



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

MODULE DIRECTORY

LEVEL 7

SCHOOL OF ARCHITECTURE, BUILT AND NATURAL ENVIRONMENTS

FACULTY OF ARCHITECTURE, COMPUTING AND ENGINEERING

2018-2019

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INTRODUCTION

This Module Directory includes all the modules for Level 7 within the School of Architecture, Built and Natural Environments in the academic year 2018-2019.

This directory accompanies the Programme of Study Handbook, which will provide you with details of which modules you will be studying for your programme this year in the 'Programme of Study' section. This directory may include modules that are running on other programmes of study within your School/Faculty. If you require assistance in identifying the modules for your programme of study, please contact the Programme Director (whose name and contact details are provided in the accompanying Programme of Study Handbook), or the relevant Faculty Office.

The University has made every effort to make the information as full and as accurate as possible, but you should note that minor changes in the organisation of modules between the planning stage and the actual teaching are inevitable. We shall try to keep any such changes to a minimum, and you will receive plenty of advance warning in the event of any alteration. We would also be grateful if you would let us know about any changes that you think might be helpful if introduced into future handbooks.

MODULES

MODULE CODE: M7X01251
TITLE: Environmental Planning and Policy
DATED: 29/06/2017

LEVEL: 7
CREDITS: 20

JACS CODE: H223

AIM(S)

- To provide an understanding of policy formulation, structure and implementation and to examine specific aspects of planning systems, including Strategic Environmental Assessment and Environmental Impact Assessment, and its effect on the economy, society and the environment.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

- Demonstrate an in depth understanding of the environmental implications of developing strategic policies and plans.
- Analyse environmental policies based on contextual analysis.
- Critically assess policy formulation and implementation.
- Consider the ramifications of policy on the environment and associated economy.

INDICATIVE CONTENT

- An introduction to National, European and global policies.
- Application of specific strategic policies such as Shoreline Management, landscape designations, stakeholder partnerships, and inputs from Government and NGO's.
- Analysis of the Strategic Environmental Assessment and Environmental Impact Assessment, including Mitigation and Compensation.
- The relationship between the environment and policy formulation.
- Environmental policy formulation, implementation and monitoring.
- Environmental Impact Assessment formulation, including auditing.
- Methods of assessing environmental impacts.
- Evaluation of policies and their effects on society, the economy and the environment.

LEARNING AND TEACHING STRATEGY

Individual topics will be introduced in lectures. Lectures will be supported by tutorials and/or directed study. Seminars, group discussions and workshops will be used to develop ideas, concepts and practical applications. The public conference will be delivered and organised by the students in collaboration with tutors.

Allocation of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	50	25%
Independent learning	150	75%
Placement learning		
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 70%

Select an EIA/SEA and critically review the relationship between theory and practice.

For example The EIA of the Mumbles RNLI lifeboat station (2014).

This is required in a critique report format of no more than 3,000 words excluding appendices.

Assessment Component 2 – 30%

The marked report should be then presented at a conference organised/advertised by the students and attended by members of the public (15 minute presentation, plus 5 minute discussion).

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	70%
Practical	30%
TOTAL	100%

BIBLIOGRAPHY

Essential

- | | |
|---|---|
| Dibie, R.A. (2014) | Comparative perspectives on environmental policies and issues. Routledge, London. |
| Elden, S. (2011) | Environment and planning (5 volumes) Sage: London |
| George, C. & Kirkpatrick (2007) | Impact assessment and sustainable development Elgar: Cheltenham |
| Giampietro, M., Aspinall, R.J., Ramos-Martin, J. & Bukkens, S. (2014) | Resource accounting for sustainability Assessment. Routledge, London. |
| Glasson, J., Therivèl, R., Chadwick, A. (2012) | Introduction to Environmental Impact Assessment (2 nd Edition). UCL Press, London. |
| Hawke, N. (2002) | Environmental Policy: Implementation and |

	enforcement Aldershot, Ashgate
Sartorius, C. & Zundel, S. (2005)	Time strategies, innovation and environmental policy Elgar: Cheltenham
Tromans, S. (2012)	Environmental Impact Assessment Bloomsbury: West Sussex

Recommended

CIRIA (1996)	Environmental Assessment: Good Practice (Special Publication 126). CIRIA.
Glasson, J., Therivèl, R., Chadmi, P. (2005)	SEA: a sourcebook and reference guide to international experience James & James, Earthscan
Goudie, A. (2013)	The Human Impact on the Natural Environment. Blackwell, Oxford
Hanf, K. & Jansen, A. (1998)	Governance and environment in western Europe Longman, Harlow
Hawken, P. (2007)	Natural capitalism : the next industrial revolution Earthscan, London
Holder, J. (2007)	Environmental Assessment law, policy and custom UCL: London
Jones, P.J.S. (2014)	Governing Marine Protected Areas. Routledge, London
Jordan, A. (2005)	European Union: Power and Policy Making Routledge, London
Morris, P., and Therivèl, R. (2009)	Methods of Environmental Impact Assessment. UCL Press, London.
Rhodes, R.A.W. (1997)	Understanding governance: Policy networks, governance, reflexivity and accountability OU: Buckingham
Therivel, R. (2004)	SEA in action James & James, Earthscan Introduction to EIA Spon Press, London
Vadrot, A.B.M. (2014)	The politics of knowledge and global diversity Routledge, London
Wurzel, R.K.W. (2006)	Environmental Policy in the EU: Actors,

Institutions and Processes James & James,
Earthscan, London

Journals

Environmental Scientist
Journal of Coastal Research
Journal of Environmental Assessment
Journal of Environmental Economics and Management
Journal of Environmental Management
Planning Practice and Research
Policy and Management
Science Direct (on-line)
Tourism Management
Town and Country Planning.

Websites

CCW
CIRIA
DETR
English Nature
European Union
EUCC
Europa
IES
Welsh Assembly Government
WWF
IPC
Planning Portal

MODULE CODE: M7X01252
TITLE: Strategic Management for Conservation
DATED: 29/06/2017

LEVEL: 7
CREDITS: 20

JACS CODE: K220

AIM(S)

- To provide a forum in which knowledge acquired can be developed and integrated into strategic management within the field of environmental conservation, both temporally and spatially from national and international perspectives, whilst evaluating and critically assessing the need for a sustainable economy that preserves and enhances the environment.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

- Demonstrate an in depth understanding of the environmental implications of developing strategic management including that of 'enterprise', and application to specific case studies.
- Analyse and evaluate strategic management and environmental policies based on contextual analysis.
- To critically assess management processes, utilising present business models, when applied to specific anthropogenic and natural processes.
- To consider the ramifications of climate change within the natural and business environment, and the strategies for minimising anthropogenic impacts.

INDICATIVE CONTENT

- An introduction to strategic management,
- The importance of strategic management and environmental policy in different contexts specifically, commercial, industrial and, conservation.
- Application of specific strategic goals through the utilisation of management techniques, which include investigation into Environmental Management Systems, and their accreditation.
- Analysis of the business environment using PESTEL and SWOT frameworks including environmental assessment.
- The relationship between the environment, business culture, entrepreneurship and consumer attitudes which include Reverse logistics, 'green' marketing, packaging and eco-labelling.
- Strategic position and choice. Environmental policy formulation and implementation for business.

- Environmental management systems and strategies and their relevance to reducing human impacts on the natural environment, utilising specific examples.
- Environmental Auditing.
- Environmental Management Systems, their design and implementation.

LEARNING AND TEACHING STRATEGY

Individual topics will be introduced in lectures. Lectures will be supported by tutorials and/or directed study and field trips. Seminars, group discussions and workshops will be used to develop ideas, concepts and practical applications.

Allocation of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	50	25
Independent learning	150	75
Placement learning		
TOTAL	200	100%

ASSESSMENT SUMMARY

Assessment Component 1 – 70%

Comprehensive evaluation of a specific company and its environmental policy.

3,000 word report format

Assessment Component 2 – 30%

Student led seminar (20 minutes), which will be peer reviewed, that will require the student to review the comments from the report.

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	70%
Practical	30%
TOTAL	100%

BIBLIOGRAPHY

Essential

- Christopher, J. (2004) Environmental Management and Development, Taylor & Francis Ltd.
- Coyle, G. (2004) Practical Strategy: Structured Tools and Techniques, Prentice-Hall
- David, F. (2007) Strategic Management: Concepts and Cases, Prentice-Hall
- Johnson, G and Scholes, K. (2006) Exploring Corporate Strategy, Prentice-Hall
- Lovett, J.C. & Ockwell, D.G. (2007) A handbook of environmental management Elgar: Cheltenham
- Welford, R and Gouldson, A Environmental Management and Business Strategy, Pearson

(2005)

Recommended

- Finlay, P. (2001) Strategic Management
- Haberberg, A. & Rieple, A. (2002) The Strategic Management of Organisations
- Krishnamoorthy, B. (2005) Environmental Management, Prentice-Hall
- Lynch, R. (2003) Strategic Management
- Welford, R (2000) Corporate Environmental Management, Earthscan

Journals

- Harvard Business Review
- Journal of Management Studies
- Management Review
- Management Today
- Strategic Management Journal
- Journal of Environmental Assessment Policy and Management
- Journal of Environmental Management
- Wall Street Journal

Websites

- CCW
- DETR
- Europa
- English Nature
- EUCC
- Welsh Assembly Government
- ENDs Report

MODULE CODE: M7X01253
TITLE: Sustainable Development
DATED: 29/06/2017

LEVEL: 7
CREDITS: 20

JACS CODE: D447

AIM(S)

- The aim of this module is to provide the student with the skills to assess Sustainable Development (SD) and its application, and also the long-term benefits / costs to society, should it ever be achieved.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

- Analyse the impacts of development on the natural environment, including societal implications;
- Review management and policy making issues with regard to the interaction of the natural and built environment and other relevant strategies, i.e. Ecological Modernisation
- Research and critically evaluate current key trends with regard to sustainable development
- Apply sustainable development concepts to real life scenarios.

INDICATIVE CONTENT

- Sustainable development - the concept: The challenges attributed to defining such an ideal
- An introduction to present Social theory, including Ecological Modernisation, Green Capitalism, Green Consumerism, Environmental Economics and the Green Paradigm
- Governments, NGOs and other stakeholders, their interaction with policy and the setting of targets, their ability to achieve them and the overall effects on the human and natural environment, specifically including health, education, environmental justice and gender issues
- The management and strategies, including conservation, applied to natural resources, their use and distribution
- Challenges with, and policies and strategies designed to deal with, sustainable development across a range of study areas, for example:

- o energy usage
- o economy; green capitalism, ecological modernisation, ecological capitalism and green consumerism
- o environmental and social justice
- o biodiversity
- o pollution
- o population; health and education
- o forestry practices
- o agriculture and water shortage challenges
- o local and central government

LEARNING AND TEACHING STRATEGY

It is essential that considerable background reading is undertaken to effectively consolidate the lecture material and handouts. The methods will vary according to the nature of the topic, but will be a combination selected from lectures, seminars, case studies, educational visits, assignments and private study.

Formal PowerPoint lectures and the use of VLE (Moodle) will be the principal form of delivery for this module.

Allocations of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	60	30
Independent learning	140	70
Placement learning		
TOTAL	200	100%

ASSESSMENT

The delivery for this module is centred mainly on student centred activity. Realistic projects are supplied and students are expected to visit proposed sites, arrange team responsibilities and contribute to meeting deadlines as outlined in assignment briefs. Timetabled progress dates are set when students will update the client's team (module tutors) on progress. It is anticipated that during the project development the client is likely to add changes to the initial brief.

Assessment Component 1 – Coursework 50%

Critically assess a sustainable issue and highlight the interface between the environment and anthropogenic forces. 2,000 word / student group presentation consisting of individual written report as part of a group report and 8 min / student contribution to the presentation. (50%).

Assessment Component 2 – Written Exam 50%

Awareness of the implications of Strategies on the design of sustainable environments
Case studies, investigate key trends in sustainable development.

Examine the likely impacts resulting from the push towards a more sustainable society

2 hour examination (Students will be offered a choice of 2 questions from 3. (50%))

Assessment Summary

Activity type	Percentage
Written	50
Coursework	50
Practical	
TOTAL	100%

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The title of the module illustrates sustainability throughout. The module will indeed investigate all three pillars of sustainability; economic, social and environmental.	

BIBLIOGRAPHY

Essential

- | | |
|---|---|
| Atkinson, G., Dietz, S. and Neumayer, E. (2007) | <i>Handbook of Sustainable Development</i> . Elgar: Cheltenham |
| Blewitt, J. (2012) | <i>Understanding Sustainable Development</i> |
| Harris, J., Wise, T., Gallagher, K., Goodwin, N., R. (2013) | <i>A Survey of Sustainable Development: Social And Economic Dimensions</i> |
| Jackson, T. (2010) | <i>Prosperity Without Growth</i> |
| Rao, P. K. (2000) | <i>Sustainable Development, Economics and Policy</i> . Blackwell Publishers Ltd, Oxford. UK |

Recommended

- | | |
|---|--|
| Cogey, M. and Steininger, K. (2007) | <i>The Economics of Global Environmental Change</i> . Elgar: Cheltenham |
| Porritt, J. (2005) | <i>Capitalism as if the World Matters</i> . Earthscan UK |
| Schumacher, E. F., (1974) | <i>Small is Beautiful</i> , Vantage. |
| Weizsacker, Ernest Von & Lovins, Amory, B. (1998) | <i>Factor Four: Doubling Wealth – Halving Resource Use</i> . Earthscan UK. |
| Welford, R. (1995) | <i>Environmental Strategy and Sustainable Development</i> . |

Journals

Journal of Sustainable Development

Sustainable Agriculture

Environmental Justice

Conservation and Sustainable Development

The Ecologist

Green Futures

Sustainable Development International

Sustain

Permaculture

Building for the Future

Websites

Welsh Government

DEFRA

National Centre for Appropriate Technology

International Labour Organization

GDAE Institute at Tuft's University

MODULE CODE: M7X01254
TITLE: Postgraduate Research Methodology
DATED: 17/07/2014

LEVEL: 7
CREDITS: 10

JACS CODE: K220

AIM(S)

The aim of this module is for students to develop a problem solving approach to research to facilitate their production of a valid and reliable postgraduate dissertation.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Identify a problem, outline the investigative approach and comprehensively consider appropriate methods and solutions.
2. Evaluate data quality (e.g. sampling, methodology), reason (e.g. assumptions, interpreting evidence, recognition of uncertainty) and modify the hypotheses/objectives.
3. Construct a well-defined and structured research proposal

INDICATIVE CONTENT

- Intellectual property – copyright, trademarks, patents.
- Identifying a research problem, formulating a hypothesis and literature review.
- Experimental design, sampling and interpretive frameworks.
- Sources of information – archives, bibliographic sources, current literature, the Internet
- Statistical techniques, parametric and non-parametric testing, correlation.
- Questionnaire design, Field data
- Qualitative analysis.
- Developing a proposal – research statements, research outline and design research schedule.
- Presentation of results, graphical techniques and referencing.
- Writing up

LEARNING AND TEACHING STRATEGY

Students will be taught through lectures and tutorials to develop the theoretical and practical aspects of the module. The lectures will focus on research methods theoretically and the tutorials will be an opportunity for individual students/ small groups to discuss their research proposals. Additional tutorial support will be provided for students who have not undertaken an appropriate research methods module in their undergraduate programme.

Allocation of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	30	30
Independent learning	70	70
Placement learning		
TOTAL	100	100%

ASSESSMENT

Assessment Component 1 – 70%

Academic research proposal Published on moodle and staff/peer marked
3,000 word report.

Assessment Component 2 – 30%

A flip chart video of the research proposal which presents an outline of the proposal and the reasons why the topic is Master's worthy. The video is presented to the group 2 weeks prior to submission of written work. Students need to respond to comments in their written proposal. The videos are peer and staff assessed via Grademark (10 mins).

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	70%
Practical	30%
TOTAL	100%

BIBLIOGRAPHY

Essential

Fowler, J. , Cohen, L. & Jarvis, P. (2013) Practical statistics for field biology. Wiley, London.

Harrad, S., Batty, L., Diamond, M. Arhonditsis, G. (2008) Student projects in environmental science. Wiley

Hughes, J. (2013) Methods for policy research. Sage: London.

