



SAMPLE COURSE OUTLINE

PLANT PRODUCTION SYSTEMS GENERAL YEAR 12

Copyright

© School Curriculum and Standards Authority, 2015

This document – apart from any third party copyright material contained in it – may be freely copied, or communicated on an intranet, for non-commercial purposes in educational institutions, provided that the School Curriculum and Standards Authority is acknowledged as the copyright owner, and that the Authority's moral rights are not infringed.

Copying or communication for any other purpose can be done only within the terms of the *Copyright Act 1968* or with prior written permission of the School Curriculum and Standards Authority. Copying or communication of any third party copyright material can be done only within the terms of the *Copyright Act 1968* or with permission of the copyright owners.

Any content in this document that has been derived from the Australian Curriculum may be used under the terms of the [Creative Commons Attribution-NonCommercial 3.0 Australia licence](#)

Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course.

Sample course outline

Plant Production Systems – General Year 12

Unit 3 and Unit 4

Semester 1

Week	Syllabus content
1–2	<ul style="list-style-type: none"> Course description, assessment, expectations Revision – update on key concepts from previous years – photosynthesis, respiration, transpiration, soil types, plant production enterprises etc. <p>Investigating plant production</p> <ul style="list-style-type: none"> Develop hypotheses to test based on prior information Design and conduct an investigation, considering aspects of experimental design, including variables and controls
3–4	<p>Systems ecology</p> <ul style="list-style-type: none"> Impact of plant production systems on natural resources Benefits to plant production systems of ecosystem components Effects of pesticides on the environment Nutrient cycles, including nitrogen, carbon, phosphorus
5–6	<p>Plant structure and function</p> <ul style="list-style-type: none"> Structure and function of stems, roots, leaves, flowers, fruit and seeds Response of plant growth to limiting factors, including temperature, water, gases and nutrients Nutrient requirements throughout plant growth stages
7–8	<p>Produce for purpose</p> <ul style="list-style-type: none"> Implement a calendar of operations for a selected plant enterprise Select crops and cultivars to meet market requirements Manage crops to optimise profitability
9–11	<p>Plant environment</p> <ul style="list-style-type: none"> The environment of the shoot, including gaseous exchange and light absorption The environment of the root Function of micronutrients and symptoms of deficiencies Soil textures and their nutrient and water-holding capacity Comparison of long-term climate records with current weather patterns Soil pH and its influence on nutrient availability Interpreting soil and plant test results Correcting soil acidity and alkalinity Monitoring soil nutrients Options for nutrient management Maximising the effectiveness of fertilisers through timing and placement Identifying risks of nutrient pollution Techniques to manage soil water, soil texture and soil structure
12	<p>Investigating plant production</p> <ul style="list-style-type: none"> Analyse and interpret data, including calculating means Present data using appropriate methods Draw conclusions based on experimental data and validate from other sources
13–15	<p>Plant health</p> <ul style="list-style-type: none"> Impact of pests and diseases on production systems Life cycles of selected pests and diseases Assessment of pest and disease risk Biosecurity measures to reduce risk from pests and diseases Factors influencing pest and disease control programs <p>Externally set task</p>

Semester 2

Week	Syllabus content
1–2	<p>Plant health</p> <ul style="list-style-type: none"> Monitoring pests and diseases in a production system Pest and disease management options, including integrated pest management (IPM) Factors affecting the selection of pesticides, including withholding periods
3–4	<p>Plant structure and function</p> <ul style="list-style-type: none"> Sexual reproduction by seeds through self- and cross-pollination Asexual reproduction by vegetative means Phases of growth, growth curves, and plant requirements at different stages
5–7	<p>Breeding and improvement</p> <ul style="list-style-type: none"> Aims of breeding and selection, including profitability, meeting market requirements and environmental conditions Sources of genetic variation Selection criteria, including subjective and objective characteristics Legal requirements of plant production, including plant variety rights (PVR) Genetic terms and concepts Predicting outcomes of crosses using Punnett squares Interactions between genotype and environment (GxE) Breeding systems
8–10	<p>Sustainable production</p> <ul style="list-style-type: none"> Maintaining and improving the quality of soil and water Stewardship of natural and farming resources, including technologies Complying with industry codes of practice Identification of risks to sustainable production Review the sustainability of current management practices Government legislation relating to a selected enterprise
11–12	<p>Produce for purpose</p> <ul style="list-style-type: none"> Assess quality of product against market specifications Identify quality assurance programs for selected plant production systems, including their purpose and major features Identify transport and storage requirements for plant products
13–15	<p>Economics, finance and markets</p> <ul style="list-style-type: none"> Quantity and value of domestic plant products Marketing options for plant products Assessment of resources used in enterprises Marginal costs and marginal returns and the application of the law of diminishing returns Applying the law of the minimum to plant production Factors affecting supply and demand Interpretation of supply and demand information for a product Preparation of simple budgets for an enterprise and identification of items likely to impact on profit