

MODULE DESCRIPTOR

MODULE TITLE	Essential Plant Biology		
MODULE CODE	MR1206	CREDIT VALUE	10 Credits
MODULE DELIVERY	Semester		
MODULE TUTOR	Julie Smith		
DATE APPROVED	April 2008	VERSION NUMBER	1
DEPARTMENT	School of Built & Natural Environment	PARTNER INSTITUTION	Myerscough College

RELATIONSHIP WITH OTHER MODULES

Co-requisites	None	Pre-requisites	None	Excluded Combinations	None
----------------------	------	-----------------------	------	------------------------------	------

MODULE AIMS

This module aims to provide students with the essential knowledge of plant biology needed to allow successful management of their growth and development. Students will discover how plant form and function relates to their basic needs in terms of light, water, nutrients and reproduction. The module also aims to promote an understanding of how plant growth and development is affected by environmental conditions and how this relates to current management practices.

Development of skills in collecting and recording data, in report writing and in use of spreadsheets in carrying out calculations and plotting graphs are also important aspects of this module.

MODULE CONTENT

1 Plant Form and Function

- 1.1 Morphology of stems, roots, leaves, flowers and fruits
- 1.2 Anatomy and function of stems, roots and leaves
- 1.3 Secondary thickening in woody plants
- 1.4 Seed structure and function
- 1.5 Plant cell structure
- 1.6 Basic Plant Taxonomy

2 Plant Growth and Development

- 2.1 Seed germination, dormancy and development
- 2.2 Vegetative growth (including introduction to photosynthesis, respiration and water movement)
- 2.3 Introduction to environmental factors affecting plant growth and plant responses/adaptations
- 2.4 Flowering and sexual reproduction
- 2.5 Asexual reproduction and perennation
- 2.6 Senescence in plants
- 2.7 Plant Growth Analysis techniques

LEARNING OUTCOMES

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

1	Explain how the features of plant structures relate to their functions and the plant life cycle.
2	Describe the developmental stages of a plant and how environmental factors affect them.
3	Record and present observations and data using a range of techniques.

TEACHING AND LEARNING STRATEGY

The module will be delivered either by a series of lectures, seminars, workshops and practicals to develop scientific investigation skills and approaches, or formatted as a sequenced series of online interactive lecture materials.

For online delivery sample results from laboratory experiments will be presented for analysis and discussion. Regular use will be made of formative, diagnostic self assessment tests. Online students will be encouraged to participate in on-line discussion forums.

INDICATIVE CLASS CONTACT

1 hour lecture per week (12 weeks x 1 hour) plus **either** a 2 hour practical (6 weeks x 2 hours) **or** 1 hour workshop/seminar per week (6 weeks x 1 hour).

For on-line distance learning, module tutor time equivalent to 2 hours per week is allocated to support students. On-line students also have 24 hour access to a wide range of on-line learning materials and learning activities.

INDICATIVE ASSESSMENT

The assessment strategy for this module is designed to test all the learning outcomes. Students must demonstrate successful achievement of these learning outcomes to pass the module.

Number of Assignments	Assessment	Weighting %	Type/Duration/ Wordcount (indicative only)	Learning Outcomes being assessed
Several	Frequent (4) short tests	50%	20 minute tests	1 & 2
1	Write up of practical work as a report	50%	1500 words	2 & 3

MODULE PASS REQUIREMENTS

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

BIBLIOGRAPHY AND LEARNING SUPPORT MATERIAL

- Allaby, M. (2004) *A Dictionary of Plant Sciences*. 2nd Edition Oxford University Press
- Beard, J.B. (1973) *Turfgrass Science and Culture*. Prentice-Hall
- Bowes, B.G. (1996) *A Colour Atlas of Plant Structure*. London: Manson
- Campbell, N.A. Reece, J.B. Molles, M. Urry, L.A. & Heyden, R. (2005) *Biology*. 7th Edition Benjamin Cummings
- Capon, B. (1990) *Botany for Gardeners: An Introduction and Guide*. Batsford
- Clegg, C.J. & Mackean, D.G. (2000) *Advanced Biology*. 2nd Edition John Murray
- Eyewitness Visual Dictionary of Plants* (1992) Dorling Kindersley
- Jones, M. & Jones, G. (1997) *Advanced Biology*. 2nd Edition Cambridge
- Mauseth, J.D. (2003) *Botany: An Introduction to Plant Biology*, 3rd edition. Jones and Bartlett, London.
- Pallardy, S.G. (2008) *Physiology of Woody Plants*, 3rd Edition. San Diego, California: Academic Press
- Lack, A.J. & Evans, D.E. (2001) *Plant Biology*. Oxford: Bios Scientific
- Preece, J.E. & Read, P.E. (1993) *The Biology of Horticulture*. J Wiley & Sons

OTHER PUBLICATIONS

- Journal of Arboriculture
- Journal of Horticultural Science and Biotechnology
- Journal of Turfgrass Science
- New Phytologist