Newing, H. (2010) Conducting research in conservation Routledge
Wheater, C.P. & Cook, P.A. (2006) Using statistics to understand the environment
Routledge

Recommended

- Clark, V.L.P. & Ivankova, N.V. (2015) Mixed methods research. Sage: London
- Clemens, R.F. (2015) Research methods in Geography Blackwell
- Gomez, B. &
- Jones, J.P. (2010) Using social media for qualitative research. Sage: London.
- Gregoire, T.G. & Valentine, H.T. (2008) Sampling strategies for natural resources and the environment. Chapman, London
- Hewson, C. , Vogel, C. & Laurent, D. (2015) Internet research methods. Sage: London.
- Kubler, B. and Forbes, P. (2005) Student Employability Profiles: A Guide for Employers, Council for Industry & Higher Education, London
- Montello, D. & Sutton, P. (2013) An introduction to scientific research methods in geography and environmental studies. Sage: London.
- Shaefer, S.J. & Theodore, L. (2007) Probability and statistics applications for environmental science CRC press, London
- Thomson, A. (1996) Critical reasoning Routledge: London.
- Trought, F. (2012) Brilliant Employability Skills: How to Stand Out from the Crowd in the Graduate Job Market, Pearson Education, Harlow
- Vaccaro, I, Smith, E.A. (2010) Environmental social sciences: Methods and research design. Cambridge University.
- Vredenburg, K. (2014) Modern Research Methods for the Study of Behavior in Organizations. Routledge: London.

Journals

Appropriate to subject matter. Plus
Organizational Research Methods
Journal of Mixed Methods Research
Environment & Behaviour
Virtual Research Methods (Reference)

Websites

Appropriate to subject matter.

MODULE CODE: M7X01255
TITLE: Environmental Law
DATED: 17/07/2014

LEVEL: 7
CREDITS: 10

JACS CODE: M990

AIM(S)

To enable students to assess the role of legal controls (statute and common law) in relation to the protection of the environment in England and Wales.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Differentiate between the role of the common law and the role of statute in protection of the environment in England and Wales;
2. Apply legal controls to specific environmental problems in England and Wales;

Evaluate the problems facing environmental protection agencies in England and Wales;

3. Appreciate the role of international law in protection of specific environmental

INDICATIVE CONTENT

- What is meant by environment? Some comparative legal definitional work.
- A brief legal environmental history of England and Wales – focusing on the protection of air
- The impact of pollution control on the development of Swansea.
- Environmental Administration in England and Wales.
- Protection of individual environmental media: air, water and waste on land
- Contaminated land in England and Wales, with a specific focus on contaminated land in South Wales.
- International law and the protection of the marine environment.

LEARNING AND TEACHING STRATEGY

Individual topics will be introduced in lectures. Lectures will be supported by tutorials and/or directed study. Seminars, group discussions and workshops will be used to develop ideas, concepts and practical applications.

Allocation of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	30	30
Independent learning	70	70
Placement learning		
TOTAL	100	100%

ASSESSMENT

Assessment Component 1 – 70%

An environmental protection issue/ international environmental issue which involves a legal protection framework.

Assessed by a written assignment of 2,000 words

Assessment Component 2 – 30%

Differentiate between statute and common law solutions and accordingly analyse and apply the “best-fit” to a particular environmental problem.

Assessed by a PowerPoint presentation (15 minutes).

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	70%
Practical	30%
TOTAL	100%

BIBLIOGRAPHY

Essential

Bell and McGillivray (2014)	Environmental Law OUP
Gillespie A (2014)	International Law, Policy and Ethics (Second Edition) OUP
Hughes et al (2012)	Environmental Law (Fifth Edition) Butterworth (forthcoming)
McEldowey, J. (2007)	Contemporary Issues in Environmental Law Elgar: Cheltenham
Vandeveer. S and Axelrod. R (2014)	The Global Environment: Institutions, Law and Policy (Fourth Edition)

Recommended

Birnie and Boyle (2002)	International Environmental law and the Environment (Second Edition) OUP
Chasek et al (2013)	Global Environmental Politics (Sixth Edition) OUP
Coyle and Morrow (2004)	The Philosophical Foundations of Environmental Law, Hart
Holder, J. (2007)	Environmental Assessment law, policy and custom UCL: London
Lee (2004)	EU Environmental Law, Challenges, Change and Decision

Roberts (2004)	Making, Hart
Shapiro. J (2013)	Environmental Policy, Routledge
	China's Environmental Challenges. China Today
Wilkinson (2012)	Environment and Law, Routledge

Journals

Journal of Environmental Law
Environmental Data Services (ENDs) Report
Journal of Environmental and Planning Law

Websites

www.defra.gov.uk
www.environment-agency.gov.uk
www.rcep.org.uk
www.greenpeace.org
www.foe.co.uk
www.wales.gov.uk

MODULE CODE: M7X01257
TITLE: Waste and Resource Management
DATED: 17/07/2014

LEVEL: 7
CREDITS: 10

JACS CODE: J900

AIM(S)

This module aims to provide students with the opportunity to explore, in depth, current significant issues relevant to waste resource management. Students will be able to make informed judgments concerning the socio-economic consequences of current technology as applied to waste treatment.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Critically evaluate current significant waste resource management challenges.
2. Analyse a range of technological solutions to the treatment of waste.
3. Examine the opportunities available in meeting current targets for diverting waste from landfills.

INDICATIVE CONTENT

- Waste hierarchy
- Waste legislation & Regulation
- Recycling
- Resource efficiency
- Management of waste as a resource
- Landfill
- Combustion processes
- Sewage sludge
- Environmental issues
- Case studies

LEARNING AND TEACHING STRATEGY

Formal lectures supported with appropriate tutorials will form the main delivery of this module. Students will be encouraged to support these methods with self-study. Tutorial work will provide the framework for students' private study. During the tutorials students will have the opportunity to raise key issues that challenge some of the principles laid down in the lectures thus ensuring the foundation for reinforcing the learning process. In addition educational visits to waste treatment facilities and guest lectures will add value to students' learning.

Allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	30	30
Independent learning	70	70
Placement learning		
TOTAL	100	100%

ASSESSMENT

Assessment Component 1 – 100%

Assessment will be in the form of current thinking behind waste resource management; typically 'an evaluation of the impact the single use carrier bag legislation has on the Welsh economy'.

A 3,000 Word report

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	100%

BIBLIOGRAPHY

Essential

Welsh Government, (2010)
Letcher, T.M., Vallerio, D.A., Eds,
(2011)

Towards Zero Waste: One Wales One Planet
Waste: A Handbook for Management,

Recommended

Dhir, R.K., Limbachiya, M.C. and
Newlands, M.D. (2001)
Hieronymi, K., Kahhat, R.,
Williams, E. (2013)
Brescia, C.A., Passerini, G &
Itoh, H. (2014)

Recycling and Reuse of Used Tyres, Thomas Telford.
E-Waste Management: From Waste to Resource,
Earthscan
Waste Management and the Environment: VII (WIT
Transactions on Ecology and the Environment), WIT

Spellman, F.R. (2014)

Defra (2005)

Press

Personal Care Products and Pharmaceuticals in
Wastewater and the Environment, DEStech Publications
Waste Implementation Programme New Technologies

Journals

Ends

Green Futures

Resource

Waste Management

Waste management International

Warmer Bulletin

Websites

<http://www.info4education.com>

www.endsreport.co.uk

www.defra.gov.uk

www.environment-agency.gov.uk

MODULE CODE: M7X01258
TITLE: Geographic Information Systems
DATED: 17/07/2014

LEVEL: 7
CREDITS: 10

JACS CODE: F846

AIM(S)

To provide the students with, a systematic understanding of the theoretical concepts behind GIS and a conceptual understanding of data collection and presentation in spatial terms. The student should develop a critical understanding of the origins of GIS through the evaluation of current GIS software trends. A coherent understanding of visualization is regarded as a key concept and will be developed throughout the module.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Demonstrate a comprehensive understanding of the principles of spatial data collection.
2. Evaluate and critically appraise a variety of environmental application areas, which could benefit from a GIS solution.
3. Evaluate GIS software and accurately identify spatial databases that could be used to build environmental models.

INDICATIVE CONTENT

- Investigating the fundamentals of visual perception, cartographic visualisation and the map as a visual information system.
- Exploring the origins of GIS and cartographic representation.
- Fundamental theories of spatial databases and spatial analysis.
- Investigating secondary data acquisition e.g. maps, digitising, scanning and appropriate attribute data management and attributes of spatial data sets.
- Evaluate the appropriateness of vector or raster models for given environmental data.
- Analytical modelling in GIS.
- The principles of thematic mapping and data visualisation.
- Implementation of environmental models using software solutions using GIS.

LEARNING AND TEACHING STRATEGY

Key concepts and theoretical issues will be delivered through a formal mechanism such as lectures, which will allow the students to gain the knowledge applicable to this module. Students will be encouraged to explore these issues during tutorials and apply them to appropriate case studies pertaining to GIS and its use in environmental planning and modeling. The development of workable solutions to problems encountered will encourage the student to develop their technical skills in developing practical GIS solutions.

Allocation of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	30	30
Independent learning	70	70
Placement learning		
TOTAL	100	100%

ASSESSMENT

Assessment Component 1 – 100%

Write a research report on current trends in GIS evaluating end users perception of the software and appraise a current major application.

Written report (2,500 words).

In addition a 1 hour formative phase test will be set at the end of the module that the student must pass but the mark will not be a part of the module assessment

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	100%

BIBLIOGRAPHY

Essential

Longley, P, Goodchild, M,
Maguire, D, Rhind, D (2010)
Heywood, I., Cornelius, S. &
Carver, S. (2006)

Geographical Information Systems and Science
Wiley
An Introduction to Geographical Information
Systems, Prentice Hall

Recommended

Daniel, L., Loree, P. & Whitener,
A. (2002)
Halls, P. (2007)

Inside MapInfo Professional, Onward press,

GIS for Ecologists and Environmental Scientists.
Wiley

Milner-Gulland, EJ and Rowcliffe,
(2008)

Conservation and Sustainable Use: A Handbook of
JM Techniques (Techniques in Ecology &
Conservation). Oxford University Press

Journals

- BBC Wildlife
- British Wildlife
- Ecos- Review of Conservation
- The Ecologist
- Fauna and Flora
- Journal of Applied Ecology

- Nature
- Natur Cymru
- New Scientist
- Oryx

Websites

- Mapinfo
- Association of Geographic Information
- Ordnance survey
- Natural Resource Wales
- DEFRA
- Joint Nature Conservation Council

www.mapinfo.co.uk

<http://www.agi.org.uk/>

<http://www.ordnancesurvey.co.uk/oswebsite/>

MODULE CODE: M7X01259
TITLE: Coastal & Marine Management
DATED: 17/07/2014

LEVEL: 7
CREDITS: 10

JACS CODE: F841 Maritime Geography

AIM(S)

To enable students to assess the importance of integrated management of the coastal and marine, both temporally and spatially from national and international perspectives, whilst evaluating and critically assessing the need for well-preserved, economically viable and ecologically valuable coastal /marine zones.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Evaluate historical and contemporary maritime and coastal development issues including natural and anthropogenic pressures.
2. Assess and review management techniques for effective coastal and marine protection strategies.

INDICATIVE CONTENT

- Classification, definition and evolution of coastal environments and landscapes.
- Global warming and sea level rise.
- Shoreline Management, designations, partnerships, strategies, Government and NGO's.
- Marine Protected Areas and marine management strategies, no-take zones
- Methods of assessing coastal environments e.g. Function Analysis, Scenic Assessment using fuzzy logic mathematics, and litter management.
- Effects and consequences of anthropogenic activities in the coastal zone, e.g. commercial, industrial and residential development, agriculture and aquaculture, recreation, waste disposal, conservation, military and strategic (Ketchum)
- Coastal defense - "Hard" and "Soft" engineering approaches - effects and consequences.

LEARNING AND TEACHING STRATEGY

The module will be delivered using an array of teaching methods, from lectures and seminars to practical site visits and guest lectures. Students will critically analyse papers on coastal and marine management issues and themes in assessed seminars and will be required to evaluate two chosen paper under examination conditions. Paper 1 from a selection provided by tutors. Paper 2 selected by students within specified criteria and agreed by tutors. Papers are selected/agreed based on learning outcomes. Both papers are presented in tutorials and formative assessment is provided.

Allocation of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	30	30
Independent learning	70	70
Placement learning		
TOTAL	100	100%

ASSESSMENT

Assessment Component 1 – 100%

Examine pressures and priorities from natural and anthropogenic sources and produce appropriate management responses.

Evaluate and appraise the success/failings/challenges of designating and maintaining integrated management.

2 hour examination (seen examination)

Assessment Summary

Activity type	Percentage
Written exam	100%
Coursework	
TOTAL	100%

BIBLIOGRAPHY

Essential

- Benoit, G., Comeau, A. (2005). A Sustainable Future for the Mediterranean: The Blue Plan's Environment and Development Outlook. Earthscan, London.
- European Commission (2012) Life and coastal Management. EU.
- Jones, A.L. & Phillips, M.R (2009) Disappearing destinations: climate change and future challenges for coastal tourism. CABI.
- Claudet, Joachim. (2011) Marine Protected Areas: A Multidisciplinary Approach, Cambridge University Press, 377.
- Pranzini, E. & Williams, A. (2013) Coastal erosion and protection in Europe. Routledge: London.
- Williams, A.T. & Micallef, A. (2009) Beach Management: Principles and Practice, Earthscan.

Recommended

- | | |
|---|---|
| Carter, R.W.B. (1999) | Coastal Environments, Academic Press. |
| EU (2010) | Science for environmental policy: Special issue Coastal Management, DG Environment. |
| Holland, D., Sanchirico, J. (2010) | Economic Analysis for Ecosystem-Based Management: Applications to Marine and Coastal Environments. Routledge: London. |
| Hoyt, E (2011) | Marine Biology: Function, Biodiversity and Ecology. Oxford University Press. |
| Levinton, JS (2010) | Marine Biology: Function, Biodiversity and Ecology. Oxford University Press. (3 rd ed.) |
| Masselink, G., Hughes, M. & Knight, J. (2011) | Introduction to coastal processes and geomorphology. Routledge: London. |
| McFadden, L. (2010) | Coastal hazards and vulnerability. Routledge: London. |
| McGuire, C.J. (2013) | Adapting to SL rise in coastal zones. Routledge: London. |
| Mohammed, E.Y. (2013) | Economic incentives for marine and coastal conservation. Routledge: London. |

Journals

Journal of Coastal Conservation
Journal of Coastal Research
Journal of Environmental Management
Ocean and Coastal Management
Science Direct (on-line)
Shore and Beach
Tourism Management
Marine Policy
Cetacean Management
Journal of Fish Biology
Limnology and Oceanography
Marine and Fresh Water Research

Websites

Australian Marine Conservation Society.
<http://www.amcs.org.au/issues/acts/htm/fcmpa.htm>.
Cetacean Research and Rescue Unit.
Coastal Guide to Europe. [Http://www.coastalguide.to](http://www.coastalguide.to)

DEFRA. <http://www.defra.gov.uk/environment/marine>
www.eucc.co.uk

Marine Biological Association homepage.

<http://www1.npm.ac.uk/mba>

Marine Conservation Society.

<http://mcsuk.mcmail.com/index.html>.

Marine Life Information Network (MarLIN)

www.marlin.ac.uk

<http://www.peak.org/mageet/tkm/ecolenv.htm>

Plymouth Marine Laboratory homepage.

<http://www.npm.npm.ac.uk>

<http://www.loicz.org/>

Land-Ocean interactions in the coastal zone LOICZ

<http://www.coastal.udel.edu//coastal.html>

Coastal Engineering Delaware

<http://www.unesco.org/csi/>

Sustainable Development in Coastal Regions

<http://www.netcoast.nl/projects/netcoast/contact/contact.htm>

Netcoast

<http://sicommoef.in/>

Society for Integrated Coastal Management (SICOM)

<http://ec.europa.eu/environment/iczm/home.htm>

EU coastal programme e.g. Ourcoast

Royal Commission on Environmental Pollution:

Turning the tide- addressing the impact of Fisheries
on the Marine Environment.

<http://www.reep.org.uk>.

UK Marine Biological Association.

