



COURSE OUTLINE
COURSE FOOD SCIENCE AND TECHNOLOGY – GENERAL YEAR 12: 2021
UNIT 3 AND UNIT 4



This course will run the two units, 1 and 2, concurrently. The student Semester 1 grade will therefore be an estimate. **Red = Unit 3 content / Blue = Unit 4 content**

Term	Week	Topic and key teaching points	Syllabus content	Assessment
1	1–3	Nutrition Nature of Food Nutrition Properties of food Processing food Food products and processing systems	Nutrition <ul style="list-style-type: none"> • food sources and role of micronutrients for health <ul style="list-style-type: none"> ▪ fat-soluble vitamins: A and D ▪ water-soluble vitamins: B1 (thiamine), B2 (riboflavin), B3 (niacin) and C ▪ minerals: calcium, iron and sodium • effects of under-consumption of nutrients on health <ul style="list-style-type: none"> ▪ anaemia ▪ osteoporosis ▪ malnutrition ▪ constipation Properties of food <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ oxidation ▪ coagulation ▪ rancidity Food products and processing systems <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ devise food products ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy 	



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4	<p>Nutrition Nature of Food Nutrition Processing food Food products and processing systems</p>	<p>Nutrition</p> <ul style="list-style-type: none"> • effects of under-consumption of nutrients on health <ul style="list-style-type: none"> ▪ anaemia ▪ osteoporosis ▪ malnutrition ▪ constipation <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties • cost of ingredients and energy 		
1	5-7	<p>Devise Food Products Nature of Food Nutrition Processing Food Food Products and Processing Systems</p>	<p>Nutrition</p> <ul style="list-style-type: none"> • effects of over-consumption of nutrients on health <ul style="list-style-type: none"> ▪ obesity ▪ cardiovascular disease ▪ Type 2 diabetes <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ interpret and adapt recipes ▪ devise food orders ▪ devise production plans ▪ apply preparation and processing techniques ▪ cost recipes 	Task 1: Test-Nutrition for Health



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1	8	<p>Food as a commodity Nature of Food Food as a Commodity Properties of food Processing food Food Products and processing systems</p>	<p>Food as a commodity</p> <ul style="list-style-type: none"> • the economic cost of raw and processed food products • the development and use of varieties of food commodities, such as apples and potatoes, to: <ul style="list-style-type: none"> ▪ alter sensory and physical properties ▪ alter nutritional content ▪ improve yield <p>Properties of food</p> <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ dextrinisation <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ devise food products ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy 	Task 3 Meals for Health
1	9	<p>Food in society Food in Society Food Issues Food Processing Food products and processing systems</p>	<p>Food issues</p> <ul style="list-style-type: none"> • societal influences on food choices <ul style="list-style-type: none"> ▪ lifestyle ▪ culture ▪ religion ▪ health promotion campaigns ▪ advertising • economic influences on food choices <ul style="list-style-type: none"> ▪ competition in the marketplace 	



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			<ul style="list-style-type: none"> ▪ product availability ▪ consumer resources <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties • cost of ingredients and energy 	
2	1-3	<p>Food in society Food Issues Laws and regulatory codes Processing food Food products and processing systems</p>	<p>Laws and regulatory codes</p> <ul style="list-style-type: none"> • role of <i>Food Standards Australia New Zealand (FSANZ)</i> • <i>Australia New Zealand Food Standards Code for food labelling requirements</i> <ul style="list-style-type: none"> ▪ nutrition information panel ▪ percentage labelling ▪ name or description of the food ▪ food recall information ▪ information for allergy sufferers ▪ date marking ▪ ingredients list ▪ country of origin ▪ barcode ▪ weights and measures ▪ use and storage information ▪ mandatory warnings and information ▪ genetically modified content ▪ legibility • categories of food exempt from food labelling laws 	Task 5: Heat and Eat Meals



