

HR900-20 Crop Physiology and Production

23/24

Department

Life Sciences

Level

Taught Postgraduate Level

Module leader

Stephen Jackson

Credit value

20

Module duration

2 weeks

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

As a basis for exploiting MSc level training in plant biosciences and horticulture this module provides a clear understanding of the principles and limitations of modern crop production practices.

[Module web page](#)

Module aims

The module does not provide specific details for individual crops; the aim is to provide advanced, but generic, understanding of the science underpinning crop production in both the field and glasshouse. The module will deliver insight and understanding in physiology where it is relevant to maximising gains/minimising inputs from/for a wide range of crops. It will also provide an appreciation of the diversity of crop production practices and techniques that are in specific production situations. Lectures will be supported by a visit to a site of commercial production to illustrate application, context and business practice.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Introduction to crop production
Environmental stewardship and sustainable crop production
Seed Quality
Seed and Root health
Crop establishment and early growth from seed
Plant responses to the environment
Flowering and reproduction
Plant propagation
Crop scheduling
Water relations and management
Drones and crop production
Crop growth and protection
Plant development and morphology
Crop storage
Visits to sites of commercial production

Learning outcomes

By the end of the module, students should be able to:

- Recognise and communicate best practice from a range of agricultural sectors.
- Evaluate how quantitative datasets can be used to inform decision making.
- Recognise, implement and exploit best practice from a range of agricultural sectors.
- See opportunities to improve and manipulate scheduling, yield and quality in crop production.
- Understand the principles and practices that underpin modern crop production practice.
- Exploit understanding of plant science gained from this course in the context of different agricultural and horticultural practices.

Indicative reading list

Fitter, A & Hay, R Environmental physiology of plants 3rd edition Sept 2001 Harcourt Publishers, Academic Press 0122577663

Finch, H.J.S., Samuel, S.M. and Lane, G.P.F 2002 Lockhart and Wiseman's Crop Husbandry including Grassland. 8th Ed, Woodhead Publishing ISBN 1 85573 549 0

Brown LV Applied Principles of Horticultural Science. 2002, second edition. ISBN 0750653426

Lambers H, Chapin III FS, Pons TL. Plant Physiological Ecology 1998. ISBN 0-387-98326-0

Thomas, B, Murphy DJ, Murray BG. 2003 Encyclopedia of Applied Plant Sciences. Elsevier. ISBN: 0-12-227050-9

Preece JE and Read PE 2005 'The biology of horticulture, an introductory textbook' second edition. ISBN: 0-471-46579-8

Benech-Arnold RL., Sanchez RA. 2004 Handbook of seed physiology, Applications to Agriculture. ISBN: 1560229292

Milthorpe FL., Moorby J. 1979 An Introduction to Crop Physiology. ISBN: 0521295815

Srivastava, L.M. Plant Growth and Development, hormones and environment. Academic Press 2001. ISBN 012660570X

Fitter, A & Hay, R Environmental physiology of plants 3rd edition Sept 2001 Harcourt Publishers, Academic Press 0122577663

Bacon, MA (2004) Water use efficiency in plant biology. Blackwell Publishing, CRC Press. ISBN 1-4051-1434-7

[View reading list on Talis Aspire](#)

Subject specific skills

Understand the principles and practices that underpin modern crop production practice. Exploit understanding of plant science gained from this course in the context of different agricultural and horticultural practices.

Recognise, implement and exploit best practice from a range of agricultural sectors.

See opportunities to improve and manipulate scheduling, yield and quality in crop production.

Transferable skills

Recognise and communicate best practice from a range of agricultural sectors.

Evaluate how quantitative datasets can be used to inform decision making.

Study

Study time

Type	Required
Lectures	16 sessions of 1 hour (8%)
External visits	1 session of 8 hours (4%)
Other activity	8 hours (4%)
Private study	168 hours (84%)
Total	200 hours

Private study description

Independent research

Other activity description

Guest lecturer

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

Assessment group A4

	Weighting	Study time	Eligible for self-certification
Assessed Presentation	50%	25 hours	No
Essay	50%	25 hours	Yes (extension)

Feedback on assessment

Written individual feedback provided through Moodle.

Availability

Courses

This module is Core for:

- Year 1 of THRA-D4A3 Postgraduate Taught Food Security
- Year 1 of THRA-D4A2 Postgraduate Taught Sustainable Crop Production: Agronomy for the 21st Century