

# **MODULE DOCUMENTATION**

## **Food Science & Technology 2**

### **MANF06008**

Mandatory


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<b>Full Title</b>	Food Science and Technology 2		
<b>Status</b>	Uploaded to Banner	<b>Start Term</b>	2016
<b>NFQ Level</b>	06	<b>ECTS Credits</b>	05
<b>Module Code</b>	MANF06008	<b>Duration</b>	Semester - (13 Weeks)
<b>Grading Mode</b>	Numeric	<b>Department</b>	Culinary Arts
<b>Module Author</b>	Francesco Noci		

### Module Description

The module will provide the learners with the basic theoretical knowledge of food commodities and fundamentals of food science, which underpin the processes and operations in the kitchen and in key food manufacturing processes

<b>Learning Outcomes</b>	
	<b><i>On completion of this module the learner will/should be able to:</i></b>
1.	Demonstrate the knowledge of the chemistry and physics of food commodities
2.	Describe the key food processing technologies used in the food and catering sector
3.	Evaluate the effects of food processing and technology on chemistry, flavour and nutritional attributes of foods
4.	Explore the current and future trends in food science and processing technology

### Indicative Syllabus

- Food Commodities  
Chemistry and Physics of  
Muscle foods,  
Marine sources: fish, shellfish, seaweed  
eggs  
milk and dairy products  
fruits, vegetables  
grains, seeds, nuts,  
starches, sugars  
fats and oils
- Food Processing & Technology  
Technologies in meat and fish processing, chilling, freezing, cooking methods, Preservation techniques: pasteurisation, sterilisation, canning, vacuum-packing, curing, smoking, pickling, drying, Fermentation. Production of primary commodities: sugar, chocolate, oil, flour. Foaming, Emulsification, Thickening, Crystallisation, Gelation, Browning, Osmosis
- Effects of food Processing  
Natural retention of nutrients in food, effect of current and future trends in processing and technology on food chemistry, flavour and nutritional value
- Trends in Food Science, Technology & Cooking  
Elements of Molecular gastronomy, raw food, slow-cooking, sous-vide,

### Teaching and Learning Strategy

A combination of lectures and practical sessions

**Assessment Strategy**

A combination of demonstrating the practical ability through a project, in class tests and an end of semester exam

**Repeat Assessment Strategies**

Repeat exam

<b>Indicative Coursework and Continuous Assessment:</b>		<b>40 %</b>		
<b>Form</b>	<b>Title</b>	<b>Percent</b>	<b>Week (Indicative)</b>	<b>Learning Outcomes</b>
Project	project	20 %	OnGoing	2,3,4
Assessment	Test	20 %	Week 12	1,2,3,4

<b>End of Semester / Year Formal Exam:</b>		<b>60 %</b>		
<b>Form</b>	<b>Title</b>	<b>Percent</b>	<b>Week (Indicative)</b>	<b>Learning Outcomes</b>
Closed Book Exam	exam	60 %	End of Semester	1,2,3,4

<b>Full Time Delivery Mode Average Weekly Workload:</b>			<b>3.00 Hours</b>		
<b>Type</b>	<b>Description</b>	<b>Location</b>	<b>Hours</b>	<b>Frequency</b>	<b>Weekly Avg</b>
Lecture	lecture	Lecture Theatre	1	Weekly	1.00
Practical	Laboratory Practical	Laboratory	2	Weekly	2.00

**Literary Resources**

- Harold McGee; illustrations by Patricia Dorfman, Justin Greene, and Ann McGee 2004, *McGee on food & cooking*, Hodder & Stoughton London [ISBN: 0340831499]
- Herve This 2005, *Exploring the Science of Flavour*, Columbia university Press [ISBN: 0231133128]
- P.J. Fellows, 2009, *Food Processing Technology* [ISBN: 1845692160]
- 2002, *McCance and Widdowson's the composition of foods*, Royal Society of Chemistry Cambridge [ISBN: 0854044280]
- Herve This 2006, *Molecular gastronomy*, Columbia University Press New York [ISBN: 0231133138]
- Harold McGee, 2010, *Keys to Good Cooking. by Harold McGee*[ISBN: 0340963204]
- Peter Barham 2000, *The science of cooking* [ISBN: 3540674667]
- Karen Eich Drummond, Lisa M. Brefere 2010, *Nutrition for foodservice and culinary professionals*, Wiley Hoboken, N.J. [ISBN: 0470052422]
- R.K. Proudlove, 2009, *The Science and Technology of Foods* [ISBN: 1899527087]
- Nathan Myhrvold, Chris Young, Maxime Bilet, 2011, *Modernist Cuisine* [ISBN: 0982761007]
- Thomas Keller, 2008, *Under Pressure* [ISBN: 1579653510]
- Heston Blumenthal, 2011, *Heston Blumenthal at Home* [ISBN: 1408804409]
- James G. Brennan (Editor), Alistair S. Grandison (Editor) 2011, *Food Processing Handbook* [ISBN: 3527324682]
- McWilliams, M., *Foods: Experimental Perspectives*, US Imports & PHIPES, 4th Edition: 2001
- Weaver, C. M., *Food Chemistry Laboratory: A Manual for Experimental Foods, Dietetics and Food Scientists*, CRC Press: 1996
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**Programme Membership**

GA\_OCULG\_B07 201500 Bachelor of Business in Culinary Arts  
 GA\_OFIEG\_H08 201800 Bachelor of Business (Honours) in Food Innovation and Enterprise  
 GA\_OFIEG\_B07 201800 Bachelor of Business in Food Innovation and Enterprise  
 GA\_SPHNG\_B07 201900 Bachelor of Science in Public Health Nutrition (Exit)  
 GA\_SPHNG\_C06 201900 Higher Certificate in Science in Nutrition (Exit)  
 GA\_SPHNG\_H08 202000 Bachelor of Science (Honours) in Public Health Nutrition  
 GA\_OCGSG\_B07 202000 Bachelor of Arts in Culinary and Gastronomic Sciences  
 GA\_OCGSG\_H08 202000 Bachelor of Arts (Honours) in Culinary and Gastronomic Sciences  
 GA\_OCGSG\_C06 202000 Higher Certificate in Arts in Culinary Arts (Exit)