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			<ul style="list-style-type: none">• objectives of <i>Food Act 2008 (WA)</i>• purpose of the <i>Occupational Safety and Health Act 1984</i> <p>Food products and processing systems</p> <ul style="list-style-type: none">• devise food products<ul style="list-style-type: none">▪ devise food products▪ apply preparation and processing techniques• investigate wet processing techniques and dry processing techniques<ul style="list-style-type: none">▪ suitable food commodities▪ effect on nutrition▪ heat transfer▪ sensory properties▪ cost of ingredients and energy• the technology process to produce a food product that demonstrates a wet processing technique and a dry processing technique based on a product proposal<ul style="list-style-type: none">▪ investigate▪ devise▪ produce▪ evaluate <p>Food products and processing systems</p> <ul style="list-style-type: none">• evaluate the food product<ul style="list-style-type: none">▪ product's compliance with the proposal▪ product's sensory properties▪ selection of processing techniques▪ selection of equipment and resources▪ time requirements	
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2	4	<p>Nature of Food Properties of food</p> <p>Processing food Food Products and processing systems</p>	<p>EST Revision</p> <p>Properties of food</p> <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ denaturation <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy 	
2	5-6	<p>Nature of Food Food as a commodity Properties of food Nutrition</p> <p>Processing food Food products and processing systems</p> <p>Food in society Food Issues Laws and regulatory codes</p>	<p>Nutrition</p> <ul style="list-style-type: none"> • effects of under-consumption of nutrients on health <ul style="list-style-type: none"> ▪ anaemia ▪ osteoporosis <p>Properties of food</p> <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ oxidation <p>Food as a commodity</p> <ul style="list-style-type: none"> • the development and use of varieties of food commodities, such as apples and potatoes, to: <ul style="list-style-type: none"> ▪ alter nutritional content • evaluate the food product <ul style="list-style-type: none"> ▪ product's compliance with the proposal ▪ product's sensory properties ▪ selection of processing techniques <p>Food issues</p>	Task 4: Externally Set Task



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			<ul style="list-style-type: none"> • economic influences on food choices <ul style="list-style-type: none"> ▪ consumer resources <p>Laws and regulatory codes</p> <ul style="list-style-type: none"> • role of <i>Food Standards Australia New Zealand (FSANZ)</i> • <i>Australia New Zealand Food Standards Code</i> for food labelling requirements <ul style="list-style-type: none"> ▪ food recall information ▪ country of origin • objectives of <i>Food Act 2008 (WA)</i> 	
2	7	<p>Properties of Food Food as a commodity Nature of Food Properties of Food Processing systems Food products and processing systems</p> <p>Nature of food Food as a commodity</p>	<p>Properties of food</p> <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ caramelisation ▪ emulsification ▪ dextrinization ▪ coagulation <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties • cost of ingredients and energy <p>Food as a commodity</p> <ul style="list-style-type: none"> • the food supply chain 	



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			<ul style="list-style-type: none"> ▪ production ▪ processing ▪ packaging ▪ storage ▪ distribution of food commodities • the concept of value-adding to food <ul style="list-style-type: none"> ▪ changes to nutritional content ▪ additional processing of food ▪ presentation and service ▪ packaging 	
2	8-9	Dietary Planning Properties of Food Nature of Food Properties of Food Food Processing Food products and processing systems Nature of food Nutrition	Properties of food <ul style="list-style-type: none"> ▪ functional properties that determine the performance of food ▪ gelatinisation Food products and processing systems <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques ▪ interpret and adapt recipes • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties • cost of ingredients and energy Nutrition <ul style="list-style-type: none"> ▪ dietary planning ▪ <i>Healthy Eating Pyramid (Nutrition Australia May 2015)</i> ▪ <i>Australian Guide to Healthy Eating</i> ▪ <i>Australian Dietary Guidelines</i> 	



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			<ul style="list-style-type: none"> ▪ the nutritional needs of demographic groups, such as adolescents and adults ▪ modification and fortification of foods by altering nutrient content ▪ influences on the nutritional wellbeing of individuals ▪ lifestyle ▪ cultural traditions 	
2	10	Processing Techniques Processing Food Food Products and Processing systems Nature of Food Properties of Food	Food products and processing systems <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy Properties of food <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ leavening 	Task 6: Dietary planning
2	11	Preserving food Nature of food Properties of food Processing food Food products and processing systems Nature of food Properties of food Processing food Food products and processing systems	Properties of food <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ aeration Food products and processing systems <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities 	



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			<ul style="list-style-type: none"> ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy <p>Properties of food</p> <ul style="list-style-type: none"> • reasons for preserving food <ul style="list-style-type: none"> ▪ extend shelf life ▪ preserve nutritional value ▪ out of season availability ▪ palatability ▪ convenience ▪ economics ▪ reduce waste <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques 	
3	1	<p>Processing systems and food preservation</p> <p>Nature of food Properties of food</p> <p>Processing food Food products and processing systems</p> <p>Nature of food Food products and processing systems</p> <p>Processing food Food products and processing systems</p>	<p>Properties of food</p> <ul style="list-style-type: none"> ▪ functional properties that determine the performance of food ▪ aeration <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy 	



