MODULE DESCRIPTOR

Module Title

Food Analysis, Authenticity & Safety

Reference	ASM020	Version	2
Created	August 2021	SCQF Level	SCQF 11
Approved	February 2018	SCQF Points	30
Amended	August 2021	ECTS Points	15

Aims of Module

To enable the students to critically evaluate the principles, applications and limitations of instrumental analysis in Food, Authenticity and Food Safety and to select and implement a range of appropriate analytical techniques to solve a given analytical problem.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Critically assess the principles of food safety and justify the principles of their evaluation, regulation and analysis. e.g. food-borne pathogens, mycotoxins, microbial and bacterial toxins in foodstuffs and their resulting implication on populations and animals.
2	Critically discuss and appraise the occurrence of food/beverage crime.
3	Communicate to a professional standard, the findings of a group problem through PowerPoint and oral presentation. The presentation will critically review the results and conclusions from an analytical project involving food/beverage.

Indicative Module Content

Implications of toxins in food and animal feed. Evaluation and regulation of food and drink; Food-borne pathogens in animals and plants; bacteria and mycotoxins; nitrates, nitrites and N-nitroso-compounds; Polycyclic aromatic hydrocarbons; pesticides, herbicides and fungicides; Food additives; Dioxins; Polychlorinated biphenyls; Health and Safety issues; relevant legislation. Analysis of lipids, carbohydrates, proteins, minerals and vitamins. Food crime including counterfeit products and profiling of distilled alcoholic beverages. Solution of an analytical problem appropriate to Food (or beverage) Analysis, Authenticity & Safety requiring a combination of Laboratory techniques.

Module Delivery

Full-time - The module is delivered by formal lectures with some external speakers, and 5 days of laboratory work. Part-time - Must attend the laboratory analytical problem solving exercise and attend formal lectures or work through learning material on Moodle.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	70	35
Non-Contact Hours	230	265
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	300
Actual Placement hours for professional, statutory or regulatory body		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Practical Exam	Weighting:	50%	Outcomes Assessed:	3

Description: Demonstrate competent laboratory planning and analysis of an abused or common food toxin or contaminant and individual performance in a PowerPoint and oral presentation.

Component 2

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	1, 2

Description: Critical review and assessment of analytical techniques for the analysis of a given food / beverage toxin or to a food/beverage sample thought to be counterfeit. Consideration of pertinent regulations and legislation will be emphasised.

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The first grade represents Component 1 (PE1) equally weighted with the second, Component 2 (CW2). A minimum of Module Grade D is required to pass the module, with compensation of grade E in Component 1 or Component 2 permitted. Non-submission of either component will result in an NS grade.

Module Grade	Minimum Requirements to achieve Module Grade:
A	AA, AB, BA
B	AC, AD, BB, BC, CA, CB, DA
C	AE, BD, BE, CC, CD, DB, DC, EA, EB
D	CE, DD, DE, EC, ED
E	AF, BF, CF, DF, EE, EF, FA, FB, FC, FD, FE
F	FF
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1 NEILSON, S.S.S. Food Analysis. Current Edition. New York: Springer.

2 PICO, Y. 2012. Chemical Analysis of Food, Techniques and Applications. Academic Press. Elsevier. E-book

3 PICO, Y. 2007. Food Toxicants Analytical Techniques, Strategies and Developments. Elsevier

4 NOLLET, L and TOLDRA, F. Handbook of Food Analysis, Vol 1 and 2. Current Edition. CRC Press. E-book

5 PRITCHARD, F.E., 2007. Quality assurance in Analytical Chemistry Laboratory. New York: Wiley.

6 SKOOG, W. CROUCH, S. WEST, D and HOLLER, F. Skoog and West. Fundamentals of Analytical Chemistry. Current Edition. Cengage Learning