



Year 11 – General Food Science and Technology

This course is developed using the WA Curriculum as a guide. The order of the content and the time in which they are covered are only a guide. Circumstances may result in changes during the year. Kambalda West District High School reserves the right to alter the order the objectives are taught and time over which they are taught.

The Food Science and Technology General course provides opportunities for students to explore and develop food-related interests and skills. Students organise, implement and manage production processes in a range of food environments and understand systems that regulate food availability, safety and quality. Knowledge of the sensory, physical, chemical and functional properties of food is applied in practical situations. Students investigate the food supply chain and value-adding techniques applied to food to meet consumer and producer requirements. Principles of dietary planning, adapting recipes, and processing techniques, are considered for specific nutritional needs of demographic groups. Occupational safety and health requirements, safe food handling practices, and a variety of processing techniques, are implemented to produce safe, quality food products.

Vocabulary & Grammar

Below is a list of science words and phrases that students should know: the meaning of; and be able to spell; by the end of the course:

<ul style="list-style-type: none"> • active packaging • additives • aeration • anaerobic breakdown • aseptic packaging • biotechnology • caramelisation • chemical properties • coagulation • commodity • consumer • cross contamination • crystallisation • demographic group • denaturation • design • brief/specification/task • dextrinisation • emulsification • emerging foods • enzymes • enzymatic activity • environmental factors • ethics • fair trade 	<ul style="list-style-type: none"> • fermentation • food and beverage advertising practices • food allergy • food distribution • food diversity • food handling practices • food hygiene • food intolerance • food miles • food poisoning • food processes • food products • food security food service • food spoilage • food systems • food sustainability • fortification • functional foods • functional properties • gelatinisation • genetically modified foods 	<ul style="list-style-type: none"> • globalisation • Hazard Analysis Critical Control Point (HACCP) system • high pressure processing • innovation • leavening agent • local food • macronutrients • market research • membrane technology • microbial food spoilage • micro-encapsulation • micronutrients • mise-en-place • Modified atmosphere packaging (MAP) • modified foods • nanotechnology • Occupational Safety and Health (OSH) Act • oxidation • pasteurisation 	<ul style="list-style-type: none"> • physical properties • preservation • primary food processing • processing techniques • rancidification • secondary food processing • sensory properties • service • stabilisers • staple foods • sustainability • sustainable food processing and production practices • systems • technology process • ultrafiltration • vacuum packaging • value-adding • waste management • workflow or production plan
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There is an expectation that students will make every effort to correctly use capitals, full stops, commas, semi colons, apostrophes, question marks and exclamation marks.

Topics

The Year 11 syllabus is divided into two units, each of one semester duration, which are typically delivered as a pair. Unit 1 focusses on food choices and health, while Unit 2 focuses on Food for communities. For each unit, the content is organised into the following three topics:

Nature of food

- This topic covers three areas of development:
 - Food as a commodity - Food commodities come from many different sources and can be classified as either animal or plant and raw or processed. The continuous supply of food is achieved through safe and efficient primary and secondary processes that convert raw food into quality food products.
 - Properties of food - Foods are complex mixtures of substances composed of nutrients and chemical compounds. These mixtures, and how they are combined and processed, give foods their sensory and physical properties.
 - Nutrition - Ensuring a balanced diet appropriate to individual needs requires an understanding of food values, the food source, the role of specific macronutrients in the body and the balance required for optimal health. Food selection models, Australian Dietary Guidelines and goal setting are used to achieve nutritional health and evaluate food intake.

Processing food

- This topic encompasses food products and processing systems.
 - The technology process is implemented to develop and create food products, services and systems. Product proposals are used to guide the technology process and evaluate the final outcome.
 - Food production skills include a range of precision cuts, mise-en-place strategies, accurate measurement, selecting and adapting recipes, accurate food orders, production plans, service management and safe operational practices when working with food and equipment.
 - Food handling skills and processing techniques are used to improve physical appearance, palatability, digestibility and the nutritional value of food products.

Food in society

- This topic encompasses two areas of development:
 - Food issues – Beliefs and values that relate to needs, wants, lifestyles, health and living standards underpin food issues of individuals and communities. Factors influencing food choices are often guided by cost, availability, family values, peer group and nutritional needs. Media, advertising and marketing practices also influence food choices, particularly those made by adolescents. These choices impact health, some of which are not desirable.
 - Laws and regulatory codes – These relate to the legal processes which regulate the interaction between consumers and food-related enterprises. They include consumer associations work to influence policy, legislation and practices. Food handling practices, including the prevention of cross contamination, use of clean equipment and safe storage of raw and processed foods are regulated for health and safety of consumers and personnel in the food-related industry is another area of focus. Food labelling and packaging of raw and processed food and beverages in Australia is designed to protect and inform consumers when making food choices is also covered in this area.