<http://www1.npm.ac.uk/mab/OTHERS.Htm>

Whale and Dolphin Conservation Society.

MODULE CODE: M7X01260
TITLE: Habitat Management
DATED: 17/07/2014

LEVEL: 7
CREDITS: 10

JACS CODE: K220

AIM(S)

To critically examine the management of habitats.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Critically evaluate habitat management practices in terms of biodiversity and impact assessment
2. Appraise evidence-based practice: the interface between conservation science, policy and practice

INDICATIVE CONTENT

- Monitoring of habitats e.g. ecological surveys.
- Creation, maintenance and management of habitats.
- Habitat management in practice, volunteers, budgets and funding, health and safety, relevant law.
- Mammal conservation – captive breeding, reintroductions, use of flagship species, ecosystem engineers
- Role of education in conservation and site management
- Ecosystem management vs species specific management
- Creation of habitat management plans

LEARNING AND TEACHING STRATEGY

The module will be delivered using an array of teaching methods, from lectures and seminars to practical site visits and guest lectures. Typically students are taken to a managed site such as Craig y Nos and asked to appraise the existing management strategy, based on documentation provided and surveys carried out during the visit. Some subjects are further developed through student-led tutorials/discussions. There will also be a series of seminars in which students will present reports on various topics on the practice and science of conservation, eg Eradication of Japanese Knotweed in Swansea or Bat Habitat Management.

Allocation of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	30	30
Independent learning	70	70
Placement learning		
TOTAL	100	100%

ASSESSMENT

Assessment Component 1 – 80%

One 2 hour examination

Provide and present an evidence-based appraisal of habitat management strategy.

Assessment Component 2- 20%

Students will be provided with a suggested list of appropriate topics and provide a presentation and lead a discussion, this will be entirely student-driven (30 minute)

Assessment Summary

Activity type	Percentage
Written exam	80%
Coursework	
Practical	20%
TOTAL	100%

BIBLIOGRAPHY

Essential

Ausden, M (2007)

Habitat Management for Conservation: A Handbook of Techniques (Techniques in Ecology & Conservation). Oxford University Press

Milner-Gulland, EJ and Rowcliffe, JM (2008).

Conservation and Sustainable Use: A Handbook of Techniques (Techniques in Ecology & Conservation). Oxford University Press

Sutherland, W.J. and Hill, D.A. (2002)

Managing Habitats for Conservation. Cambridge University Press

White, RE (2005).

Principles and Practice of Soil Science: The Soil as a Natural Resource. Blackwell Science

Recommended

Alexander, M. (2007)

Management Planning for Nature Conservation: A Theoretical Basis & Practical Guide: A Theoretical Basis and Practical Guide. Springer

- | | |
|---|---|
| Caughley, G and Gunn, A. (1996) | Conservation Management: Theory and Practice. Blackwells |
| Caughley, G. and Sinclair, A.R.E. (2006). | Wildlife Ecology and Management. Blackwells |
| Day, J.C. and Symes, N. (2003) | A Practical Guide to the restoration and management of lowland heathland (RSPB Management Guides) Royal Society for the protection of Birds |
| Kirby, P (2013). | Habitat Management for Invertebrates. RSPB |
| Starr, C. (2013) | Woodland Management: A Practical Guide (2 nd Edition) The Crowood Press Ltd |

Journals

BBC Wildlife;
 British Wildlife;
 Ecos- Review of Conservation;
 The Ecologist;
 Fauna and Flora;
 Journal of Applied Ecology;
 Nature;
 Natur Cymru;
 New Scientist;
 Oryx

Websites

<http://naturalresourceswales.gov.uk/>

<http://www.butterfly-conservation.org.uk>

<http://www.defra.gov.uk/>

<http://www.english-nature.org.uk/>

Joint Nature Conservation Council.
[Http://www.jncc.gov.uk](http://www.jncc.gov.uk) National Biodiversity

Network Gateway. [Http://www.nbn.org.uk](http://www.nbn.org.uk)

RSPB. [Http://www.rspb.org.uk](http://www.rspb.org.uk)

UK Biodiversity Group. [Http://www.kbap.org](http://www.kbap.org)

Woodland Trust.
[Http://www.woodlandtrust.org.uk](http://www.woodlandtrust.org.uk).

MODULE CODE: M7X01261
TITLE: The Workplace Environment
DATED: 17/07/2014

LEVEL: 7
CREDITS: 10

JACS CODE: K220

AIM(S)

This module aims to provide students with knowledge of the current trends applicable to working environments. Environmental conservation is equally important in the internal work place as much as the outside working environment. The module will allow students to explore, in depth, current significant issues relevant to working environments.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Critically evaluate current significant challenges relevant to the working environment.
2. Academically explore different working environments and critically appraise their appropriateness for a range of working activities.

INDICATIVE CONTENT

- The impact work practices and workplaces have on management.
- The importance the supporting services have in providing the appropriate environment.
- The building structure.
- Indoor and outdoor environments.
- Workplace design.
- Greening the workplace.
- Psychology and the workplace

LEARNING AND TEACHING STRATEGY

Formal lectures supported with appropriate tutorials will form the main delivery of this module. Students will be encouraged to support these methods with self-study. Some tutorial work will provide the framework for students' private study. During the tutorials students will have the opportunity to raise key issues that challenge some of the principles laid down in the lectures thus ensuring the foundation for reinforcing the learning process. In addition visits to working environments, case studies and guest lectures will add value to students' learning.

Allocation of teaching, to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	30	30
Independent learning	70	70
Placement learning		
TOTAL	100	100%

ASSESSMENT

Assessment Component 1 – 100%

This module is assessed via an essay type assignment of 3000 words maximum. Typical exemplars of such work include:

- Evaluate via case studies the efficacy of different working environments.
- Investigate the role of technology in solving the challenges of workplace design.
- Society is ever changing; technology is rapidly changing too. How can sustainability be incorporated into our civilisation under these conditions?

(Essay 3,000 words)

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	100%

BIBLIOGRAPHY

Essential

Edwards, B. Ed. (2001).

Tabb, P.J. (2014)

Day, A., Kelloway, E.K., & Hurrell, J. (2014)

Green Architecture, Wiley-Academy

The greening of architecture. Ashgate: Abingdon

Workplace Well-being: How to Build Psychologically Healthy Workplaces, John Wiley & Sons Ltd.

Recommended

Workplace Law Group (2011)

Wolverton, B., C. & Meeus, C. (2008)

Birkeland, J. (2002)

Health and Safety, Premises and Environment Handbook, Kogan page

How to Grow Fresh Air: 50m Houseplants that Purify Your Home or Office, Penguin Group

Design for Sustainability, Earthscan

Clements-Croome, D. Ed. (2004)

Intelligent buildings: Design, Management and Operation, Thomas Telford Ltd.

Moughtin, C., with Shirley, P

Urban design: Green dimensions. Architectural Press.

(2005)

Roaf, S. Crichton, D., Nicol, F.
(2005)

Adapting Buildings and Cities For Climate Change,
Architectural Press.

Wigginton, M., Harris, J. (2004)

Intelligent Skins, Architectural Press

Journals

Ends

Green Futures

Resource

Building for a Future

Websites

<http://www.info4education.com>

www.endsreport.co.uk

www.defra.gov.uk

www.environment-agency.gov.uk

www.newbuilder.co.uk

MODULE CODE: M7X01262
TITLE: Work Based Critical Reflection
DATED: 17/07/2014

LEVEL: 7
CREDITS: 20

JACS CODE: K220

AIM(S)

The aim of this module is to develop a critically reflective approach to work, by experiencing postgraduate concepts, in the context of conservation. By virtue of the work experience and assessment regime, the student will be expected to articulate how theories and concepts studied within the programme can be critically applied to their work environment. Moreover, the reflective nature of the assessment will focus upon the analytical development of personal, academic and professional skills.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Evaluate and synthesise the applicability of a range of theories, concepts and ideas to a specific work environment.
2. Critically review the linkages between theory and practice.
3. Apply and give an intellectually detailed appraisal of a range of concepts to tasks within the environmental conservation work setting.

INDICATIVE CONTENT

The content will be context sensitive. However, generic skills such as working within organisations, teams, deadlines and time management will be reflectively assessed. Critical appraisal and thinking will need to be demonstrated throughout the module. This should be achieved through a critical review of contemporary literature and an assessment of its application to the working environment.

LEARNING AND TEACHING STRATEGY

All students opting for this module will need to enrol and attend an additional module in the first 4 weeks of semester 1. If a working contract is not suitably presented within this time frame the students will be withdrawn from the module and will complete the additional module. They can also complete this additional module if they wish but this will reduce their credit requirements for semester 2. **Hence it is important the student considers these implications of undertaking this module.** Any part 1 elective module can be substituted.

This modules contact hours is mainly in a supervisory capacity. The initial part of the module will involve some background lectures and tutorials from which individual learning contracts will be developed. The Learning contract is designed to negotiate how the modules Learning Outcomes are to be achieved, the evidence required to achieve the outcomes and the assessment criteria. The contracts will have formative feedback and final signatory and will need to include a Health and Safety/ Risk Assessment. If a contract is not agreed within 4

weeks of the initiation of the module the student will be withdrawn from the module and will not be assessed.

It will be the student's responsibility to regularly inform tutor of developments via email or writing (at least once a month) and this will be the basis of the remote support network. The tutor will also contact the student and manager to have formative discussion on evidence gathering for assessment. In addition, the student will be expected to present and have a viva on the portfolio presented. A student would be expected to base this work on at least 40 full days work and 170 hours private study which should include a literature review of current research in the field.

Allocation of teaching, to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	30	15
Independent learning	70	35
Placement learning	100	50
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 70%

Based on the Learning Contract. The contract is formative but will include an agreed assessment scheme which means no contract equals no assessment. Furthermore a formative work based learning Pecha Kucha proposal will be presented to the employer/supervisor (10 slides 30 seconds each). Summative assessment is in the form of a 3,000 word reflective journal supported by portfolio/Appendices of evidence.

Assessment Component 2 – 30%

Review to a high intellectual standard the relationship between theory and practice
30 minute viva to a panel of at least 3 suitably qualified staff (Representatives from industry would be encouraged).

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	70%
Practical	30%
TOTAL	100%

BIBLIOGRAPHY

Essential

- | | |
|---|--|
| Billet, S. & Henderson, A. (2011) | Developing learning professionals: Integrating experience in University and practice settings Springer |
| Cairns, L., Evans, E., Malloch, M. and O'Connor, B. (Eds.) (2010) | The SAGE Handbook of Workplace Learning, London: Sage Publications Ltd. |

Recommended

- | | |
|---|---|
| Fanthome, C. (2004) | Work placements: a survival guide for students
Basingstoke: Palgrave |
| Cooper, L. (2010) | Work Integrated Learning, Abingdon: Routledge |
| Costley, C., Garnett, J. and
Workman, B. (eds.) (2009) | Work Based Learning: Journeys to the Core of Higher
Education (Management, Policy and Education),
Middlesex University Press |
| Laycock, M. (2003) | Notes for guidance on work: related learning London:
SEEC |
| Moon, J. (1999) | Learning journals: a handbook for academic, students
and professional development London: Kogan Page |
| Stenström, M. and Tynjälä, P.
(eds.)(2010) | Towards Integration of Work and Learning: Strategies
for Connectivity and Transformation. 2 nd Ed. Dordrecht:
Springer Science & Business Media V.B. |

Journals

Journal reading for theory will be context specific and therefore too numerous to identify here, but would be covered by other modules.

Websites

British Council
Directgov
European Commission
National Work Placement Exhibition (1st Nov. 2012 NEC)
Total Professions
Work placement (grad jobs)

MODULE CODE: M7X01263
TITLE: Dissertation
DATED: 06/11/2014

LEVEL: 7
CREDITS: 60

JACS CODE: K220

AIM(S)

This module aims to provide students with the supervision to carry out and present an element of independent academic research linked to environmental conservation.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Identify, develop and define a research aim for a chosen area
2. Critically formulate a series of objectives/hypotheses and devise strategies to support these
3. Undertake a critical literature review and complete a comprehensive research investigation which contributes to knowledge
4. Analyse and evaluate the research finding in the form of an academically written dissertation to a postgraduate level
5. Academically defend the research investigation to an academic panel

INDICATIVE CONTENT

The dissertation is an essential part of the degree; it is the culmination of the Master's programme. As such, it has been designed and conceived as an integral part of the programme. Preparation for the dissertation begins early in the programme, and students acquire analytical and other research skills throughout it. The formal and informal assignments throughout the programme in Part I should help underpin and enhance the student's ability to undertake research.

- Formulation and rationale for suitable postgraduate research objectives/hypotheses
- Application of an appropriate methodology for the investigation
- Critical review of appropriate literature within a conceptual/theoretical framework
- Determination of experimental results
- Critical appraisal of the results/solutions of the investigation
- Oral/visual critique and presentation of the results of the investigation
- Written critique of the research in the form of a Dissertation

- Verbal defence of dissertation

LEARNING AND TEACHING STRATEGY

Sample of previous Dissertation titles to indicate topics:

- An investigation into current knowledge levels for the disposal of biodegradable plastics and bioplastics - *Sarah-Rhiannon Wathen*
- An assessment of the efficiency of existing marine nature reserve networks : A case study of Welsh territorial seas - *David Redmond*
- An evaluation into the packaging efficiency of engine components
- An investigation into the feasibility of implementing constructed wetlands for treating principle Tamil Nadu industrial Wastewater - *Muralidharan Srinivasan*
- Sustainable communities: An assessment of the opinions of Llangyfelach residents - *Delyth Higgins*
- An assessment of Llanelli's Millennium Coastal park - *V. A. Powell*
- Risk analysis of building compliance within primary health care
- A case study of the building performance of an industrial stores office before and after relocation
- A photographic preference study of Coed Morgannwg wind turbines - *K. L. Rimmer*
- Coastal processes influencing the evolution of a Headland Bay beach, Tenby - *T. Thomas*
- Impacts of soil contamination on tree growth and vitality at a reclaimed coal mine site - *Joanna Harvey*
- An analysis of the EF methodology: Sustainable strategies for camping, Gower - *A. L. Lewis*
- Attitude analysis of paper documents with a practising office environment
- The effect of austerity cuts to building maintenance budgets impacting on the asset and the occupant
- An investigation into the application of plants on the wellbeing and productivity of the employee within the office working environment and their effect on the internal climatic conditions
- The role of practical environmental conservation for positive mental health – *L. J. Davies*
- An analysis of SL trends in the Bristol Channel - *S. Crisp*
- A study of the water quality of the River Neath and tributaries through biological assessment and macro-invertebrate sampling – *D. Thomas*
- An Investigation into Persistent Marine Debris along the Strandlines of Selected Gower Beaches – *K. Tate*
- Micro-sized firms and CSR: An environmental assessment - *L. Lewis*

Allocations of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	15	3
Independent learning	585	97
Placement learning		
TOTAL	600	100%

ASSESSMENT

Process

- Assessment will be carried out by two independent internal examiners (not the supervisor)
- The aggregate will be the final mark after a meeting between the two examiners
- A third marker will be included in the case of a disagreement and possibly a fourth, usually the Faculty Research Officer or Dean
- The external examiners will also be asked to arbitrate in such situations
- After the dissertations have been marked ALL students present their work via a viva voce
- The combined mark between the two elements is the final mark
- In order to pass this module and the Masters, a minimum of 40% must be obtained
- Assessment will be based upon the student's aptitude for research and performance throughout the research programme

Primary data collection is a prerequisite of a successful dissertation.

Assessment Component 1 – 80%

Structure the dissertation in accordance with academic requirements.

Present and report logically and coherently the results of the research.

(15,000 words)

Assessment Component 2 – 20%

Defend the dissertation to a high academic standard via a viva voce

Assessment Summary

Activity type	Percentage
Written	
Coursework	80
Practical	20
TOTAL	100%

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Here it is expected that all students will select, with approval, a research topic conducive to sustainability.	

