

MODULE DESCRIPTOR

MODULE TITLE	Plant Production Science		
MODULE CODE	MR1018	CREDIT VALUE	20 Credits
MODULE DELIVERY	Semester 1		
MODULE TUTOR	David Stokes		
DATE APPROVED	1-2 May 2003, April 2008		VERSION NUMBER 2
DEPARTMENT	School of Built & Natural Environment	PARTNER INSTITUTION	Myerscough College

RELATIONSHIP WITH OTHER MODULES

Co-requisites	None	Pre-requisites	None	Excluded Combinations	None
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MODULE AIMS

This module aims to investigate ways of propagating plants by a range of sexual and asexual methods. Methods of plant breeding and the importance to horticulture will be explored. The module will use the International system of plant nomenclature to recognise a range of plant material and their methods of propagation. Plants will be grown in suitable growing media and environmental conditions. The module will also develop skills in team work, presentation and experimental techniques.

MODULE CONTENT

- 1 The Environment and Plant Growth**
 - 1.1 Light
 - 1.2 Heat
 - 1.3 Water
 - 1.4 Shelter
 - 1.5 Provision of controlled environments
- 2 Propagation**
 - 2.1 Seed-bed production and direct sowing
 - 2.2 Importance of provenance to sexual and asexual production
 - 2.3 Module production and germination improvement
 - 2.4 Vegetative methods
 - 2.5 Micropropagation and tissue culture
 - 2.6 Controlled environments for propagation
 - 2.7 Equipment and Technology
- 3 Taxonomy**
 - 3.1 Plant classification
 - 3.2 Plant identification
 - 3.3 Plant nomenclature
- 4 Growing Media**
 - 4.1 Loam, peat and peat substitutes
 - 4.2 Nutrition, types of fertilisers and their use
 - 4.3 Sterilisation
 - 4.4 Selection
- 5 Plant Breeding**
 - 5.1 Plant breeding systems - parent selection, pollination, fertilization, apomixis, pathenocarpy

LEARNING OUTCOMES

On successful completion of this module a student will be able to:

1	Identify, classify and name plants correctly.
2	Produce plant material by a variety of techniques using appropriate equipment.
3	Describe methods of altering the plant environment to obtain desired plant growth and development.
4	Devise a simple experiment to compare different growing media for plant propagation

TEACHING AND LEARNING STRATEGY

Lectures will provide the basic framework of knowledge which will be developed by the assignment and visits. Basic skills will be developed via practical activities (eg. seed sowing, module production, and micropropagation).

INDICATIVE CLASS CONTACT

Lecture 3 hours per week plus practical session 2 hours per week.

INDICATIVE ASSESSMENT

Number of Assignments	Assessment	Weighting %	Type/Duration/ Wordcount (indicative only)	Learning Outcomes being assessed
1	Scientific Investigation and report	40%	assessing theoretical aspects of plant breeding or production and report writing skills.	2, 3, 4
Several	plant identification tests	10%	10 - 15 plants	1
1	End of Module Examination	50%	2 hours	All

MODULE PASS REQUIREMENTS

For successful completion of the module, each individual element of assessment must be passed at 40%.

BIBLIOGRAPHY AND LEARNING SUPPORT MATERIAL

- Acquaah, G. (2002) *Horticulture Principles and Practices*. Prentice Hall
- Bragg, N. (1995) *Growing Media*. Grower Books
- Brickell, C. (Ed) (2000) *RHS A-Z Encyclopaedia of Garden Plants* Dorling Kindersley
- Bunt, A.C. (1988) *Media and Mixes for Container Grown Plants*. Pennsylvania State University Press
- Copeland, L.O. & McDonald, M.B. (2001) *Principles Of Seed Science And Technology*. 4th Edition Kluwer Academic Publishers
- Dodds, J. & Roberts, L. (1995) *Experiments in Plant Tissue Culture*. Cambridge University Press
- Hillier Nurseries (1998) *The Hillier's Manual of Trees and Shrubs*. David & Charles
- Ingram, D.S. Vince-Prue, D. & Gregory, P.J. (2002) *Science and the Garden*. Blackwell Publishing
- Jackson, D. (1999) *Temperate and Subtropical Fruit Production*. CABI Publishing
- Johnson, A.T. & Smith, H.A. (1986) *Plant Names Simplified*. The Hamlyn Publishing Group
- Kester, D.E. & Davies, F.T. (2000) *Hartmann and Kester's Plant Propagation: Principles and Practices*. 7th Edition Prentice Hall
- MacDonald, B. (1989) *Practical Woody Plant Propagation for Nursery Growers*. Timber Press
- Philip, C. (2002) *RHS Plant Finder. 2002-2003* Dorling Kindersley

OTHER PUBLICATIONS

JOURNALS

Plantsman Journal
Journal of Horticultural Science and Biotechnology
Kewensis
Grower
Horticulture Week

ELECTRONIC INFORMATION SOURCES

<http://www.naturebureau.co.uk/pages/floraloc/resources/propagation/contents.htm>