COURSE OUTLINE 2022
GENERAL FOOD SCIENCE AND TECHNOLOGY YEAR 11

Semester 1 – UNIT 1

Week	Topics/Syllabus	Assessment	Resources
Term 1			
1	<p>Laws and regulatory codes</p> <ul style="list-style-type: none"> • workplace regulations for safety and health <ul style="list-style-type: none"> ○ protective clothing and footwear ○ personal hygiene ○ emergency procedures • safe food handling practices <ul style="list-style-type: none"> ○ safe storage of raw and processed foods ○ prevention of cross contamination ○ clean equipment • Australian food labelling requirements <ul style="list-style-type: none"> ○ nutrition information panel ○ percentage labelling ○ name and/or description of the food ○ food recall information ○ information for allergy sufferers ○ date marking ○ ingredients list ○ country of origin ○ barcode ○ weights and measures <p>Food products and processing systems</p> <ul style="list-style-type: none"> • produce food products using raw and processed foods <ul style="list-style-type: none"> ○ demonstrate mise-en-place and precision cutting skills 	<p>Task 1: Test – Preparation practices (undertaken in Week 2)</p>	
2-4	<p>Nutrition</p> <ul style="list-style-type: none"> • food sources and functions of nutrients and water in the body <ul style="list-style-type: none"> ○ protein ○ carbohydrates ○ vitamins ○ minerals ○ lipids • importance of a balanced diet and the consumption of a wide variety of foods for health • use of food selection models and guides to evaluate diets <ul style="list-style-type: none"> ○ <i>Healthy Eating Pyramid (Nutrition Australia May 2015)</i> ○ <i>The Australian Guide to Healthy Eating</i> ○ <i>Australian Dietary Guidelines</i> • nutritional requirements of adolescents <ul style="list-style-type: none"> ○ protein ○ calcium ○ iron 		
5	<p>Food as a commodity</p> <ul style="list-style-type: none"> • classification of food <ul style="list-style-type: none"> ○ animal ○ plant ○ raw ○ processed • economic and environmental considerations when purchasing locally produced commodities <ul style="list-style-type: none"> ○ food availability ○ cost ○ 'food miles' ○ packaging 		

	<ul style="list-style-type: none"> ○ waste ● staple food commodities readily available in Australia ● factors that affect the supply of staple food <ul style="list-style-type: none"> ○ food availability ○ cost ○ climate or seasons ○ natural disasters 		
6-8	<p>Properties of food</p> <ul style="list-style-type: none"> ● sensory properties that influence selection and use of raw and processed food <ul style="list-style-type: none"> ○ appearance ○ texture ○ aroma ○ flavour ○ sound ● physical properties that influence selection and use of raw and processed food <ul style="list-style-type: none"> ○ size ○ shape ○ colour ○ volume ○ viscosity ● effects of processing techniques on sensory and physical properties of food <ul style="list-style-type: none"> ○ change in appearance ○ change in texture ○ change in flavour 	Task 3: Food Choices	
9-10	<p>Food products and processing systems</p> <ul style="list-style-type: none"> ● investigate a raw and a processed food product <ul style="list-style-type: none"> ○ use ○ nutrition ○ cost ○ shelf life ● devise food products using raw and processed foods <ul style="list-style-type: none"> ○ interpret recipes ○ adapt recipes to suit a purpose ○ cost recipes ○ organise food orders and production plans ● produce food products using raw and processed foods <ul style="list-style-type: none"> ○ demonstrate teamwork skills, such as communication and collaboration ○ measure ingredients using Australian Standard metric measurement ○ demonstrate various methods of cooking ○ present safe, quality, palatable food ● evaluate food products developed from raw and processed foods <ul style="list-style-type: none"> ○ the effectiveness of skills, practices or processes ○ use of relevant terminology 		
Term 2			
1-2	<p>Food products and processing systems</p> <ul style="list-style-type: none"> ● produce food products using raw and processed foods <ul style="list-style-type: none"> ○ select and safely use appropriate equipment, such as knives and hot surfaces ○ demonstrate mise-en-place and precision cutting skills ○ demonstrate safe food handling practices ● devise food products using raw and processed foods <ul style="list-style-type: none"> ○ adapt recipes to suit a purpose ● evaluate food products developed from raw and processed foods <ul style="list-style-type: none"> ○ sensory properties 	Task 2: Celebrate local foods	
3-4	<p>Food issues</p> <ul style="list-style-type: none"> ● environmental issues that arise from food and lifestyle choices <ul style="list-style-type: none"> ○ food availability 	Task 4: A food advertisement	

