



# **Food Science and Technology**

## **General Course Year 12**

### **Selected Unit 3 syllabus content for the**

### **Externally set task 2018**

This document is an extract from the *Food Science and Technology General Course Year 12 syllabus*, featuring all of the content for Unit 3. The content that has been highlighted in the document is the content on which the Externally set task (EST) for 2018 will be based.

All students enrolled in the course are required to complete an EST. The EST is an assessment task which is set by the Authority and distributed to schools for administering to students. The EST will be administered in schools during Term 2, 2018 under standard test conditions. The EST will take 50 minutes.

The EST will be marked by teachers in each school using a marking key provided by the Authority. The EST is included in the assessment table in the syllabus as a separate assessment type with a weighting of 15% for the pair of units.

# Unit 3 – Food science

## Unit description

This unit explores the societal, lifestyle and economic issues that influence food choices. Students research the effect of under-consumption and over-consumption of nutrients on health and investigate a range of diet-related health conditions that affect individuals and families.

Using scientific methods, students examine the functional properties that determine the performance of food and apply these in the planning, preparation and processing of food.

Students develop their expertise with technology skills to implement strategies to design food products and processing systems. They select resources to meet performance requirements and use evaluation strategies to monitor and maintain optimum standards. Students follow occupational safety and health requirements, implement safe food handling practices and use a variety of foods and processing techniques to produce safe, quality food products.

## Unit content

An understanding of the Year 11 content is assumed knowledge for students in Year 12. It is recommended that students studying Unit 3 and Unit 4 have completed Unit 1 and Unit 2.

This unit includes the knowledge, understandings and skills described below.

### Nature of food

#### Food as a commodity

- the economic cost of raw and processed food products
- the development and use of varieties of food commodities, such as apples and potatoes, to:
  - alter sensory and physical properties
  - alter nutritional content
  - improve yield

#### Properties of food

- functional properties that determine the performance of food
  - dextrinisation
  - caramelisation
  - crystallisation
  - emulsification
  - gelatinisation
  - oxidation
  - denaturation
  - coagulation
  - leavening
  - aeration
  - rancidity

## Nutrition

- food sources and role of micronutrients for health
  - 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
  - anaemia
  - osteoporosis
  - malnutrition
  - constipation
- effects of over-consumption of nutrients on health
  - obesity
  - cardiovascular disease
  - Type 2 diabetes

## Processing food

### Food products and processing systems

- investigate wet processing techniques and dry processing techniques
  - suitable food commodities
  - effect on nutrition
  - heat transfer
  - sensory properties
  - cost of ingredients and energy
- devise food products
  - interpret and adapt recipes
  - devise food orders
  - trial recipes
  - devise production plans
  - apply preparation and processing techniques
  - cost recipes
- the technology process to produce a food product that demonstrates a wet processing technique and a dry processing technique based on a product proposal
  - investigate
  - devise
  - produce
  - evaluate
- evaluate the food product
  - product's compliance with the proposal
  - product's sensory properties
  - selection of processing techniques
  - selection of equipment and resources
  - time requirements

## Food in society

### Food issues

- societal influences on food choices
  - lifestyle
  - culture
  - religion
  - health promotion campaigns
  - advertising
- economic influences on food choices
  - competition in the marketplace
  - product availability
  - consumer resources

### Laws and regulatory codes

- role of Food Standards Australia New Zealand (FSANZ)
- Australia New Zealand Food Standards Code for food labelling requirements
  - 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
- objectives of *Food Act 2008* (WA)
- purpose of the *Occupational Safety and Health Act 1984*