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			<p>Properties of food</p> <ul style="list-style-type: none"> ▪ causes of food spoilage and contamination ▪ environmental factors, such as oxygen, light, heat, water, infestation ▪ enzymatic activity on food ▪ microbial contamination of food, such as mould, yeast, bacteria <p>Food products and processing systems</p> <ul style="list-style-type: none"> ▪ devise food products ▪ apply preparation and processing techniques 	
3	2	<p>Food processing techniques</p> <p>Nature of food Properties of food</p> <p>Processing food Food products and processing systems</p>	<p>Properties of food</p> <ul style="list-style-type: none"> • functional properties that determine the performance of food <ul style="list-style-type: none"> ▪ crystallisation <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy <p>Food products and processing systems</p> <ul style="list-style-type: none"> • food processing techniques are used to control the performance of food <ul style="list-style-type: none"> ▪ temperature – heat, cold ▪ exposure to air ▪ pH level ▪ addition of chemicals – salt, sugar ▪ removal of moisture 	



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			<ul style="list-style-type: none"> ▪ manipulation 	
3	3	<p>Processing systems and food preservation Processing Food Food products and processing systems Nature of food Properties of food</p>	<p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques • investigate wet processing techniques and dry processing techniques <ul style="list-style-type: none"> ▪ suitable food commodities ▪ effect on nutrition ▪ heat transfer ▪ sensory properties ▪ cost of ingredients and energy <p>Properties of food</p> <ul style="list-style-type: none"> • principles of food preservation <ul style="list-style-type: none"> ▪ control of temperature, such as pasteurisation, ultra-high temperature treatment, freezing, and canning or bottling ▪ anaerobic breakdown of organic substances or nutrients such as fermentation ▪ addition of chemicals, such as salt, sugar, acid, and artificial preservative ▪ removal of moisture through dehydration and evaporation ▪ removal of oxygen through vacuum packing 	<p>Task 2: Functional properties</p>



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3	4-6	<p>Food processing Food products and processing systems</p>	<p>Food products and processing systems</p> <ul style="list-style-type: none">• the technology process to produce a preserved food product based on a product proposal<ul style="list-style-type: none">▪ investigate▪ devise▪ produce▪ evaluate• devise food products<ul style="list-style-type: none">▪ interpret and adapt recipes▪ devise food orders▪ develop, produce and evaluate prototypes▪ devise production plans▪ apply preparation and processing techniques▪ cost recipes• evaluate the preserved food product<ul style="list-style-type: none">▪ product's compliance with the proposal▪ product's use in another food product▪ product's sensory properties▪ selection of processing techniques▪ selection of equipment and resources▪ time requirements	Task 8: Food preservation
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3	7	<p>Food in society Food issues</p> <p>Food processing Food products and processing systems</p>	<p>Food issues</p> <ul style="list-style-type: none"> • factors that influence food choices • location • income • supply and demand • environmental impact • advertising and marketing • sponsorship, tokens and free gifts, and supersizing techniques used to market food products <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques 	
3	8-9	<p>Food in society Laws and regulatory codes</p> <p>Food processing Food products and processing systems</p>	<p>Laws and regulatory codes</p> <ul style="list-style-type: none"> • principles of the HACCP system <ul style="list-style-type: none"> ▪ conduct a hazard analysis ▪ identify critical control points ▪ establish critical limits for each critical control point ▪ establish critical control point monitoring requirements ▪ establish corrective actions ▪ verify procedures ▪ establish record keeping procedures • regulation of food safety in Australia <ul style="list-style-type: none"> ▪ state authorities ▪ local authorities • <i>Occupational Safety and Health Act 1984</i> and the rights and responsibilities of employers and employees in food environments <p>Food products and processing systems</p> <ul style="list-style-type: none"> • devise food products <ul style="list-style-type: none"> ▪ apply preparation and processing techniques 	



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3	10	Food processing Food products and processing systems	Food products and processing systems <ul style="list-style-type: none">• devise food products apply preparation and processing techniques	Task 7: Test-Laws and regulatory codes
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**At times, due to in class functions, some delivery of content may be rescheduled, so that students have better opportunities to learn and display their skills.*