BIBLIOGRAPHY

Refer to research methods module

MODULE CODE: M7X01366
TITLE: Building Information Management Systems
DATED: 06/11/2014

LEVEL: 7
CREDITS: 20

JACS CODE: I200 / I210

AIM

- To enhance and develop professional skills in the improved delivery of the overall sustainable construction project using Building Information Software as a design and production tool

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Understand how following its strategic integration the industry will develop in a Building Information Management (BIM) enabled future
2. Use Building Information Software (BIS) to plan, cost and execute the design of more efficient, sustainable and buildable projects
3. Critically evaluate and monitor interdisciplinary collaborative design and production in terms of time, cost and an oriented sustainable product

INDICATIVE CONTENT

- BIM implementation strategies. The benefits of BIM, as opposed to the inefficiencies of traditional approaches. The potential impacts and future trends of BIM-enabled design, construction and operation. Implications of the 2016 deadline.
- BIM-enabled integrated project delivery (IPD) – planning, cost, sustainability, functionality and aesthetics in design and constructability. The requirements, challenges and benefits of whole team collaboration and information sharing. Industry standards and legal implications.
- Design and management of effective work flow in BIS-enabled projects.
- The use of BIS to enable sustainable design, improve waste management, material choice, energy and thermal efficiencies. The integration of BREEAM and LEED assessment into BIM to resolve design problems, utilising appropriate software in collaborative design practice.
- Model design platforms and tools. The BIM design package, design choices, data sharing and merging, clash detection, cost estimating, production planning.

LEARNING AND TEACHING STRATEGY

Lectures will introduce the students to the concepts, principles and practices of the integration of BIM and other software packages into the industry. Tutorials will introduce practical examples, which will be used to support the application, discussion, and critical evaluation of modelling techniques learned. Case studies will be used to develop understanding and application of these techniques. Practical classes and workshops will provide access to BIM software platforms and tools for development of design models and experience of IPD scenarios.

Allocations of teaching to deliver the module are:

Activity type	Hours	Percentage
Scheduled learning	60	30
Independent learning	140	70
Placement learning		
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 25%

Written Coursework – 1,500 words

Exemplar

The question will require students to:

- Appraise the development and integration of BIS within the student's chosen field of study
- Critically analyse and evaluate the different facets of organisational behaviour to demonstrate how BIS will influence policies, procedures and processes adopted by the organisation.

Assessment Component 2 – 75%

Of which: Design Project = 50% (4,000 words max) and Presentation = 25% (10 min max)

Personal Design Project

The assessment will involve creating and using an intelligent 3D software model to inform and illustrate a student-conceived sustainable design project.

Design, visualization and simulation will be enabled by a range of architectural, environmental modelling software. The personal design project will require students to design, cost, plan and construct an innovative sustainable building project.

In completing the design project, students are encouraged to use their initiative and wherever possible, introduce and implement new initiatives for sustainable design and construction. The project will develop the student's awareness of commerce and sustainability in design and production.

The presentation of the work will require the student to demonstrate an in-depth knowledge and comprehension of the wide ranging issues related to BIM design and integration.

Assessment Summary

Activity type	Percentage
Written	
Coursework	75
Practical	25
TOTAL	100%

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Information technology is now prominent in all major construction activities. The drive to meet sustainable practices is being achieved via innovations in technology as much as construction practices. Such development makes for a more effective and efficient end result that meets the need of sustainability.	

BIBLIOGRAPHY

Essential

- Smith, D. K. and Tardif, M. (2009) *Building Information Modelling: A Strategic Implementation Guide for Architects, Engineers, Constructors, and Real Estate Asset Managers.* Wiley
- Eastman, C., Teicholz, P., Sacks, R. and Liston, K. (2011) *BIM Handbook: a Guide to Building Information Modelling for Owners, Managers, Designers, Engineers and Contractors.* Wiley
- Vandezande, J., Krygiel, E., & Read, P. (2013) *Mastering Autodesk Revit Architecture 2014.* Autodesk Official Press, Wiley

Recommended

- | | |
|----------------------------------|--|
| Richards, M. (2010) | <i>Building Information Management - A Standard Framework and Guide to BS 1192.</i> BSI |
| Crotty, R. (2011) | <i>The Impact of Building Information Modelling: Transforming Construction.</i> Routledge |
| Garber, R. (2014) | <i>BIM Design: Realising the Creative Potential of Building Information Modelling.</i> Wiley |
| Kibert, C. J. (2012) | <i>Sustainable Construction: Green Building Design and Delivery.</i> Wiley |
| Winch, G. M. (2009) | <i>Managing Construction Projects.</i> Wiley-Blackwell |
| British Standard 1192: 2007 | <i>Collaborative Production of Architectural, Engineering and Construction Information Code of Practice</i> |
| British Standard PAS 1192-2:2013 | <i>Specification for Information Management for the Capital/Delivery Phase of Construction Projects using Building Information Modelling</i> |
| Krygiel, E. and Nies, B. (2008) | <i>Green BIM: Successful Sustainable Design with Building Information Modelling.</i> Wiley |
| Hardin (2009) | <i>BIM and Construction Management - Proven Tools, Methods, and Workflows.</i> Wiley |

Journals

Building
Building for the Future
Building Sciences

Websites

Computer Laboratory with Internet access

RICS

www.buildingsmart.com

www.breeam.org

www.bimjournal.com

www.wbdg.org

MODULE CODE: M7X01367
TITLE: Construction Technologies – Past and Present
DATED: 06/11/2014

LEVEL: 7
CREDITS: 20

JACS CODE: K200

AIM(S)

- To generate knowledge and understanding of the design, construction and evolution of our traditional building stock and provide a vehicle for 'Learning from the past to aid future generations and societies
- To critically review the performance of buildings and facilities in use identifying facets that can enhance future use

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Evaluate how past and present technologies can inform decisions for future design and construction
2. Critically analyse and appraise existing developments and settlements making recommendations that can enhance their sustainable performance
3. Coherently present findings on past and present technologies in a clear, well-structured format to a peer group

INDICATIVE CONTENT

- Awareness and understanding of the context of traditional sites and settlements, and how their development interacted with and made use of natural resources and environments in order to aid habitation
- Evolution of building form and technique through the centuries. Analysis of form, function and materials from ancient civilisations to the present day
- Learning from the past
- Vernacular building typologies (both rural and industrial)
- Conservation Philosophies and Principles; International Charters; Sustainability
- Statements of significance and conservation management plans
- Building materials development and the impact of transportation
- The organisation of construction production from the medieval craft guilds to international contracting

- Approaches to the maintenance and retrofit of facilities. Use of the STBA green wheel. Whole life-cycle management of the asset/facility
- Climate change and its impact upon existing built assets
- Ecology and built environment habitats
- Natural building technologies. Breathability concepts. Low carbon, low cost, low energy, technologies

LEARNING AND TEACHING STRATEGY

Lectures will introduce the students to the concepts, principles and practices of a range of construction methods. Tutorials and seminars will introduce practical examples, which will be used to support the application, discussion, and critical evaluation of techniques learned. Case studies will be the basis on which understanding and application of the techniques is based. The mode of delivery will focus on a number of field trips and guest lectures by experts in the field.

Allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	60	30
Independent learning	140	70
Placement learning		
TOTAL	200	100 %

ASSESSMENT

Assessment Component 1 – 60%

Poster and presentation - 3,600 word equivalent

Exemplar

Discuss with the aid of suitable case studies and academic literature, whether the conservation of historic buildings as currently perceived by international bodies such as UNESCO and ICOMOS is truly sustainable.

Provide your response in the form of an academic poster suitable for exhibiting at a Heritage Conference. The poster is to be designed with clear annotations and illustrations and placed on a single sheet of A1 or A0 mounting board. (3,600 word equivalent)

Present your findings to a convened audience of Faculty staff, students and invited guests.

Assessment Component 2 – 40%

Written Coursework - - 2,400 words

Exemplar

Select a suitable traditional building for case-study analysis, researching and describing its development and evolutionary change over time. Evaluate the risks and challenges that the structure faces, and recommend a strategy for its maintenance, conservation and continuing use.

Your response should include appropriate images, sketch plans etc. (2,400 words)

Assessment Summary

Activity type	Percentage
Written	
Coursework	40
Practical	60
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Cultural and heritage developments from the past continue to hold empirical evidence to demonstrate use of resources; in essence early ideas of sustainable practices. This module draws on these ideas in preparing students to consider the challenges in moving forward to meet tomorrow's demands.	

BIBLIOGRAPHY

Essential

- Groak, S. (1992) *The Idea of Building: Thought and Action in the Design and Production of Buildings*. E & FN SPON
- Brand, S. (1994) *How Buildings Learn*. Viking Press. ISBN 978-0-670-83515-7
- Bryan, T., (2010) *Construction Technology: Analysis and Choice*

Recommended

- Hollis, M. (2005) *Surveying Buildings*. RICS Surveyors Publications. 5th Edition. ISBN 9781842191927.
- Watt, D. S. (2007). *Building Pathology*. Publisher: Blackwell Publishing ISBN: 9781405161039.

Alexander, C. (1997) *A Pattern Language: Towns, Buildings, Construction*. Oxford University Press.

Chudley, R., Greeno, R. (2013) *Building Construction Handbook*

Background

The official guidance publications of ICOMOS, CADW, Historic Scotland and English Heritage. Full details to be advised in Lectures.

Journals

Journal of Architectural Conservation, Routledge, UK.

Journal of Building Pathology and Refurbishment

<http://www.emeraldgrouppublishing.com/products/journals/journals.htm?id=ss#>

Building Conservation Journal, RICS, UK.

Context: *The journal of the Institute of Historic Building Conservation*. Publisher: IHBC, UK.

Websites

Building Conservation Directory: Accessed at: <http://buildingconservation.com>.

This long-established portal contains numerous papers written by experts that address the underlying case material.

You Tube: Brand, S. (1998) - How Buildings Learn

A six-part BBC 2 documentary video series which is intended for public domain use and openly accessible via the internet.

MODULE CODE: M7X01368
TITLE: Energy Performance Strategies
DATED: 06/11/2014

LEVEL: 7
CREDITS: 20

JACS CODE: H221

AIM(S)

The aims of this module are to provide students with the ability

- to assess the energy efficiency of the built environment and the environmental impacts sustained via the developments construction and operational stage
- to develop new ways of thinking that will help explore, in-depth, previous and current significant issues appropriate to conserving and generating electricity, energy management strategies, policy and legislative controls
- to develop a more intelligent approach that will allow for informed decisions concerning the effects unbalanced energy use patterns will have on societies

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Evaluate potential methods of energy generation, such as Energy from Waste, Anaerobic Digestion, "fracking", alternative nuclear generation etc.
2. Analyse present policies for their ability to address fuel poverty and other societal disparities, including the ICE's Route Map for a Low Carbon Construction Industry
3. Consider the possibilities of global electricity generation and the application of Smart Grids
4. Evaluate energy efficiency as a method of reducing energy demand and carbon emissions

INDICATIVE CONTENT

- Cultural and political divides
- The management of energy and its relationship to waste treatment, i.e. Energy from Waste and Anaerobic Digestion
- Consumptive patterns for fossil fuel demand and related environmental pollution

- Interactions between environmental and economic concerns
- The concept of sustainable consumption and production and how this impacts on renewable energy sources
- Economic and environmental factors and costs relative to energy issues
- Strategies that enforce decisions on energy deliverables

LEARNING AND TEACHING STRATEGY

Formal lectures will form the core of this module's delivery, where key issues surrounding the complex nature of renewable energy will be explored. Students will also have the opportunity to experience first-hand various methods of waste treatment processes inclusive of EfW during visits to recycling plants, all of which will help to reinforce learning.

The allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	60	30
Independent learning	140	70
Placement learning		
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 100%

Students will be required to produce a single formal report of 5,000 words on an energy-related topic.

Exemplar

Examine the different sources of renewable energy generation, and analyse comparative costs to the consumer as well as potential carbon savings that the technology provides. Include in your report a comparative analysis between nuclear power and gas powered generation.

Assessment Summary

Activity type	Percentage
Written	100%
Coursework	
Practical	
TOTAL	100%

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The emphasis here is reduction in the demand for scarce resources; the module captures the challenges afforded to low carbon development and energy performance of buildings, key issues within the sustainability debate.	

BIBLIOGRAPHY

Essential

- Boyle, G. (2012) *Renewable Energy: Power for a Sustainable Future (3rd Edition)*. Oxford University Press
- Czisch, D. G. (2011) *Scenarios for Future Electricity Supply*. Stevenage, IET.
- Letcher, T. M. (2008) *Future Energy*. Cambridge Elsevier.
- MacKay, D. J. C., (2008) *Sustainable Energy without the Hot Air*. Cambridge, UIT.
- Twidell, J., and Weir, T (2006) *Renewable Energy Resources (2nd Edition)*. Oxford, Taylor and Francis.

Journals

Considering the nature of this module, journals are more appropriate for sourcing information as technology is rapidly evolving

Renewable and Sustainable Energy Reviews, Elsevier

Renewable Energy, Q Magazines

Renewable Energy Foundation

New Scientist

Scientific American

BP Statistical Review

Parliamentary Energy Reviews

Energy White Paper

Websites

<http://www.cibse.org>

<http://www.ieee.org>

<http://www.bre.org>

<http://www.defra.gov.uk>

<http://www.ref.org>

<http://www.iea.org>

<http://www.bwea.org>

MODULE CODE: M7X01369
TITLE: Future Proofing Construction
DATED: 06/11/2014

LEVEL: 7
CREDITS: 20

JACS CODE: K200

AIM(S)

- To generate advanced knowledge of the design and construction techniques that may assist future generations and societies
- To critically review the performance of buildings and facilities identifying features that can enhance use

LEARNING OUTCOMES

Upon successful completion of this module, the student should be able to demonstrate the ability to:

1. Critically examine how future built environment habitats will evolve and develop, using materials and forms of construction
2. Develop the design and construction of more efficient, sustainable and buildable projects through the use of advanced building technologies
3. Judgementally review and evaluate new and refurbishment case-study projects, making recommendations that enhance their performance in use

INDICATIVE CONTENT

- Learning buildings. Phase changing building materials and structures; Biomimicry
- Robotics
- Passive building design methods, sustainable building technologies, thermal and acoustic mass
- Consideration of: long life, loose fit, low energy concepts. Flexibility, sustainability and obsolescence
- Designing for the users. Accessibility, inclusive environments
- Multi-use adaptable facilities, Useable buildings and concepts such as: site, shell/skin, services, structure, scenery, sets, spaces and synthesis
- Construction of high-rise built facilities and the impact on city planning, habitats and societal interaction
- Intelligence as applied to construction; high performance envelope, fabric claddings and façades

- Introduction of modern urban infrastructure into redevelopment sites nationally and internationally, such as: Docklands, Salford Quays, SA1, second and third world cities and ghettos. Learning from experiences and implementing schemes such as High Speed 2, Cross-rail 2 and 3, cycle tracks, monorails, airports, highways, IT backbones etc.
- Brownfield remediation and potential risks to healthy living
- Future spaces and places for people. Qualitative and quantitative analysis
- Waste as a resource; deconstruction
- Natural building technologies. Low carbon, Low cost, low energy technologies
- Modular construction. Pods, Modern Methods of Construction (MMC). Advanced / fast-build concepts, Sky City
- Potential future directions for work, rest and play within advanced and developing nations

LEARNING AND TEACHING STRATEGY

Lectures will introduce the students to the concepts, principles and practices of future proofing construction. Tutorials and seminars will introduce practical examples, which will be used to support applications, discussion, and critical evaluation of techniques learned. Case study analysis and site visits will develop awareness understanding and clear thinking.

Allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	60	30%
Independent learning	140	70%
Placement learning		
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 50%

The module offers students to flexibility to examine what tomorrow's technology might bring based on current knowledge and understanding.

Exemplar

As a construction design team provide a critical review of an urban development/built facility, and make recommendations as to how this might change over the next fifty years. Your response should be in the form of a group (max of 3) presentation (24 mins) inclusive of portfolio of sketches with supporting text, photographic images, video of typically no more than 2000 words / group member. Submissions must be suitably structured, demonstrate evidence of active learning, be appropriately argued and referenced. (50%)

Assessment Component 2 – 50%

2 hour examination (50%)

Assessment Summary

Activity type	Percentage
Written	50%
Coursework	50%
Practical	
TOTAL	100%

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The module allows students to critically examine the challenges of using and managing scarce resources in meeting the demands for future development. A large part of this process inevitably involves sustainable processes and practices.	

BIBLIOGRAPHY

Essential

Trubiana, F. (Ed.) (2012) *Design and Construction of High-Performance Homes: Building Envelopes, Renewable Energies and Integrated Practice*. ISBN: 9780415615280.

