

NATS 7016 FOOD PRESERVATION AND PACKAGING TECHNOLOGIES

Credit Points 10

Legacy Code 301180

Coordinator Vijay Jayasena (https://directory.westernsydney.edu.au/search/name/Vijay_Jayasena/)

Description The objective of this subject is to provide students with an understanding of food preservation and food packaging technologies. Contemporary physical and chemical food preservation technologies will be examined, including chilling, freezing, thermal processing, fermentation, dehydration, chemical agents and novel non-thermal techniques. The chemical, physical, functional and nutritional properties of food commodities will also be examined, providing a scientific context for food quality, safety and nutrition. Students will study packaging materials science to be able to select the most appropriate packaging solutions for a range of food applications.

School Science

Discipline Food Science and Biotechnology

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Assumed Knowledge

Bachelor of Science majoring in science; such as biological sciences, chemistry, microbiology, nutrition, medical, forensic, animal science, zoology or pharmacology sciences.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Explain the chemical, physical, functional and nutritional properties of the food commodities and how they determine food quality, safety and nutrition.
2. Apply current and emerging food preservation technologies to protect food quality and safety.
3. Identify integrated behaviour of food systems, chemical interactions between food components, and changes induced as a result of food processing.
4. Analyse spoilage symptoms and identify possible causes of food spoilage in fresh, minimally processed and processed foods.
5. Select and justify suitable packaging solutions for a range of food applications.
6. Critically evaluate literature in a chosen area of interest and design a research proposal, including objectives, justification, research plan, and methodology.
7. Apply principles of food preservation to lab scale production of processed food and evaluate variation in processing parameters or product formulation on product properties.
8. Systematically record experimental data and use statistical methods to summarise and assist interpretation of data.
9. Communicate effectively to a range of scientific and professional audiences via written reports and discussions.

Subject Content

1. Food Commodities (fruits, vegetables, cereals, meat and dairy), composition, production and processing.
2. Food preservation theories relating to chilling, freezing, thermal processing, fermentation, dehydration, and chemical agents.
3. Current and emerging food processing technologies including novel non-thermal techniques.
4. Causes and prevention of food spoilage, shelf life kinetics and food packaging requirements.
5. Food packaging materials and applications.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/Group Task
Quiz	5 x 15 min	10	N	Individual
Log/Workbook	6 practicals	20	N	Individual
Proposal	2,000 words	30	N	Individual
Final Exam	2 hours	40	N	Individual

Prescribed Texts

- Campbell-Platt, G. (2017). Food Science and Technology. 2nd ed, IUFOST, Wiley-Blackwell. U.K.

Teaching Periods

Autumn (2022)

Hawkesbury

Day

Subject Contact Rosalie Durham (https://directory.westernsydney.edu.au/search/name/Rosalie_Durham/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7016_22-AUT_HW_D#subjects)

Autumn (2023)

Hawkesbury

On-site

Subject Contact Rosalie Durham (https://directory.westernsydney.edu.au/search/name/Rosalie_Durham/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS7016_23-AUT_HW_1#subjects)