

MODULE DESCRIPTOR

TITLE	Food Technology
SI MODULE CODE	19-5F10-00L
CREDITS	20
LEVEL	5
JACS CODE	D632
SUBJECT GROUP	Food & Nutrition
DEPARTMENT	Service Sector Management
MODULE LEADER	Einir Williams

MODULE STUDY HOURS (based on 10 hours per credit)*			
Scheduled Learning and Teaching Activities	Placement (if applicable)	Independent Guided Study	Total Number of Study Hours
62		138	200

MODULE AIM

The module aims to enable students to:

- Understand the purpose and principles of a range of food processing unit operations.
- Experience the use of experimental pilot plant.
- Investigate various parameters involved in food processing and preservation with respect to their influence on final product quality and safety.
- Understand the processing steps involved in a range of contemporary and novel manufacturing operations

MODULE LEARNING OUTCOMES

By engaging successfully with this module a student will be able to

- Explain the purpose and principles of selected unit operations used in food processing.
- Apply knowledge of micro-organisms and food chemistry to the principles of food preservation.
- Compare food unit operations with respect to final product quality and safety.
- Select and apply relevant unit operations in the design and construction of flow sheets for contemporary or novel food manufacturing operations.
- Examine processes using numerical calculations, formulae and graphical methods to demonstrate the efficiency or effectiveness of processing operations.
- Operate pilot plant equipment to manufacture food products.
- Organise experiments to investigate the effects of processing conditions on the safety, sensory and non-sensory aspect of food quality
- Analyse data and present results effectively in a scientific report.

INDICATIVE CONTENT

Students will study the principles of food preservation, industrial practice, critical aspects of food safety and quality parameters covering heat sterilisation, pasteurisation, chilling, freezing, drying, preservation using sugar or salt and modified / controlled atmosphere packaging. They will also apply the use of analytical techniques in assessing the safety and quality of food products. The use of relevant statistical techniques for the analysis of sensory data will be included in the module.

LEARNING, TEACHING AND ASSESSMENT - STRATEGY AND METHODS

Students will be supported in their learning, to achieve the above outcomes, in the following ways

The teaching and learning strategy used in this module is designed to promote the knowledge of food unit operations and preservation techniques and the ability to assemble unit operations into a commercial food manufacturing process. The strategy uses a practical environment to help develop a deeper understanding of selected manufacturing processes.

Lectures will be used to develop students understanding of unit operations and food preservation techniques. The use and application of numerical methods to the understanding of manufacturing operations will be developed during lectures.

A series of three laboratory practical exercises will be performed in groups of four or five students. Each laboratory experiment will be completed over a series of three weekly sessions. In the second semester, students work in groups to resolve a practical processing problem in the laboratory and write up their findings as an individually assessed piece of work.

Supported open learning - students are guided to textbooks and journal articles to develop their wider understanding of the subjects taught. Reading is required as preparation for each lecture. The recommended textbook for this module is FELLOWS, P.J (2009). Food Processing Technology: principles and practice. 3rd edn. Cambridge, Woodhead Publishing Limited. There is an electronic copy of an earlier edition of this book available on the library catalogue which can also be used to support learning on this module.

Self-directed learning - students are required to direct their own learning to the assessment on the module. Drop in sessions are available should they be needed.

ASSESSMENT TASK INFORMATION

Task No.*	Short Description of Task	SI Code EX/CW/PR	Task Weighting %	Word Count or Exam Duration**	In-module retrieval available
1	Project portfolio comprising of two sections: (a) Short answer questions on key aspects of one practically taught processing technology (b) Full scientific report on a second practically taught processing technology	CW	50	2500	N
2	Examination	EX	50	2 hours	N

FEEDBACK

Students will receive feedback on their performance in the following ways

Students will receive electronic feedback for the practical project report and receive hard copies of their work for reflection.

LEARNING RESOURCES FOR THIS MODULE (INCLUDING READING LISTS)

Recommended Texts

FELLOWS, P.J (2009). Food Processing Technology: principles and practice. 3rd edn. Cambridge, Woodhead Publishing Limited.