Pawlyn, M. (2011) *Biomimicry in Architecture*. RIBA Publishing. ISBN: 9781859463758.

Recommended

Fenner, R. A., and Ainger, C. (2013) *Sustainable Infrastructure: Principles into Practice*. ICE Publishing.

Clements-Croome, D. (2013) *Intelligent Buildings Design, Management and Operation*. Thomas Telford

Sertyesilisik, B. and Al Shamma'a, A. (2013) *The Sustainable Built Environment: Technical, Managerial, Legal and Economic Aspects* Palgrave MacMillan ISBN: 9780230314443

- | | |
|---------------------------|--|
| Barlow, S. | <i>Guide to BREEAM</i> . RIBA Publishing
ISBN: 9781859464250 |
| Prasad, S. (March, 2014) | <i>Retrofit for Purpose: Low Energy Renewal of Non-Domestic Buildings</i> . RIBA Publishing
ISBN: 9781859465141 |
| Leeds City Council (2011) | <i>Building for Tomorrow Today</i>
Leeds Local Development Plan |

Journals

Blueprint
Architects' Journal
Building

Websites

<http://www.bbc.com/future/story/20140404-new-york-2050-alone-in-the-city>
<http://www.designcouncil.org.uk/our-services/built-environment>. (formerly CABE).
<http://www.designingbuildings.co.uk/wiki/Futurebuild>

Connected, but alone - Tara Isabella Burton.

Fantasies of a future New York

What if we rebuilt New York?

The price of a connected world

The city in 2050 - Bruce Sterling

Challenges for the cities of 2050

Greening the cities of tomorrow

How to make our cities smarter

How to power the urban revolution

The future of urban transport

MODULE CODE: M7X01370
TITLE: Research Methods & Professional Skills
DATED: 06/11/2014

LEVEL: 7
CREDITS: 20

JACS CODE: K220

AIM(S)

- To develop an independent problem-solving approach to research so that students can identify and address skills required for their studies and dissertation
- To develop an independent problem solving approach to self-evaluation so students can identify and address postgraduate skill and employability needs

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Self-appraise and address their postgraduate skills base for taught modules;
2. Identify a problem, outline the investigative approach and consider appropriate methods of solution;
3. Evaluate data quality (e.g. sampling methodology), reason (e.g. assumptions, interpreting evidence, recognition of uncertainty) and modify the hypothesis if necessary, and
4. Self-appraise their employability and future skill needs.

INDICATIVE CONTENT

- Identification of required postgraduate study skills
- Employability opportunities, concerns and self-appraisal
- Identify a research problem and formulate hypotheses or objectives
- Sources of information – archives, bibliographic sources, current literature, the internet
- Critical identification and review of research literature
- Experimental design, sampling and interpretive frameworks
- Valid and reliable selection of statistical techniques, parametric and non-parametric testing, correlation
- Data collection techniques e.g. Questionnaire design, Field data etc
- Qualitative analysis

- Developing a proposal – research statements, research outline and design research schedule
- Presentation of results, graphical techniques, referencing and writing-up
- The benefits of research informed knowledge to professional organisations
- Intellectual property – copyright, trademarks, patents
- Career needs and ambitions
- Entrepreneurial opportunities and support

LEARNING AND TEACHING STRATEGY

Students will be taught through lectures and tutorials to develop the theoretical and practical aspects of the module. The lectures will focus on research methods theoretically, and the tutorials will be an opportunity for individual students/ small groups to discuss their research proposals. There will also be guest sessions from personnel in careers and student services departments. Students will also be expected to demonstrate a practical knowledge of BRE through non assessed visits.

Allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	60	30
Independent learning	140	70
Placement learning		
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 50%

Academic research proposal (3,000 words). Published on Moodle, and staff/peer marked

Exemplar

Will be individual to the student's research and can be associated to the dissertation topic.

Assessment Component 2 – 50%

A critically reflective blog of the student's study skills and employability needs. The blog should contain self-assessment, attainment strategies and evidence of attainment. (3,000 words)

Exemplar

Will be in an electronic fortnightly format, and will be specific to the students' needs and reflective critique.

Assessment Summary

Activity type	Percentage
Written	

Coursework	100%
Practical	
TOTAL	100%

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
This research module allows students to select a topic synonymous with sustainable construction.	

BIBLIOGRAPHY

Essential

- | | |
|--------------------------------------|--|
| Fellows, R. F. and Liu, M. M. (2009) | <i>Research Methods for Construction</i> . Blackwell |
| Hughes, J. (2013) | <i>Methods for Policy Research</i> . Sage, London. |
| Farrell, P. (2011) | <i>Writing a Built Environment Dissertation: Practical Guidance And Examples</i> . Wiley-Blackwell |
| Knight, A. & Ruddock, L. (2009) | <i>Advanced Research Methods in the Built Environment</i> . Wiley-Blackwell |
| Naoum, S. (2013) | <i>Dissertation Research and Writing for Construction Students</i> . Butterworth Heinemann |

Recommended

- | | |
|--|--|
| Clark, V. L. P. and Ivankova, N. V. (2015) | <i>Mixed Methods Research</i> . Sage: London
<i>Research Methods in Geography</i> . Blackwell |
| Clemens, R. F. (2015) | <i>Using Social Media for Qualitative Research</i> . Sage: London. |
| Gomez, B. and Jones, J. P. (2010) | |
| Hewson, C., Vogel, C. & Laurent, D. (2015) | <i>Internet Research Methods</i> . Sage: London. |
| Kubler, B. and Forbes, P. (2005) | <i>Student Employability Profiles: A Guide for Employers,</i> |

- | | |
|--|---|
| | Council for Industry & Higher Education |
| Montello, D. and Sutton, P. (2013) | <i>An Introduction to Scientific Research Methods in Geography and Environmental Studies.</i> Sage: London. |
| Silva, E. A., Healey, P., Harris, N., Van den Broeck, P.(2014) | <i>The Routledge Handbook of Planning Research Methods.</i> Routledge: London. |
| Thomson, A. (1996) | <i>Critical Reasoning.</i> Routledge: London. |
| Trought, F. (2012) | <i>Brilliant Employability Skills: How to Stand Out from the Crowd in the Graduate Job Market.</i> Harlow: Pearson Education Ltd. |
| Vaccaro, I, and Smith, E.A. (2010) | <i>Environmental Social Sciences: Methods and Research Design.</i> Cambridge University. |
| Greenburg, K. (2014) | <i>Modern Research Methods for the Study of Behavior in Organizations.</i> Routledge: London. |

Journals

Appropriate to subject matter. Plus:

Organizational Research Methods
Journal of Mixed Methods Research
Facilities Management
Virtual Research Methods (Reference)

Websites

Appropriate to subject matter.

MODULE CODE:	M7X01803
TITLE:	Building Maintenance and Property Asset Management
DATED:	28/08/2014
LEVEL:	7
CREDITS:	20
JACS CODE:	K251

AIM(S)

The aim of this module is for students to develop an understanding of the importance of adopting a pro-active approach to effective asset management principles, procedures and practices. The module will address operational tactical and strategic criteria and generate skills and knowledge of benchmarking, condition and risk-based and lean asset management strategies involved in the effective management of large complex estates, often where multi-tenanted.

LEARNING OUTCOMES:

Upon successful completion of this module, students will be able to:

- 1 develop and critically assess an asset management strategy for a portfolio of premises (*BIFM Competence 7 – Managing Premises*)
- 2 systematically evaluate and manage the estates portfolio to meet the needs of the organisation. Evaluating the possibilities to add value (*BIFM Competence 7 – Managing Premises*)
- 3 develop and critically assess building fabric maintenance strategies and services (*BIFM Competence 9 – Building Fabric Maintenance*)
- 4 Evaluate and apply construction and building pathology principles for the identification and analysis of construction fabric defects (*BIFM Competence 9 – Building Fabric Maintenance*)

INDICATIVE CONTENT:

- Understanding Building Design (*BIFM Competence 8 – Understanding Building Design*)
- Environmental Impact Assessment (*BIFM Competence 14 – Environmental Issues*)
- Building Pathology and the diagnosis of Building Defects (*BIFM Competence 9 – Building Fabric Maintenance*)
- Condition Surveys and Appropriate Repair Methodologies (*BIFM Competence 3.9*)
- Maintenance Planning and Delivery of the Service (*BIFM Competence 3.9*)
- Application of: Quality, Value and Risk Management - within the context of Building Maintenance and Facilities Management (*BIFM Competence 17 – Risk Management*)
- The Development of Facilities Management, Charting Trends within Organisations and Exploring the Potential of these Methods to Contribute to Core Business Efficiency (*BIFM Competence 3 – Developing FM Strategy*)

- Principles of Performance Measurement. Benchmarking, Processes and Facilities Audits (*BIFM Competence 19 – Quality Management*)
- Building and Managing Multi-disciplinary Teams including the role of specialist contractors and consultants (*BIFM Competence 2.63*)

LEARNING AND TEACHING STRATEGY

Methods of delivery will vary according to the nature of the topic, but will be a combination selected from lectures, tutorials/case studies and educational visits. It is essential that considerable background reading is undertaken by the candidate to effectively consolidate the lecture material and handouts.

Allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	50	
Independent learning	140	
Site Visits	10	
TOTAL	200	100 %

ASSESSMENT:

Outcomes will be met by means of a 4000-word investigative report and a 12 minute presentation.

Exemplar

The assignment will involve the student identifying an organisation's portfolio, assessing its physical condition, analysis and the presentation of recommendations for repair/refurbishment and renewal. This will necessitate undertaking research and presenting this to the course team and contemporaries.

Assessment Summary

Activity type	Percentage
Written	
Coursework	66
Practical	34
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes	✓
	No	
Buildings and estate facilities are generally perceived as significant contributors to the global use of energy, generator of carbon emissions and waste. By efficiently managing		

built facilities and assets it offers immense scope to contribute positively to the challenges posed by climate change and the depletion of natural and built resources. This module stresses the importance and opportunities for achieving this by evaluating how assets can be managed and maintained in order to ensure the impact of obsolescence is mitigated.

BIBLIOGRAPHY

Essential

Bell, R. and Harris, J. *Asset Management and Maintenance Audits* (BSRIA, 2012)

Wood, B. *Building Care* (Blackwell, 2003)

Hollis, M. *Surveying Buildings* (Surveyors Publications, 2005)

Alexander, K. *Facilities Management: Theory and Practice* (Spon, 2004)

Background

Procurement of Facility-Related Services - BS 8572:2011 (British Standards Institution, 2011)

BS Guide to Facilities Management (2012)

Maintaining Value (Maintain our Heritage, 2004)

Mitchell, J. S. *Physical Asset Management Handbook* (Clarion Technical Publishers, 2006)

Nicholas, A. and Hastings, J. *Physical Asset Management* (Springer, 2009)

Web / Journal Resources

Premises and Facilities Management

RICS Guidance Documents

RICS White Book

Audit Commission/National Audit Office Publications

MODULE CODE:	M7X01804
TITLE:	Consultancy and Project Management
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K230

AIM(S):

The aim of this module is to combine the processes of consultancy and project management as a means to aid students take a holistic approach to achieving improved, sustainable, timely and cost efficient improvements to benefit themselves, other individuals, organisations and ultimately, economies.

LEARNING OUTCOMES:

On completion of this module the student should be able to:

- 1 critically evaluate the significance of consultancy and project management as a specialism and the positive contribution that it can make as a professional activity in the business context (*BIFM Competence 1 – Understanding the Structure and Behaviour of Organisations*)
- 2 promote, utilise and demonstrate mastery of consultancy and project management skills to advance organisational and individual effectiveness (*BIFM Competence 6 – Working with Suppliers and Specialists*)
- 3 critically analyse and evaluate the human issues and recognise that projects have a sizable creative element that presents a major challenge for the consultant and project manager (*BIFM Competence 4 / 5 – People Management / Communication*)

INDICATIVE CONTENT:

- define the role of the consultant and project manager within an organisation and defend how the role impacts upon the management of human capital and general wellbeing of the firm and all its stakeholders (*BIFM Competence 1/2 - Understanding the Structure and Behaviour of Organisations / Understanding Business and Organisations*)
- judge and appraise the significance of consultancy and project management as a specialism and the potential positive contribution that it can make to aid organisations achieve and sustain competitive advantage (*BIFM Competence 2 - Understanding Business and Organisations*)
- identify the appropriate tools and techniques utilised by the consultant and project manager throughout the different stages of the project process and lifecycle (*BIFM Competence 12 – Project Management*)
- compare and contrast examples of world-class performance in consultancy and project management and to take lessons from these to develop new skills and further understanding (*BIFM Competence 6 – Working with Suppliers and Specialists*)

- design the progression of a project from initial idea to strategy formulation to implementation and ultimately, to the presentation of a persuasive report (*BIFM Competence 12 – Project Management*)
- identify and plan a path to self-improvement in consultancy and project management through reflective review (*BIFM Competence 19 – Quality Management*)

LEARNING AND TEACHING STRATEGY:

The module will be delivered and assessed over one semester. The first weeks will be didactic and led by the module tutor. These sessions will incorporate the teaching of consultancy and project management tools and techniques. During these weeks, students will be formulate and finalise their ideas to submit their project initiation form to the tutor. Students will meet individually with the module tutor to discuss their project initiation form to refine their proposal.

Students will form into groups of up to four, and present their project ideas to each other. During this session, it is essential for students to take an inquisitorial stance and question each other simulating the recruitment of a consultant and project manager to undertake a task in their own organisation.

Late weeks are set aside for individual consultation between module tutor and student to ensure that the student completes their report successfully according to the set criteria.

Throughout the lifetime of their project, students are expected to take considerable responsibility for their own learning and read widely from the literature relevant to their chosen project area.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	30	30%
Independent learning	70	70%
Site Visits	0	0%
TOTAL	100	100%

ASSESSMENT

Presentation of an individual consultancy (15 minutes) and a 1800-word project management report.

Exemplar:

Students will be given scope to 'self-select' a topic area. Usually, students will choose to base the project on an organisation with which they are familiar or which they seek to research or collaborate with. The process of undertaking this consultancy and project report is intended to develop the student's commercial awareness; application capacity; in depth knowledge and comprehension; and presentation and persuasion.

Through completing the assignment, students are further encouraged to use their initiative and wherever possible, introduce and implement new initiatives at work.

Assessment Summary

Activity type	Percentage
Written	
Coursework	60
Practical	40
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Within the context of Property and Facilities, undertaking consultancy and project management roles inevitably involves exposure to and the application of resources in a sustainable manner driven by moral, ethical, economic and legislative pressures.	

BIBLIOGRAPHY:

Essential:

Adair, J. *Effective Strategic Leadership* (Macmillan, 2003)

Baker, S. and Baker, K. *The Complete Idiot's Guide to Project Management - 2nd Edition* (Alpha Books, 2000)

Burnes, B. *Managing Change* (Prentice Hall, 2004)

Carnall, C. A. *Managing Change in Organisations - 4th Edition* (Prentice Hall, 2003)

Currie, D. *Developing and Applying Study Skills* (CIPD, 2005)

Field, M. and Keller, L. *Project Management* (Thomson, 2001)

Gardiner, P. *Project Management: A Strategic Approach* (Palgrave, 2005)

Background:

Goleman, D., Boyatzis, R. and McKee, A. *The New Leaders: Transforming The Art of Leadership into the Science of Results* (Little Brown, 2003)

Johnson, M. *The Independent Consultant's Survival Guide* (CIPD, 2005)

Lambert, T. *High Income Consulting* (Nicholas Brealey, 1997)

Maylor, H. *Project Management – 3rd edition* (Prentice Hall, 2003)

Journals

British Journal of Management

Harvard Business Review

Human Resource Management Journal

Incomes Data Services

IRS Employment Trends

Journal of Management Studies

Journal of Organisational Behaviour

Management Review

Management Today

People Management

Websites:

www.acas.org.uk

www.bprc.warwick.ac.uk/repwinch.html

www.cbi.co.uk

www.cipd.co.uk

www.employment-studies.co.uk

www.eoc.org.uk

www.indsoc.co.uk

www.parliament.uk

www.prince2.com

www.spoce.com

www.statistics.gov.uk

MODULE CODE:	M7X01805
TITLE:	Energy Issues and Concerns
DATED:	28/08/2014
LEVEL:	7 M - Elective
CREDITS:	10
JACS CODE:	H221

AIM(S):

To evaluate current UK primary energy use and to investigate the conservation of primary energy, through the use of renewable technologies. The fundamental reference point of this module is to develop an in-depth understanding of the intricacies of the contemporary energy debate in the UK. From this an assessment of the fundamental issues and resultant concerns will be undertaken to demonstrate the difficulties in proposing and establishing a UK energy policy for the future.

