr. Mercer	Dr. Warriner	Dr. Lim
Lunch	Lunch	Lunch	Lunch	Lunch
Lipid Chemistry	Carbohydrate Chemistry	Sensory Science	Functional Foods	Adjourn
Dr. Marangoni	Dr. Ragaei	Dr. Duizer	Dr. Spagnuolo	

Thursday June 25 Optional Dinner

Introduction to Food Science Speakers Biographies



Dr. Michael Rogers is as an Associate Professor and held faculty positions at Rutgers University and the University of Saskatchewan and as the Center Director for the Gastrointestinal Physiology Center at New Jersey's Institute of Food, Nutrition & Health. His research focus is on molecular gels, self-assembly of nano-fibers, nanotechnology focusing on delivery of bioactives and on the biophysics of digestion. He has published 50 referred research articles in journals such as ACS Nano, Langmuir and the Journal of Physical Chemistry. He was awarded the Young Research Scientist award from AOCS in 2015, the Endel Karmas award for teaching Excellence in food science and the Directors award for scientific excellence through IFNH.



Dr. Alejandro G. Marangoni is a professor and Tier I Canada Research Chair Food, Health and Aging at the University of Guelph. His work concentrates on the physical properties of foods, particularly fat crystallization and structure. He has published over 200 refereed research articles, 50 book chapters, 9 books, and 14 patents. He is the recipient of many awards including a Premier's Research Excellence Award, two Distinguished Researcher Awards from the Ontario Innovation Trust (2002), a Career Award from the Canadian Foundation for Innovation, an E.W.R. Steacie Memorial Fellowship – given to the top 6 Canadian scientists from all disciplines - and the T.L. Mounts Award from AOCS in 2004.



Dr. Lisa Duizer completed a BSc in Nutrition and an MSc in Food Science at the University of Guelph. She then went on to complete a PhD in Food Technology from Massey University in New Zealand. Lisa is a sensory scientist and .she uses trained panels to characterize foods and conducts consumer studies to understand liking of their sensory properties. She is a researcher with the Agri-Food for Healthy Aging research group and is focused on studying the sensory properties of foods designed for older adults as well as understanding changes in sensory perception with aging. She has published more than 50 refereed papers and presented numerous presentations on sensory evaluation.



Dr. Keith Warriner received his PhD in Microbial Physiology from the University College of Wales Aberystwyth, UK. During the last fifteen years he has published more than 100 papers, book chapters, patents, and conference abstracts on food safety. His research interests focus on food safety within meat processing and the fresh cut sectors. To this end, his research team has advanced knowledge in the area of emerging pathogens, intervention technologies and development of biosensor devices to detection of foodborne hazards. He is frequently contacted by the media to provide commentary on food safety issues and is the current President of the Ontario Food Protection Association.

Introduction to Food Science

Speakers Biographies



Dr. Jayne Bock is an Adjunct Professor and research associate whose areas of expertise include grain quality, flour functionality, gluten structure and functionality, ingredient interactions, and baking science. Her collaborative work has included investigating the mechanism behind bran interference with gluten secondary structure, and developing new methods to evaluate flour blend functionality for optimal processing performance.



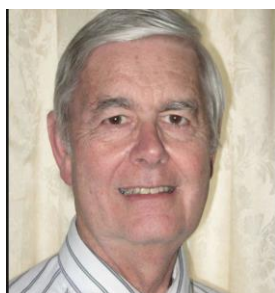
Dr. Loong-Tak Lim is an international leader in biodegradable polymers, edible films and shelf-life studies. He was a member of Husky Mold Injections before joining the Department of Food Science. He has published numerous research articles in a vast array of fields and holds numerous patents in the area of food packaging. He recently co-authored Poly(lactic acid): Synthesis, Structures, Properties, Processing, and Applications (Wiley Series on Polymer Engineering and Technology).



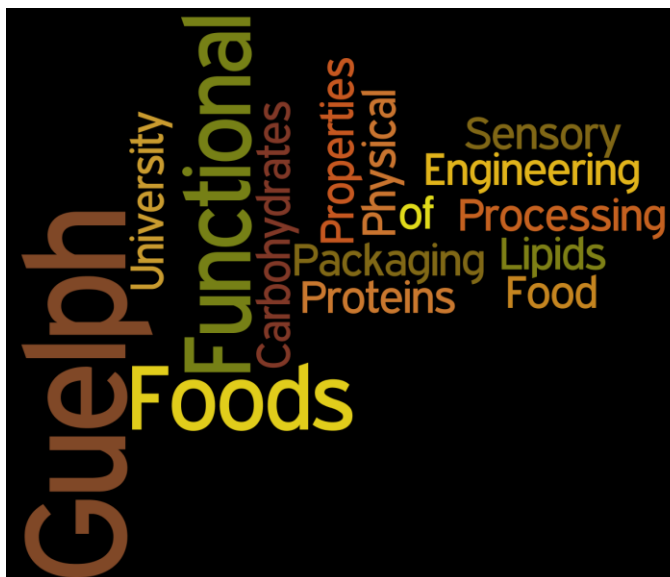
Dr. Sanaa Ragaei is an Adjunct Professor and research associate who has worked with OCIRC since 2008. She is highly skilled in the fields of grain chemistry and biochemistry and has worked on range of projects that include investigating the effects of processing on bioactive components in cereal products, the functionality of different prebiotics on the shelf life and quality of frozen dough, and developing high quality gluten-free products and high fiber functional wheat products.



Dr. Paul Spagnuolo is an Assistant Professor at the School of Pharmacy at the University of Waterloo. He is an expert in the study of the anti-cancer treatment applications of nutraceuticals. He has participated in projects that have resulted in the discovery of 7 novel anti-cancer agents, 3 patents and 1 clinical trial. His research is featured in several high-impact journals such as Cancer Research, Blood and Leukemia. Finally, Paul sits on the Board of Directors for the Natural Health Products Research Society.



Dr. Don Mercer is an Associate Professor in the Department of Food Science at Guelph before which he spent 14 years as a Senior Research Engineer at Kraft General Foods and 10 years at AAFC in Ottawa and Guelph. He acquired his Ph.D in Chemical Engineering at the University of Waterloo and he is a P.Eng. Currently, he is the only faculty in Food Science who is a Fellow of the International Academy of Food Science & Technology.



Introduction to Food Science



Introduction to Food Science June 22-26, 2015

\$1,195 plus HST (13%) for the Introduction to Food Science Course.

Includes tuition, a comprehensive course manual, refreshment breaks and lunches, and a record of achievement.

Registration may be done online at

<http://ennect.com/e2634>

Location

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Guelph, ON, N1G 2W1

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fsevents@uoguelph.ca

www.foodscience.ca

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