LAWLESS, H. and HILDEGARDE, H (1998). Sensory Evaluation of Foods: principles and practices. Chapman and Hall.

Adams, M. R; Moss, M (2008). Food Microbiology. 3rd edition. Cambridge, Royal Society of Chemistry Publishing.

Supplementary and Alternative Texts

BARHAM, P (2001). The Science of Cooking. Berlin, Springer.

BENDER, D.A and BENDER, A.E (1999). Dictionary of Nutrition and Food Technology. 7th edn. Cambridge, Woodhead.

BRENNAN, J.G (ed.) (2006). Food Processing Handbook. Wiley-VCH.

FOOD STANDARDS AGENCY. (2008). Manual of Nutrition. 11th edn. London, TSO.

FENNEMA, O.R (ed.) (1975), Principles of Food science Part 2: Physical Principles of Food Preservation. Marcel Dekker.

GOULD W.A (1996). Unit Operations for the Food Industries. Baltimore, CTI Publications.

POSTE L.M (1991). Laboratory Methods for Sensory Analysis of Foods. Canada Communications Group Publishing Centre.

SINGH, R.P and HELDMAN, D.R (2001). Introduction to Food Engineering. 3rd edn. London, Academic Press.

ROSENTHAL, A.J (1999). Food Texture: measurement and perception. Aspen Publishers.

SHAPTON, D.A and SHAPTON, N.F (1993). Principles and Practice for the Safe Processing of Foods. Butterworth Heinemann, Woodhead.

Periodicals – The following journals are indicative only – you will find that the library subscribes to a wide range of journals, with many available online.

Food Processing
Trends in Food Science and Technology

Internet sources – the resources included below provide you with an indication of the wealth of information available online relating to service, operations and quality management. As you discover additional useful resources, please email the teaching team and we will continue to develop a valuable resource together.

[Institute of Food Science and Technology. http://www.ifst.org/](http://www.ifst.org/)

[Food Standards Agency http://www.food.gov.uk/](http://www.food.gov.uk/)

SECTION 2 MODULE INFORMATION FOR STAFF ONLY

MODULE DELIVERY AND ASSESSMENT MANAGEMENT INFORMATION

MODULE STATUS - INDICATE IF ANY CHANGES BEING MADE

NEW MODULE	N
EXISTING MODULE - NO CHANGE	N
Title Change	N
Level Change	N
Credit Change	N
Assessment Pattern Change	Y
Change to Delivery Pattern	N
Date the changes (or new module) will be implemented	09/2013

MODULE DELIVERY PATTERN - Give details of the start and end dates for each module. If the course has more than one intake, for example, September and January, please give details of the module start and end dates for each intake.

	Module Begins	Module Ends
Course Intake 1	01/10/2013	26/04/2014
Course Intake 2	DD/MM/YYYY	DD/MM/YYYY
Course Intake 3	DD/MM/YYYY	DD/MM/YYYY

Is timetabled contact time required for this module?	Y
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Are any staff teaching on this module non-SHU employees?	N
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If yes, please give details of the employer institution(s) below

What proportion of the module is taught by these non-SHU staff, expressed as a percentage?	
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MODULE ASSESSMENT INFORMATION

Indicate how the module will be marked	
*Overall PERCENTAGE Mark of 40%	Y
*Overall PASS / FAIL Grade	N

**Choose one only – module cannot include both percentage mark and pass/fail graded tasks*

SUB-TASKS

Will any sub-tasks (activities) be used as part of the assessment strategy for this module?	N
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FINAL TASK

According to the Assessment Information shown in the Module Descriptor, which task will be the LAST TASK to be taken or handed-in? (Give task number as shown in the Assessment Information Grid in Section 1 of the Descriptor)	Task No. 2
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NON-STANDARD ASSESSMENT PATTERNS

MARK 'X' IN BOX IF MODULE ASSESSMENT PATTERN IS NON STANDARD, eg MODEL B, ALL TASKS MUST BE PASSED AT 40%.	
NB: Non-standard assessment patterns are subject to faculty agreement and approval by Registry Services - see guidance. notes.	