LEARNING OUTCOMES:

On successful completion of this module students will be able to:

- 1 Critically analyse UK primary energy use (*BIFM Competence 14 – Environmental Issues*);
- 2 Evaluate and critically synthesise the potential for renewable technologies within a contemporary and future context (*BIFM Competence 6 – Working with Suppliers and Specialists*)

M Level Requirements in this Module:

- 3 Autonomy within bounds of professional practice. High level of responsibility for self, possibly others
- 4 Has great depth of knowledge in a complex and specialised area and/or across specialised or applied areas.
- 5 S/he may be working at the current limits of theoretical and/or research understanding.

INDICATIVE CONTENT:

- UK Primary energy resources (*BIFM Competence 14 – Environmental Issues*);
- UK primary energy use (*BIFM Competence 14 – Environmental Issues*);
- Mainstream renewable (*BIFM Competence 6 – Working with Suppliers and Specialists*);
- Renewable technologies of the future (*BIFM Competence 6 – Working with Suppliers and Specialists*).

LEARNING AND TEACHING STRATEGY

Formal PowerPoint lectures and the use of VLE (<http://blackboard.sihe.ac.uk>) will be the principal form of delivery for this module. This will be supported by tutorials and three site visits.

ASSESSMENT

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	25	25%
Independent learning	70	70%
Site Visits	5	5%
TOTAL	100	100%

Outcomes will be assessed by the submission of a piece of coursework of 3,000 words in length.

Exemplar

Example title using contemporary journal articles and official literature:

Discuss the long term implications for energy use in the UK, and assess the significance of energy security and renewables

Coursework: 100%

Assessment Summary

Activity type	Percentage
Written	
Coursework	100%
Practical	
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The aims, content and title of this module are entirely consistent with attaining these objectives.	

BIBLIOGRAPHY:

Essential:

Our Energy Future – Creating a Low Carbon Economy (DTI, 2003)

Up to date *UK Energy Sector Indicators*, DTI

J. C. J. M. van den Bergh and Bruinsma, F. R. *The Transition to Renewable Energy* (Elgar: Cheltenham, 2007)

Assmann. D. and Laumanns. U. and Uh, D. *Renewable Energy* (Earthscan, 2006)

Background:

Various Carbon Trust publications (2000 - 2007)

Shorrock, L. D. and Utley, J. I. *Domestic Energy Fact File* (BRE, 2003)

Various Government publications and debates: eg Hansard 2007

Journals:

Energy in Buildings and Industry

Building Services Journal - CIBSE

Renewable Energy World

Internet:

www.dti

www.dclg

www.bp.com/statistical/review

www.defra.gov.uk

www.metoffice.gov.uk

www.nef.org.uk

www.fuelcelltoday.com

www.carbontrust.co.uk

MODULE CODE:	M7X01806
TITLE:	Health & Safety Management
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K230

AIM(S)

This module provides students with an opportunity to extend their knowledge and understanding of the Health & Safety law and procedures as applied to the management of property land and real estate, and should enable the student to develop an understanding of the UK and European legislative frameworks and how they impact upon the facilities manager.

LEARNING OUTCOMES

Upon successful completion of this module, the student will be able to:

- 1 analyse the legislative issues which affect and influence the management and use of property (*BIFM Competence 8 – Understanding Building Design*);
- 2 critically evaluate the impact legislative framework has on the provision, and utilisation of facilities (*BIFM Competence 15 – Space Management*), and
- 3 establish Health & Safety strategies with other professional advisors and clients (*BIFM Competence 4 – People Management*)

INDICATIVE CONTENT:

- Legislation on Health & Safety – waste disposal, control of asbestos and legionella (*BIFM Competence 14 – Environmental Issues*)
- Risk Assessment (*BIFM Competence 17 – Risk Management*)
- Fire Legislation (Competent Person) (*BIFM Competence 10 – Managing Building Services*)
- Construction Design and Management (CDM) (*BIFM Competence 8 – Understanding Building Design*)
- Organisational Accidents (*BIFM Competence 17 – Risk Management*)
- Disabled Discrimination Act (*BIFM Competence 15 – Space Management*)

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	30	30%
Independent learning	70	70%
Site Visits	0	0
TOTAL	100	100%

LEARNING AND TEACHING STRATEGY

Students will be taught through an appropriate mixture of lectures, seminars and case studies.

It is essential that considerable background reading is undertaken to effectively consolidate the lecture material and handouts.

ASSESSMENT

Students will be required to submit a 2000 word report (66%) and a 6 minute presentation

Exemplar

Identify a suitable organisation with a commercial, industrial or public building of suitable scale (typically 1000 square metres or greater) and evaluate the range of range of legislative issues and health and safety factors that will need to be considered when managing such a facility. The response will typically be in the form of an audit and assessment as to how effectively the facility meets legislative and ethical challenges.

Assessment Summary

Activity type	Percentage
Written	
Coursework	66
Practical	34
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Considers the contribution that compliance with and exceeding statutory Health, Safety and Welfare measures, contribute to the sustainable health and welfare of organisations, institutions and individuals.	

BIBLIOGRAPHY:

Essential

St. John Holt, A. *Principles of Health & Safety at Work* (IOSH, 2005)

Bateman, M. *Tolley's Practical Risk Assessment Handbook - 5th Edition* (Elsevier, 2006)

Background

Health & Safety Starter Pack (HSE)

Joyce, R. *CDM Regulations 2007 Explained* (Thomas Telford, 2007)

Nutt, B. and McCloud, P. *Refurbishing Occupied Buildings* (Thomas Telford, 1998).

Reason, J. *Managing the Risks of Organisational Accidents* (Ashgate, 1997)

Goldsmith, S. *Designing for the Disabled* (Architectural Press, 1997)

MODULE CODE:	M7X01807
TITLE:	Living Sustainably
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	C183

AIM(S):

- to give students an appreciation of sustainability in practice
- to enable them to apply sustainability to themselves; in their own study area, lives, job roles, families, local communities or organisations

LEARNING OUTCOMES:

On successful completion of this module students will be able to:

- 1 demonstrate expertise in highly specialised and advanced technical, professional and/or research skills in the area of the needs for sustainable practice in their own subject/ vocational area (*BIFM Competence 14 – Environmental Issues*)
- 2 display mastery by producing a report, art object or presentation of a complex and specialised area of knowledge and skills in the application of sustainable development principles to their main subject areas (*BIFM Competence 5 - Communication*)

INDICATIVE CONTENT:

- Outline of need for sustainability, Rio de Janeiro and Johannesburg, human population expansion, pollution, lack of resources, inequity, diminishing biodiversity, ecological footprint, etc (*BIFM Competence 14 – Environmental issues*)
- On an individual basis; consideration of each student's lifestyle and how it may be made more sustainable (*BIFM Competence 14 – Environmental issues*)
- Good practice (in Swansea); agriculture, architecture, art, travel, energy, pollution, environmental management, purchasing, waste reduction, biodiversity, community. (Topics studied will depend on tutors and the students in a particular cohort) (*BIFM Competence 11 – Management Support Services*)
- An in-depth study/application of sustainability in relation to the student's main degree subject. Examples may include: -
 - o The use of sculpture made of recycled materials to interpret ecological concepts
 - o The application of sustainable building principles to a local housing project
 - o Evaluation of sustainable procurement of IT
 - o A critical appraisal and development of a carbon footprint reduction strategy for an organisation
 - o Tourism benefits of sea wind turbines
 - o An ecological appraisal of organic farming on the Gower

- o An analysis of the First 'In Town Without My Car Day' in Swansea
- o Wordsworth's contribution to creating sustainable landscape images
- o A video explaining the principles of sustainability for business
- o An accountant's cost benefit analysis of use of recycled paper
- o An analysis of a sustainable community
- o Examples of sustainable living in an urban context

BIFM Competence – this module will require the student to demonstrate both knowledge and experience across a range of competences

TEACHING AND LEARNING STRATEGY:

Formal PowerPoint lectures will be the principal form of delivery for this module. This will be supported by tutorials and one- to two-day field excursions. We use a variety of full-time and guest lecturers drawn from a wide variety of local and Welsh sustainability practitioners on this module. Additionally, students will be directed to relevant local and regional training events and conferences, eg the SWWWITCH annual travel plan conference.

It is expected that students will use a wide variety of information for their work. Most of these will be subject specific.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Lectures	10	10%
Fieldwork	0	0%
Tutorials	20	20%
Student Private Study	70	70%
TOTAL	100	100%

In addition, the student will present their interim findings and the resultant discussions will be a part of the learning process.

ASSESSMENT

Assessment will be carried using level descriptors at the appropriate level. The work will be double-marked by a subject and a sustainability specialist. The two areas to be examined will be understanding and application of sustainability principles, and the understanding of the subject.

Coursework 100%

To achieve each outcome, the student must produce:

- 1 a verbal interim report (6 minutes).
- 2 a final report of appropriate length (2,000 words) and academic level.

Exemplar

Consider a suitable environment which could be a: home, business, or operational facility and then critically assess its suitability to meet current and future requirements, from the legislative and performance perspectives.

Assessment Summary

Activity type	Percentage
Written	67
Coursework	
Practical	33
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
This module epitomises a sustainable lifestyle and discusses this from diverse and wide-ranging perspectives.	

BIBLIOGRAPHY:

Essential:

DEFRA *Quality of Life Counts: The UK Governments' Sustainable Development Strategy* (DEFRA, 2005)

Carley, M. and Christie, I. *Managing Sustainable Development* (Earthscan, 1993)

Schumacher, E. F. *Small is Beautiful* (Vintage Press, 1993)

Background:

Adams, W. M. *Green Development* (Routledge, 2001)

von Weizsacker, E. and Lovins, A. B. *Factor Four: Doubling Wealth - Halving Resource Use* (Earthscan, 1998)

Laszlo, E. *You Can Change the World* (Positive News Publishing, 2002)

Rees, W. and Wackernagel, M. *Our Ecological Footprint: Reducing Human Impact on the Earth* (New Society, 1996)

Journals:

Building for the Future

Green Futures

New Scientist

Permaculture

Sustainable Development International

Sustain

The Ecologist

(plus journals appropriate to subject area)

Websites:

<http://defra.gov.uk>

<http://endsreport.com>

<http://fairtrade.org.uk>

<http://resourcesnotwaste.org.uk>

<http://www.swan.ac.uk/german/modulepages/green.htm#new>

Global Environmental Outlook (UNEP): <http://www.unep.org/Geo/geo3/>

International Institute for Sustainable Development: <http://iisd1.iisd.ca/sd/>

Redefining Progress: <http://www.rprogress.org/>

MODULE CODE:	M7X01808
TITLE:	Management of Human and Organisational Resources
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K251

AIM(S)

- to foster in the student an understanding of the importance of adopting effective asset management principles and procedures. The module will address operational tactical and strategic criteria and gain skills and knowledge of benchmarking, condition based and lean asset management strategies.
- to provide a source for the essential evaluation of divergent perspectives on the design, culture, operation and management of organisations, including the relationships between employees, employers and ultimately all stakeholders of the firm
- to give students confidence to enable them to achieve an enhanced understanding of, and sensitivity to, the managerial dynamics and processes that influence the behaviour and performance of people at work.

LEARNING OUTCOMES:

On completion of this module the students should be able to:

1. Critically appraise the history of management and the way it has evolved to accommodate and sustain an enhanced customer focus (*BIFM Competence 2 – Understanding Business and Organisational Strategy*);
2. Evaluate different facets of organisational and individual behaviour and how these are influenced by the policies, procedures and processes adopted by the firm (*BIFM Competence 1. – Understanding the Structure and Behaviour of Organisations*);
3. Assess the importance of managing equality and diversity and determine the appropriate strategies that facilitate the enactment of, and commitment to, such practices throughout the firm (*BIFM Competence.3 – Developing FM strategy*), and
4. Analyse the role of the human resource management function in achieving prosperity and success for stakeholders through the implementation of effective policies and procedures (*BIFM Competence 4 – People Management*).

INDICATIVE CONTENT:

Critically appraise the different types of management and organisational behaviours, including managerial control and power, and the management of conflict and change through fair and equitable means intended to promote the wellbeing of the firm and all its stakeholders. This will incorporate both ethical considerations and legal applications where appropriate (*BIFM Competence 1 – Understanding the Structure and Behaviour of Organisations*);

Specifically identify organisational settings and generally defining the nature of different organisations, including their structure and design, culture and processes (*BIFM Competence 1 – Understanding the Structure and Behaviour of Organisations*);

The role of the manager and the nature of management and leadership within different organisations and during different lifecycles (*BIFM Competence 4 – People Management*);

The nature of work groups, their processes and behaviours within varying organisations that promote innovation, success and prosperity for the organisation, its employees and customers (*BIFM Competence 4 – People Management*);

The processes of achieving enhanced job satisfaction, heightened motivation and work performance, through the effective management and development of human capital; implement learning and innovative cultures that constantly strive to promote continuous professional development and business excellence (*BIFM Competence 4 – People Management*);

LEARNING AND TEACHING STRATEGY:

Students are expected to take considerable responsibility for their own learning, and to read widely from the literature relevant to the subject area.

In and out of the classroom, group work will be a contributory feature of the teaching and learning strategy. As in the workplace, students will be encouraged not to allow themselves to be disadvantaged by the absence of other group member(s), which replicates the workplace situation. Effective group communication and action planning will be promoted to assist in the meeting of deadlines.

Lectures, seminars and round-table discussions that facilitate role-play scenarios, will be used to introduce key ideas and theoretical concepts. These strategies will allow students to engage in discussions of solutions to practical situations, using prepared case study material and current day events and happenings that may occur within student's own, or other organisations. These will be further investigated through audio, internet and film.

Investigative and presentational skills will also be developed in this unit through role-play, directed reading, individual and group presentations and library research. In addition, the student will be required to undertake a range of activities and self-diagnosis of their managerial skills and competencies. There will be 25 hours of class contact.

Students may be given a prescribed question or scope to 'self-select' a topic area which will assess the module outcomes. Usually, students will normally have to base the question on an organisation with which they are familiar.

The whole process of undertaking the assignment is intended to develop the student's commercial awareness, application capacity, in depth knowledge and comprehension and presentation and persuasion. Through completing the assignment, students are further encouraged to use their initiative and wherever possible, introduce and implement new initiatives at work.

Students are expected to be able to produce responses that are well structured, logical and address the specifics of the question. Theoretical concepts, benchmark examples, costings and details from their own experiences should be evident within the student's assignments. Students should note that the concepts and models are generic and should be applied to a variety of organisations and sectors.

Allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	30	30%
Independent learning	70	70%
TOTAL	100	100 %

ASSESSMENT

Assessment will take the form of a 3000-word report.

The assignment brief will detail generic assessment criteria where typically, marks are distributed thus:

<i>Analysis, evaluation and critique</i>	55%
<i>Recommendations</i>	25%
<i>Presentation</i>	20%

Exemplar

An assignment will be based on a question regarding an aspect of HRM (outcome 4), from which students will have to relate to an organisation which they are familiar. The question(s) will require students to:

- Appraise the development of management within the chosen organisation (outcome 1)
- Evaluate the different facets of organisational and individual behaviour as related to the question set, demonstrating how they are influenced by the policies, procedures and processes adopted by the organisation under study (outcome 3)
- Take account of equality and diversity management in their analysis and recommendations (outcome 3)
- Students are expected to be able to produce responses that are well structured, logical and address the specifics of the question. Theoretical concepts, benchmark examples, costings and details from their own experiences should be evident within student's assignments.
- The whole process of undertaking the assignment is intended to develop the student's commercial awareness, application capacity, in depth knowledge and comprehension and presentation and persuasion. Through completing the assignment, students are further encouraged to use their initiative and wherever possible, introduce and implement new initiatives at work.