	<ul style="list-style-type: none"> ○ 'food miles' ○ packaging ○ recycling and waste ● factors that influence food choices <ul style="list-style-type: none"> ○ cost ○ food availability ○ family characteristics ○ peer group ○ nutritional value ● influences on adolescent food choices <ul style="list-style-type: none"> ○ use of celebrities, media practices, including music, body image, colour, fonts and graphics, and food styling techniques to market food products ○ advertising ○ marketing 		
5-6	<p>Food products and processing systems</p> <ul style="list-style-type: none"> ● investigate staple food products <ul style="list-style-type: none"> ○ use ○ nutrition ○ cost ○ shelf life 		
END OF SEMESTER 1			

Semester 2 – UNIT 2

Week	Topics/Syllabus	Assessment	Resources
Term 2			
7-8	<p>Food as a commodity</p> <ul style="list-style-type: none"> ● staple food commodities readily available in Australia ● factors that affect the supply of staple food <ul style="list-style-type: none"> ○ food availability ○ cost ○ climate or seasons ○ natural disasters ● primary and secondary processes used to convert raw commodities into safe, quality food products 		
9-10	<p>Food products and processing systems</p> <ul style="list-style-type: none"> ● Investigate staple food products <ul style="list-style-type: none"> ○ Use ○ Nutrition ○ Cost ○ Shelf life <p>Properties of food</p> <ul style="list-style-type: none"> ● sensory properties that influence selection and use of staple food <ul style="list-style-type: none"> ○ appearance ○ texture ○ aroma ○ flavour ○ sound ● physical properties that influence selection and use of staple food <ul style="list-style-type: none"> ○ size ○ shape ○ colour ○ volume ○ viscosity 	Task 5: Staple food commodities investigation	
Term 3			
1-2	<p>Properties of food</p> <ul style="list-style-type: none"> ● the effect of processing techniques on the sensory and physical properties of food 		

	<ul style="list-style-type: none"> ○ dry processing techniques <p>Food products and processing systems</p> <ul style="list-style-type: none"> ● produce food products using staple foods <ul style="list-style-type: none"> ○ measure ingredients using Australian Standard metric measurement ○ demonstrate safe food handling practices ○ demonstrate dry processing techniques ● evaluate food products developed from staple foods <ul style="list-style-type: none"> ○ product's sensory properties 		
3-6	<p>Properties of food</p> <ul style="list-style-type: none"> ● the effect of processing techniques on the sensory and physical properties of food <ul style="list-style-type: none"> ○ wet processing techniques <p>Food products and processing systems</p> <ul style="list-style-type: none"> ● produce food products using staple foods <ul style="list-style-type: none"> ○ select and safely use appropriate equipment ○ demonstrate mise-en-place and precision cutting skills ○ demonstrate wet processing techniques ● evaluate food products developed from staple foods <ul style="list-style-type: none"> ○ effective use of skills, practices or processes 	Task 6: The big bake-off	
7	<p>Nutrition</p> <ul style="list-style-type: none"> ● food sources and role of macronutrients and water for health <ul style="list-style-type: none"> ○ protein: complete and incomplete ○ carbohydrates: starches, sugars, and fibre or cellulose ○ lipids: saturated fats and oils, and unsaturated fats and oils ● macronutrient requirements depending on age and lifestyle <ul style="list-style-type: none"> ○ protein ○ carbohydrates ○ lipids 		
8-9	<p>Food issues</p> <ul style="list-style-type: none"> ● health issues that arise from food choices <ul style="list-style-type: none"> ○ malnutrition ○ underweight ○ overweight ○ allergies ○ intolerances <p>Nutrition</p> <ul style="list-style-type: none"> ● nutrition-related health conditions and the need for specialised diets <ul style="list-style-type: none"> ○ coeliac ○ lactose intolerance ● use of the <i>Australian Dietary Guidelines</i> to evaluate food choices <p>Food products and processing systems</p> <ul style="list-style-type: none"> ● devise food products using staple foods <ul style="list-style-type: none"> ○ adapt recipes to suit a purpose 	Task 7: Test Health Issues	
10	<p>Properties of food</p> <ul style="list-style-type: none"> ● the effect of processing techniques on the sensory and physical properties of food <ul style="list-style-type: none"> ○ microwave cooking <p>Food products and processing systems</p> <ul style="list-style-type: none"> ● produce food products using staple foods <ul style="list-style-type: none"> ○ demonstrate microwave cooking ● evaluate food products developed from staple foods <ul style="list-style-type: none"> ○ product's sensory properties 		

