Course Outline (Higher Education)

School: School of Science, Psychology and Sport

Course Title: FUNDAMENTALS IN FOOD SCIENCE

Course ID: SCFSS1100

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): Nil

ASCED: 019905

Description of the Course:

This course introduces students to fundamental principles in food science required to produce safe and stable food products. Students will learn about food safety and food spoilage, and how spoilage can be controlled. Students will learn about the diversity and growth of microorganisms and learn how to cultivate and identify them in the laboratory. Knowledge will be extended to food manufacturing environments and the concepts of sanitation and hygiene will be introduced. Lastly, students will learn about sensory characteristics of food and how these can be assessed.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory			✔			
Intermediate						
Advanced						

Learning Outcomes:

Knowledge:

K1. Explain the physiological characteristics of microbial cells, their diversity and growth characteristics
K2. Outline the processes (chemical and physical) used in the control of microbial growth in food products
K3. Describe the microorganisms responsible for food poisoning and spoilage
K4. Apply methods of cultivation and identification of microorganisms relevant to the food industry
K5. Recognise the importance of hygiene and sanitation in food production environments
K6. Outline health and safety requirements in the workplace environment, and quality assurance procedures commonly used in food testing laboratories
K7. Explain the anatomy, physiology and functions of taste and smell to determine sample appearance, texture, aroma and flavour
K8. Discuss the principles of sensory analysis and consumer research methods

Skills:

S1. Demonstrate standard microbiological methods for cultivation, identification and enumeration of microorganisms relevant to the food industry
S2. Set up and perform sensory analysis tests
S3. Record and analyse experimental data, and infer appropriate conclusions and recommendations

Application of knowledge and skills:

A1. Apply theoretical knowledge of microbiology and food testing to practical environments including the food production facilities and laboratories
A2. Apply knowledge of food preservation to prevent spoilage of foods
A3. Apply sensory testing to products and raw materials to learn consumer insights and preferences

Course Content:

Topics may include:

- Microbial cell physiology and growth.
- Types of microorganisms and their roles in food poisioning and spoilage.
- Methods used to culture, identify and enumerate microorganisms.
- Physical and chemical methods of controlling microbial growth.
- Shelf life studies.
- Principles of sensory analysis.

Values:

V1. Recognise the important role that microbiological testing of food plays in ensuring a safe food supply

Graduate Attributes

The Federation University Federation graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program

progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1 - K8, S3	AT1, AT2, AT3
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	Not applicable	Not applicable
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	Not applicable	Not applicable
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	K3, K4, K8, S3, A1, A3	AT2, AT3
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	Not applicable	Not applicable

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1 - K8	Demonstrate knowledge, skills, and their application to food science	Online quizzes	15 - 30%
K7, K8, S2, S3, A3	Conduct sensory analysis and compile results	Written report	30 - 50%
K1 - K5, S1, S3, A1, A2	Interpretation of microbiological test data and creation of a lab report	Written report	30 - 50%

Adopted Reference Style:

Australian Harvard

Refer to the library website for more information

Fed Cite - referencing tool