Assessment Summary

Activity type	Percentage
Written	
Coursework	80
Practical	20
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Considers the impact that a sustainable organisation, in its many facets, can make to creating a culture that attracts, retains and nurtures the very best staff, thereby adding value to the individual, organisation and society.	

BIBLIOGRAPHY

Essential

Mullins, L. J. *Management and Organisational Behaviour*, 7th Edition (Prentice Hall, 2004)

Background

Adair, J. *Effective Strategic Leadership* (Macmillan, 2003)

Carnall, C. A. *Managing Change in Organisations* - 4th Edition (Prentice Hall, 2003)

Daft, R. L. *Organisational Theory and Design* (South-Western College Publishing, 2003)

Golman, D., Boyatzis, R. and McKee, A. *The New Leaders: Transforming the Art of Leadership Into the Science of Results* (Little Brown, 2003)

Leary-Joyce, J. *Becoming an Employer of Choice* (CIPD, 2004)

Marchington, M. and Wilkinson, A. *Human Resource Management at Work* (CIPD, 2004)

Robbins, S. P. *Organisational Behaviour: International Edition* - 10th Edition (New Prentice Hall, 2003)

Taylor, S. *People Resourcing* (CIPD, 2005)

Journals

British Journal of Management

Harvard Business Review

Human Relations

Human Resource Management Journal

IRS Employment Trends

Journal of Management Studies

Journal of Organisational Behaviour

Management Review

Management Today
People Management
Personnel Review
Personnel Today

Websites

www.acas.org.uk

www.cbi.co.uk

www.cipd.co.uk

www.eoc.org.uk

www.employment-studies.co.uk

www.statistics.gov.uk

www.parliament.gov.uk

www.indsoc.co.uk

www.dti.gov.uk

MODULE CODE:	M7X01809
TITLE:	Management of Quality and Operations
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K230

AIM(S):

- to provide students with an awareness and understanding of the role of Operations Management, and how it enables managers in all sectors to manage and improve an organisations competitiveness and ability to provide customers with quality goods, services and value

LEARNING OUTCOMES:

On completion of this module the student should be able to:

- 1 critically examine in order to improve operational and quality issues and value performance (*BIFM Competence 1 – Understanding the Structure and Behaviour of Organisations*)
- 2 analyse and apply different options for operational and quality improvement to a variety of sectors (*BIFM Competence 19 – Quality Management*)
- 3 evaluate key concepts and philosophies of Operational and Quality Management and why operational analysis is important in all types of organisation (*BIFM Competence 19 – Quality Management*)

INDICATIVE CONTENT:

- The role, purpose and context of operations management in all sectors (*BIFM Competence 2 – Understanding Business and Organisational Strategy*)
- The importance of competitiveness in all sectors, how it is measured and reasons for excellent and poor performance (*BIFM Competence 1 - Understanding the Structure and Behaviour of Organisations*)
- Quality Management, traditional and contemporary approaches analysed via quality costing using examples for manufacturing and public sectors eg Best Value (*BIFM Competence 16 - Procurement*)
- Quality Management and the need for preventative strategies via TQM, quality teams, SPC, FMEA Service Quality etc (*BIFM Competence 19 – Quality Management*)
- Legal and ethical environment of operations which will include Health & Safety, Employment aspects (*BIFM Competence 4 – People Management*)
- Project Management to plan, analyse and control the resource base in new ventures (*BIFM Competence 12 – Project Management*)
- Just In Time philosophy, and how it achieves benefits not only in inventory but also in other performance measures (such as quality, delivery, supplier performance, costs,

human resources and motivation). Applications of JIT to non-manufacturing organisations (*BIFM Competence 6 – Working with Suppliers and Specialists*)

TEACHING AND LEARNING STRATEGY

Lectures will be used to introduce key skills which will be aided and developed by the use of case study work, video, discussion, and practical sessions, eg on FMEA, BPR etc, in order to build problem solving skills.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	25	25%
Independent learning	70	70%
Site Visits	5	5%
TOTAL	100	100%

ASSESSMENT

All students will be assessed by a case based assignment. Differentiation will be achieved by reviewing the quality of responses. Some negotiation will be possible in selecting the focus and sector of operation, which will be researched in order to complete the task. Generic concepts will be taught which are transferable to all industry sectors. International Tourism students must generate case material pertinent to the tourism management environment.

The method of assessment will be via a case study containing operational and quality aspects from a chosen sector of operation (eg service, transport etc). Students will be expected to analyse and evaluate the current operational position and present recommendations. They will provide their findings in a 3,000-word case study report.

Exemplar:

This will typically involve a candidate reviewing the application of quality management methods and principles to the operational delivery of Property or Facility services or estate assets in a large organisation.

3,000-word case study assignment that will require research and evaluation of an organisation's current and desired status leading to recommendations for improvement.

Assessment Summary

Activity type	Percentage
Written	
Coursework	100
Practical	
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The module should ensure that resources are effectively managed and that waste in its many forms such as materials, labour and capital is mitigated.	

BIBLIOGRAPHY

Essential:

Costin, H. *Readings in Total Quality Management* (Harcourt Brace, 1994)

Evans, J. R. and Lindsay, W. M. *Management and Control of Quality* (SWC Publishing, 2010)

Hutchins, D. *Just in Time* (Gower, 1999)

Maylor, H. *Project Management* (Pitman, 2002)

Oakland, J. S. *Total Quality Management* (Butterworth Heinemann, 2003)

Oakshott, L. (2001) *Essential Quantitative Methods for Business Management and Finance*, (Macmillan, 2001)

Background:

Popplewell, B. and Wildsmith, A. *Becoming the Best* (Gower, 1998)

Russel, R. S. and Taylor III, B.W. *Operations Management: Focusing on Quality and Competitiveness* (Prentice-Hall, 2004)

Slack, N., Chambers, S. et al *Operations Management* (Pitman, 2003)

Journals

IEE Review

International Journal of Operations and Production Management

Journal of Operations Management

Journal of the Operational Research Society

Management Today

Quality Management

Total Quality Management

Websites

www.just.auto.com

www.lm-business.co.uk

www.apm.org.uk

www.project-management-software.ajeebo.com

www.catalystconsulting.co.uk

www.spc-software-package.com

www.industryforum.co.uk

www.smartgroup.org

MODULE CODE: M7X01810
TITLE: Management of the Integrated Working Environment
DATED: 28/08/2014

LEVEL: 7
CREDITS: 10

JACS CODE: K990

AIM(S)

This module aims to develop knowledge and understanding of the issues involved in managing buildings and their support services in a responsive and cost-effective way.

LEARNING OUTCOMES

On successfully completing this module, the student will be able to:

- 1 apply a systematic understanding of the complex concepts in operational management of building support services (*BIFM Competence 11 – Managing Support Services*);
- 2 critically evaluate the support service contracting processes (*BIFM Competence 13 – Managing Customer Services*), and
- 3 evaluate and develop a critique of the management of the working environment (*BIFM Competence 15 – Space Management*).

INDICATIVE CONTENT:

- Support services (*BIFM Competence 11 – Managing Support Services*)
- The working environment (*BIFM Competence 15 – Space Management*)
- Customer relations and service (*BIFM Competence 2.6*)
- Innovative workplace design (*BIFM Competence 15 – Space Management*)
- The importance of sustainable practices (*BIFM Competence.14 – Environmental Issues*)
- Environmental analysis and legislation(*BIFM Competence 14 – Environmental Issues*)
- Waste resource management (*BIFM Competence 14 – Environmental Issues*)
- Space Planning (*BIFM Competence 15 – Space Management*)

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	40	20%

Independent learning	150	75%
Site Visits	10	5%
TOTAL	200	100 %

LEARNING AND TEACHING STRATEGY

Formal lectures supported by related workshops will be the main mode of delivery for this module. Students will be encouraged to support this with self-study.

Visits to working environments will reinforce learning, and workshops will allow students the opportunity to raise key issues that challenge some of the principles laid down in the lectures and will increase the value of students' learning.

ASSESSMENT

Students will be assessed by means of a 3,000-word assignment or equivalent.

Exemplar:

A typical scenario within this Module to test the learning outcomes will require the candidate to complete a task such as that indicated below:

Task One

Assume you have been appointed as the Head of Facilities and Estates for the University of Wales, Trinity St. David:

- 1 Critically evaluate the *facilities* related challenges that the new integrated university faces.
- 2 Suggest how the university can deliver its academic programmes to meet student needs and create an atmosphere that will encourage staff and students to excel.
- 3 In a globally changing working and research environment, describe how you might foresee the future university developing in order to attract students and leading academics.

or:

Task Two

Prepare a 3000 word academic paper that considers how universities (or a similar large facility) will need to fundamentally restructure its campus based teaching facilities either within the UK or globally.

Assessment Summary

Activity type	Percentage
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Written	
Coursework	100
Practical	
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Buildings and estate facilities are generally perceived as the most significant contributor to the global use of energy and carbon emissions. By efficiently managing built facilities and their associated support service delivery mechanisms in an effective pro-active and sustainable manner offers immense scope to contribute positively to the challenges posed by climate change and depletion of resources. This module stresses the importance and opportunities for achieving this by evaluating how the world of work operates.	

BIBLIOGRAPHY:

Essential:

Binggeli, C. *Building Systems for Interior Designers*, (Wiley, 2003)

Booty, F. (Ed) *Facilities Management Handbook* (Butterworth, 2011)

Clements-Croome, D. (Ed) *Intelligent Buildings: Design, Management and Operations* (Thomas Telford, 2004)

Clements-Croome, D. (Ed) *Creating the Productive Workplace* (Spon, 2005)

Background:

Dunphy, D. et al *Organisational Change for Corporate Sustainability* (Routledge, 2003)

Jaunzens, D. and Duffy, F. *New Environments for Working* (Spon, 1998)

Oseland, N. and Bartlett, P. *Improving Office Productivity; A Guide for Business and Facilities Managers* (Longman, 1998)

Park, A. *Facilities Management: An Explanation* (Blackwell, 1998)

Raymond, S. and Cunliffe, R. *Tomorrow's Office: Creating Effective and Humane Interiors* (Spon, 1997)

Wastebusters *The Green Office Manual, A Guide to Responsible Practice* (Earthscan, 2000)

Journals

The Resource Eclipse Publications

Facilities Design and Management Miller Freeman Publications

Facilities Management Eclipse Publications

Facilities Management Management Guide Series, Eclipse Publications

Websites

www.info4education.com

MODULE CODE:	M7X01811
TITLE:	Property and Facilities Management - Academic and Professional Skills
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K251

AIM(S)

To explore current issues which impact upon the property and facilities management environment, and develop knowledge and understanding of these while developing advanced academic research and writing skills suitable for Masters study and professional report-writing

LEARNING OUTCOMES

Upon successful completion of this module, the student will be able to:

- critically evaluate the basic structure of Property and Facilities Management and the current issues influencing the way this multi-disciplinary industry functions
- investigate and report on an issue in an academic manner
- demonstrate a professional standard of report-writing

INDICATIVE CONTENT

- an understanding of the basic structure of the property and facilities management industry and its relationship with the built environment sector and hotel-type services
- the ability to review current issues (including environmental sustainability drivers) that influences: the way the industry functions, impacts on organisations within the built environment sector, professions within the built environment sector, development control legislation, building control legislation, government control of infrastructure, the climate change imperative, UK infrastructure, the housing market and sources of finance and the global and national context within which the industry operates
- the ability to investigate and report on an issue in an academic manner
- the ability to define an issue, use sources of information, referencing and the Harvard system
- time management skills; the ability to structure an assignment; critical thinking; plagiarism; bibliographies; revising for exams; exam technique.
- a professional standard of report-writing commensurate with Masters study

- understanding of the purpose of a professional report; the ability to prepare and plan the report and choose the right words, including the appropriate writing style; collecting information; minutes; technical appraisals; reviewing prior to issue.

LEARNING AND TEACHING STRATEGY

The teaching and learning strategy for this module aims to provide students with theoretical knowledge and practical experiences. The approach to teaching will ensure this by combining lectures, tutorials and student-centred learning assignments. Students will be screened for dyslexia and similar problems so that suitable arrangements can be made to assist their learning.

Allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	30	30 %
Independent learning	70	70 %
TOTAL	100	100 %

ASSESSMENT

Assessment Component One - 60 %

Assessment Component Two – 40 %

Exemplar

Component One: Critically evaluate the basic structure of Property and Facilities Management and the current issues influencing the way this multi-disciplinary industry functions. Investigate and report briefly on a Property and FM current issue in an academic manner. This to be via a short, but fully-referenced report of appropriate academic standard.

Component Two: Prepare and deliver a formal presentation of a professional standard commensurate with Masters level study to staff and contemporaries that outlines the principal findings identified in Component One.

Assessment Summary

Activity type	Percentage
Written	
Coursework	60
Practical	40
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Considers the current and future environmental issues that impact upon the delivery of facilities and support services and how adjustments are being made both voluntarily and through legislative change.	

BIBLIOGRAPHY

Essential

Bowden, J. *Writing A Report - How to Prepare, Write and Present Really Effective Reports* (Spring Hill, 2011)

Greetham, B. *How to Write Better Essays* (Palgrave, 2013)

Cotterell, S. *Critical Thinking Skills: Developing Effective Analysis and Argument* (Palgrave, 2013)

Recommended:

Badman, J. and Grimmet, L. *Legal Frameworks for the Built Environment* (Routledge, 2013)

Van den Brink-Budgen, R. *Critical Thinking for Students: Learn the Skills* (Spring Hill, 2010)

Cotterell, S. *Dissertations and Project Reports: a Step-by-Step Guide* (Palgrave, 2014)

Websites

Facilities on I H S

MODULE CODE:	M7X01812
TITLE:	Property Law and Practice
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K251

AIM(S)

This module provides students with an opportunity to extend their knowledge and understanding of the principles and procedures of law as applied to the management of property, land and real estate. It aims to provide the student with a grasp of property, land and planning law, together with a broad understanding of relevant building and Health & Safety issues.

LEARNING OUTCOMES

On completion of the module, the student should be able to:

- 1 interrogate and interpret legal concepts relating to land, buildings and issues of Health & Safety
- 2 identify and apply relevant law to resolve specific legal problems relating to possible Health & Safety problems
- 3 demonstrate understanding of the importance of dilapidations and the impact and liabilities posed to both landlord and tenant

INDICATIVE CONTENT:

- Land law – Freehold interests, covenants, easements and boundaries. Leasehold interests, restrictive covenants, extensions and enfranchisement. Mortgages, rights and obligations
- The Law of Support, fixtures. Licences and *profits à prendre*. Land registration, understanding the register, protection of third-party rights, conveyancing of registered and unregistered land
- The Party Wall etc Act. Boundary Disputes. CDM Legislation, and roles and responsibilities
- Planning law – Development plans, planning applications, appeals and enforcement. Listed Buildings, together with an introduction to the current Building Regulations
- Building issues – NHBC warranties and other approved certifiers
- Latent Defect Insurance, professional negligence, nuisance, trespass
- Types of survey and responsibilities of surveyors for negligent surveys
- Public Liability Insurance and Professional Indemnity Insurance
- Dilapidations – Landlord & Tenant issues
- Health & Safety – Health & Safety at Work Act 1974 and subsequent regulations. Civil Liability, Fire Precautions, Asbestos
- Environmental Law.

TEACHING AND LEARNING STRATEGY

The module will be taught by means of lectures and tutorials. The tutorials, by the use of case studies, will allow the students, to research certain sections of the indicative content within a library environment.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	30	30%
Independent learning	70	70%
TOTAL	100	100%

ASSESSMENT

Coursework **100%**

Exemplar

Interpret and evaluate a business lease and consider the implications of such a lease for property management and compliance (3000 word case study equivalent).

Assessment Summary

Activity type	Percentage
Written	
Coursework	100
Practical	
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Considers the contribution that meeting and exceeding the requirements of the law, regulations and effective professional practice make to the sustainability of organisations, institutions and individuals. The emphasis is upon introducing the legal and professional requirements, norms and standards applicable and then exploring how added value can be incorporated to benefit society in its widest context.	