Term 4

<p>1-2</p>	<p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products using staple foods <ul style="list-style-type: none"> ○ cost recipes • produce food products using staple foods <ul style="list-style-type: none"> ○ present safe, quality, palatable food • evaluate food products developed from staple foods <ul style="list-style-type: none"> ○ use of relevant terminology <p>Laws and regulatory codes</p> <ul style="list-style-type: none"> • labelling requirements for food and beverage products available in Australia <ul style="list-style-type: none"> ○ nutrition information panel ○ percentage labelling ○ name and/or description of the food ○ food recall information ○ information for allergy sufferers ○ date marking ○ ingredients list ○ country of origin ○ barcode ○ weights and measures 		
<p>3</p>	<p>Food issues</p> <ul style="list-style-type: none"> • ethical influences on food choices, such as animal welfare, fair trade, resource use and country of origin <p>Nutrition</p> <ul style="list-style-type: none"> • reasons for vegetarian or vegan diets <ul style="list-style-type: none"> ○ health ○ ethical values ○ cultural ○ economic cost 		
<p>4-5</p>	<p>Laws and regulatory codes</p> <ul style="list-style-type: none"> • workplace regulations for safety and health <ul style="list-style-type: none"> ○ protective clothing and footwear ○ signage for procedures and hazards ○ safe posture, including lifting, bending and standing ○ emergency procedures • safe food handling practices <ul style="list-style-type: none"> ○ safe storage and thawing of raw and processed foods ○ prevention of cross contamination ○ clean equipment and work surfaces <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products using staple foods <ul style="list-style-type: none"> ○ interpret recipes ○ organise food orders and production plans • produce food products using staple foods <ul style="list-style-type: none"> ○ demonstrate teamwork skills, such as planning and problem solving ○ present safe, quality, palatable food • evaluate food products developed from staple foods <ul style="list-style-type: none"> ○ effective use of skills, practices or processes ○ use of relevant terminology 	<p>Task 8: A healthy food product</p>	

END OF SEMESTER 2



A number of assessments will be used throughout the term to identify the students understanding in the course and be used to determine a grade. Student achievement will be reported using the following descriptors.

Semester 1

Assessment Type SCSA Weighting	Task Description	KWDHS Weighting	Set/Due Date
5%	Task 1: Test – Preparation practices (Response) Workplace regulations for safety and health, safe food handling practices and use of appropriate equipment in day-to-day operations to protect employees and consumers. Application of mise-en-place, precision cutting skills.	5%	Set: Term 1, Week 1 Due: Term 1, Week 2
20%	Task 2: Celebrate local foods (Production) Examine the variety and availability of local foods; the economic and environmental considerations and issues that arise from purchasing locally and lifestyle choices; produce food using local raw and processed foods.	20 %	Set: Term 2, Week 1 Due: Term 2, Week 2
15%	Task 3: Food Choices (Investigation) Investigate factors that influence food choices and recognise that some food choices may compromise good health. Use food selection models to evaluate diets.	15%	Set: Term 1, Week 5 Due: Term 1, Week 8
10%	Task 4: A food advertisement (Production) Food advertisements often influence adolescent food choices. Produce a simple, healthy food product and use a selection of food styling techniques to develop a food advertisement appealing to the adolescent market.	10%	Set: Term 2, Week 3 Due: Term 2, Week 4

Semester 2

Assessment Type SCSA Weighting	Task Description	KWDHS Weighting	Set/Due Date
10%	Task 5: Staple food commodities (Investigation) Investigate the use, nutrition, cost and shelf life of staple food commodities readily available in Australia. Identify factors that affect the supply of staple food, including climate and natural disasters. Consider primary and secondary processes used to convert raw commodities into safe, quality food products.	10%	Set: Term 2, Week 7 Due: Term 2, Week 9
10%	Task 6: The big bake-off (Production) Demonstrate the use of staple food commodities and dry processing techniques to produce food products. Evaluate the effect of processing techniques on the sensory and physical properties of the food.	10%	Set: Term 3, Week 4 Due: Term 3, Week 7
5%	Task 7: Test – Health Issues (Response) Use of the Australian Dietary Guidelines to consider health issues that arise from food choices and the need for specialised diets, including nutrition-related health conditions such as coeliac and lactose intolerance.	5%	Set: Term 3, Week 9 Due: Term, Week 9
20%	Task 8: A healthy food product (Production) Devise and produce a healthy food product using staple foods. Package the product and label as required for food and beverage products in Australia. Evaluate the product using the Australian Dietary Guidelines.	20%	Set: Term 4, Week 1 Due: Term 4, Week 4

It is expected that all assessments will be completed to the best of your ability and be submitted by the deadlines set. Please make yourself aware of the Assessment Policy as failure to meet deadlines has severe consequences.

Grade	Description	The student demonstrates achievement that:
A	Excellent	has greatly exceeded the expected standard. Achievement is well beyond what is expected at this year level.
B	Good	exceeds the expected standard.
C	Satisfactory	at the expected standard.
D	Limited	is below the expected standard.
E	Very Low	is below the minimum acceptable for this year level.

Student Signature: _____

Parent/Guardian Signature: _____