BIBLIOGRAPHY

Essential

Machin, D. *The Valuation and Sale of Residential Property* (Routledge)

Code of Measuring Practice (RICS)

Gray, K. *Elements of Land Law* (Butterworth)

Clarke, A. and Kohler, P. *Property Law Text and Materials* (CUP, 2005)

Background:

Green, K. *Land Law* (MacMillan)

The Party Wall etc Act, HMSO

Journals:

Estates Gazette

Property Week

See also Library Resources, eg online database *Westlaw*

Websites:

www.idsbrief.co.uk

www.rics.org.uk

MODULE CODE:	M7X01813
TITLE:	Services and Energy Performance of Buildings
DATED:	28/08/2014
LEVEL:	7
CREDITS:	20
JACS CODE:	H221

AIM(S)

This module covers the collection, interpretation and analysis of research data, and aims to develop a student's knowledge and understanding of building engineering services, maintenance strategies and the key principles of efficient energy procurement, use and management.

It will develop the student's understanding of the importance of adopting a proactive approach to effective asset management principles, procedures and practices, and will address operational tactical and strategic criteria and generate skills and knowledge of benchmarking, condition and risk-based and lean asset management strategies involved in the effective management of large complex estates, often where multi-tenanted.

LEARNING OUTCOMES:

Upon successful completion of this module, students will be able to:

- 1 Systematically understand the issues involved in operationally managing building engineering services (BIFM Competence 10 – Managing Building Services)
- 2 Critically analyse building engineering services maintenance strategies (BIFM Competence 10 – Managing Building Services)
- 3 Critically evaluate energy procurement and management (BIFM Competence 16 - Procurement)

INDICATIVE CONTENT:

- Comfort and Productivity (*BIFM Competence 13 – Managing Customer Service*)
- Building Engineering Services (*BIFM Competence 4.10*)
- Energy Management Including: Energy Policies, Energy Audits, Energy Procurement, Energy Matrix, Energy Efficiency, Monitoring And Targeting, Metering, Benchmarking And Building Log Books (*BIFM Competence 4.10*)
- Renewable Sources of Energy (*BIFM Competence 14 – Environmental Issues*)
- Post Occupancy Performance (*BIFM Competence 4.13*)
- Energy Performance Certificates and Display Energy Certificates (*BIFM Competence 4.10*)

LEARNING AND TEACHING STRATEGY

The methods will vary according to the nature of the topic, but will be a combination selected from: lectures, seminars, educational visits and case studies.

It is essential that considerable background reading is undertaken to effectively consolidate the lecture material and handouts.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	50	25
Independent learning	140	70
Site Visits	10	5
TOTAL	200	100 %

ASSESSMENT

Students will be required to submit a 4000 word assignment and 12 minute presentation.

The assignment will involve the students undertaking research on relevant topics and presenting their results in the context of existing knowledge.

Exemplar

- Assimilate and evaluate the complexity and diverse nature of building engineering services
- Prepare strategies for the effective maintenance of building engineering services
- Develop opportunities for effective energy procurement, undertake energy audits and produce sound energy management policies

Assessment Summary

Activity type	Percentage
Written	
Coursework	60
Practical	40
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Buildings and estate facilities are generally perceived as the most significant contributor to the global use of energy and generator of carbon emissions. By efficiently managing built facilities and their associated support service delivery mechanisms in an effective pro-active and sustainable manner offers immense scope to contribute positively to the challenges posed by climate change and depletion of resources. This module stresses the importance and opportunities for minimising this effective monitoring and control.	

BIBLIOGRAPHY:

Essential

Managing your Building Services (CIBSE Knowledge Series, 2005)

Background

Chadderton, D.V. *Building Services Engineering* (Spon, 2004)

Guide F: Energy Efficiency in Buildings (CIBSE, 2004)

Log Book Toolkit (CIBSE, 2003)

Facilities Management: Innovation & Performance (CIBSE, 2004)

Barrett, P. and Baldry, D. *Facilities Management Best Practice - 2nd Edition* (CIBSE, 2003)

Thomas, R. *Environmental Design* (Taylor Francis, 2006)

Journals

Building Services Journal (CIBSE)

EIBI

FM World (BIFM)

MODULE CODE:	M7X01814
TITLE:	Strategic Property Management and Procurement
DATED:	28/08/2014
LEVEL:	7
CREDITS:	20
JACS CODE:	K251

AIM(S)

This module aims to develop and broaden the student's knowledge and understanding of strategic property management, procurement strategies and contractual management issues.

LEARNING OUTCOMES

Upon successful completion of this module, students will be able to:

- 1 analyse and apply current methods by which facilities managers can realize the true potential of property portfolios by proactive management (*BIFM Competence 7 – Property Portfolio Management*);
- 2 evaluate the performance of property, within the context of both operational estates use, and within investment portfolios (*BIFM Competence 7 – Property Portfolio Management*);
- 3 critically evaluate procurement systems and methods (*BIFM Competence 16 - Procurement*);
- 4 develop strategies for the legal and financial management of facility management contracts (*BIFM Competence 18 – Financial Management*)

INDICATIVE CONTENT:

- Strategic Property Management principles, including an introduction to valuation and appraisal methods (*BIFM Competence 7 – Property Portfolio Management*)
- Management of property within the context of multi-asset portfolios (*BIFM Competence 7 – Property Portfolio Management*)
- Landlord and tenant management issues within both a legal and business context (*BIFM Competence 7 – Property Portfolio Management*)
- Social and ethical responsibilities, occupiers liabilities and the legal and economic implications of insurance (*BIFM Competence 19 – Quality Management*)
- Procurement Procedures - the selection and appointment of consultants, suppliers and specialists and the resulting monitoring of their performance (*BIFM Competence 16 - Procurement*)
- Contractual Management (*BIFM Competence 16 - Procurement*)
- Financial management (*BIFM Competence 18 – Financial Management*)

LEARNING AND TEACHING STRATEGY

Students will be taught through an appropriate mixture of lectures, seminars, site visits and case studies relating to the management of property portfolios.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	36	18%
Independent learning	150	75%
Case Studies	8	4%
Workshops	3	1.5%
Site Visits	3	1.5%
TOTAL	200	100%

ASSESSMENT

Assessment will be by means of production of a 6,000-word investigative report that identifies and analyses a large, complex or portfolio of buildings, together with a 12 minute presentation.

Exemplar:

A typical task might be for:

A candidate to assume they have been appointed to the role of Group Property and Facilities Director for an international (retail banking) organisation. This has an estate comprising 320 retail banking premises, 6 regional offices (set in buildings that date in age from the 1950s to the 1990s); a refurbished European headquarters located within a 1980s building near the City of London, two computer data-processing centres, each of approximately 25,000 sq. metres gross internal floor area and a 1990s, deep plan Call-centre facility of 100,000 sq. metres.

These are all within the Group of Companies that you are tasked with managing. The portfolio, at present, comprises 240 banks located throughout the United Kingdom and another 80 spread throughout the major cities of Europe. Most properties are held as freehold or long leasehold interests, but approximately a third are on short-term occupancy formats, eg leases and licenses where the organisation operates units within retail stores or shopping malls. Business has slowed as a result of the recession, and the organisation is keen to rebrand their product range utilising their facilities as a positive marketing tool, to add value to the core business.

The age profile of the estate varies considerably: approximately a third of the banks are traditionally-built period properties (some of which are listed or otherwise statutorily protected); another third have been built at various times since the Second World War, and 40 within the past decade are located within shopping centres and retail parks. The organisation is very keen on brand image and seeks a high level of performance from its built assets.

The Company Board have tasked you to identify a suitable site for a new corporate back-office to be located within the South Wales region that will accommodate a 3,000 person office facility with Function and training facilities, thereby allowing for rationalisation and down-sizing of the regional offices. Aware of its social responsibilities, the Board is keen to identify a brownfield location for sustainable regeneration whilst maximising potential returns on capital expenditure.

Tasks

1. Liaise with local Commercial Letting Agents, Urban Regeneration/Development Unit specialists, Planning Departments, etc. to identify a suitable site – of at least two hectares.

Provide details of the site including geographical maps, suitably annotated, photographs, Unitary/LDP development plan extracts etc. that might impinge.

Then, undertake a draft feasibility (in outline format) exploring the viability of applying these proposals at your chosen site. Please state any assumptions that you might make, including: form, structure, footprint, typical materials used in the facility. Notional floor areas, build costs etc. should be established using design guides, price books and other published data.

(20 Marks)

2. Provide an outline Estate Strategy that explains how you would evaluate and consider rationalisation and redevelopment of the whole estate. This should explore how this portfolio might develop and evolve over the next 5-10 years in order to maximise core business potential whilst maintaining capital assets and minimising revenue expenditure.

(25 Marks)

3. When considering this estate portfolio; provide appropriate cost examples that illustrate how the FIVE (5) Principles of Valuation might be utilised to generate contextual Asset Valuations of this portfolio.

(25 Marks)

4. Critically evaluate a range of procurement options suitable for providing both hard and soft facilities services to the estate including that required for the construction of the new call-centre.

(20 Marks)

5. Provide a ten minute feedback presentation, to your peer group, outlining the relevant findings of your study. This is to be undertaken in week 12 of the Semester.

(10 Marks)

Whilst this is a project-based scenario, the response should be supported with referencing and literature reviews that support the world of work.

Assessment Summary

Activity type	Percentage
Written	

Coursework	60
Practical	40
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
Buildings and estate facilities are generally perceived as the most significant contributor to the global use of energy and carbon emissions. By efficiently managing built facilities and their associated support service delivery mechanisms in an effective pro-active and sustainable manner this offers immense scope to contribute positively to the challenges posed by climate change and depletion of resources. This module stresses the importance and opportunities for achieving this by strategically managing property and real estate assets effectively.	

BIBLIOGRAPHY:

Essential:

Barrett, P. S. *Facilities Management: Towards Best Practice* (Spon, 1998)

Deakin, M. *Property Management: Corporate Strategies, Financial Instruments and the Urban Environment* (Ashgate, 2004)

ISURV *Electronic Online Subscription* (RICS, annual)

OGC *Achieving Excellence in Construction Procurement* (2007)

RICS *Building Maintenance: Strategy, Planning and Procurement* (RICS, 2000)

Sweet, R. *Commercial Leases: Tenants' Amendments* (Sweet & Maxwell, 2005)

Background:

Banfield, A. *Stapleton Real Estate Management Practice* (EG, 2005)

Edwards, V. and Ellison, P. *Corporate Property Management – Alignment of Real Estate with Business Strategy* (Blackwell, 2003)

Langston, C. and Lauge-Kristensen, R. *Strategic Management of Built Facilities* (Butterworth Heinemann, 2002)

Sayee, S. et al *Real Estate Appraisal* (Blackwell, 2006)

Morledge, R. *Building Procurement* (Blackwell, 2006)

RICS Publications *Building Maintenance: Strategy, Planning and Procurement* (RICS, 2000)

Bower, D. *Management of Procurement* (Thomas Telford, 2003)

CIRIA Sustainable Construction Procurement – A Guide to Delivering Environmentally Responsible Projects

CIRIA Value by Competition: A Guide to the Competitive Procurement of Consultancy Services for Construction

MODULE CODE:	M7X01815
TITLE:	Sustainable Processes
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K230

AIM(S):

This Module seeks to further develop the candidate's awareness of sustainability in its many facets, and to develop the student's knowledge of environmental conservation from a sustainable development point of view with an emphasis on the importance of conserving limited resources.

LEARNING OUTCOMES:

On successful completion of this module students will be able to:

- 1 make informed decisions and formulate policies concerning sustainable development (*BIFM Competence 14 – Environmental Issues*)
- 2 critically analyse the demands that the built environment places on the natural environment (*BIFM Competence 12 – Project Management*)
- 3 contextualise and critically evaluate current key trends with regard to sustainable development (*BIFM Competence 14 – Environmental Issues*)

INDICATIVE CONTENT:

- Sustainable development - the concept (*BIFM Competence 14 – Environmental Issues*);
- Resources - the impact of the built environment on natural resources (*BIFM Competence 12 – Project Management*);
- The relationship between rural and urban development (*BIFM Competence 14 – Environmental Issues*)
- Management processes - the importance of sustainable management as a means to conserve resources (*BIFM Competence 12 – Project Management*)

LEARNING AND TEACHING STRATEGY:

Teaching methods will vary according to the nature of the topic, but will be a combination selected from lectures, seminars, case studies, educational visits, assignments and private study. It is essential that considerable background reading is undertaken to effectively consolidate the lecture material and handouts.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Lectures	24	25%
Seminars	3	3%
Case Studies	3	2%
Private Study	70	70%
TOTAL	100	100%

ASSESSMENT

Assessment of the outcomes will be via one-hour examination paper (50%) and one1, 500-word essay (50%).

Exemplar:

Critically evaluate a (to be agreed) using a representative range of building audit formats and report on the processes used within the facility.

Assessment Summary

Activity type	Percentage
Written	50
Coursework	50
Practical	
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The aims, content and title of this module are entirely related to attaining these objectives.	

BIBLIOGRAPHY:

Essential:

Boyle, G. (ed) *Renewable Energy: Power for a Sustainable Future* (OUP, 1996)

Davies, J. *Greening Business: Managing for Sustainable Development* (Wiley, 1994)

DEFRA *Securing the Future* (2005)

DETR *Quality of Life Counts: Indicators for a Strategy for Sustainable Development for the United Kingdom: a Baseline Assessment* (1999)

DETR *A Better Quality of Life: A Strategy for Sustainable Development for the UK* (1999)

DETR *Waste Strategy 2000, England and Wales*

DTI *New and Renewable Energy: Prospects in the UK for the 21st Century - Supporting Analysis*, A report produced by ETSU for the Department of Trade & Industry, (1999) <http://www.regeneration.detr.gov.uk/urbantask98/utfol.htm>

Lovelock, J. F. *Gaia: A New Look at Life on Earth* (OUP, 1995)

Meadows, D. H., Randers, J. and Meadows, D. *Limits to Growth; the 30-Year Update* (Earthscan, 2004)

Background:

Baker, S. *Sustainable Development* (Routledge, 2006)

Clini, C., Musu, I. and Gullino, M. L. *Sustainable Development and Environmental Management* (Springer, 2008)

Keiner, M. *The Future of Sustainability* (Springer, 2006)

Pearce, D. *Conservation Today* (Earthscan, 1999)

Roser, D., Asikainen, A., Raulund-Rasmussen, K. and Stupak, I. (ed) *Sustainable Use of Forest Biomass for Energy* (Springer, 2010)

Rural Development Commission *Rural Development and Land Use Planning Policies* (1998)

Munier, N. *Handbook on Urban Sustainability* (Springer, 2007)

Worldwatch *State of the World 2005*

Purvis, M. and Grainger, A. (eds) *Exploring Sustainable Development* (Earthscan, 2004)

Stanners, D. and Bourdeau, P. *The Dobris Assessment: Europe's Environment* (European Environmental Agency: Copenhagen, 1995)

von Weizsacker, E. and Lovins, A. B. *Factor Four: Doubling Wealth - Halving Resource Use* (Earthscan, 1998)

MODULE CODE:	M7X01817
TITLE:	Research Methodology
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	K220

AIM(S):

This Module seeks to further develop the candidate's research skills ready for undertaking the Part II Dissertation. It builds upon the earlier postgraduate study and introductory skills module.

The aim of the module is for students to develop a problem-solving approach to research to facilitate their Dissertation. Students will be introduced to research methods, with special reference to qualitative and quantitative analysis. Hypothetical deductivism and experimental processes will be developed so that the students will become fully conversant with a range of possible ways in which a Masters level Dissertation can be conducted. This will be undertaken at a level appropriate to the potential discovery of new knowledge.

LEARNING OUTCOMES:

On successful completion of this module students will be able to:

- 1 identify an academically innovative problem, review the investigative approach and critique appropriate methods of solution
- 2 evaluate data quality (eg sampling methodology), reason (eg assumptions, interpreting evidence, recognition of uncertainty) and modify the hypothesis if necessary
- 3 construct an academically, advanced and structured research proposal

BIFM Competences - It is anticipated that this module, during the preparation of a research proposal, will necessitate students to relate to a broad range of competences.

INDICATIVE CONTENT:

- identifying a research problem, formulating a hypothesis and literature review
- experimental design, sampling and interpretive frameworks
- sources of information – archives, bibliographic sources, current literature, the internet
- questionnaire design, interview techniques and field data
- statistical techniques, parametric and non-parametric testing, correlation
- qualitative analysis

- developing a proposal – research statements, research outline and design research schedule
- presentation of results, graphical techniques and referencing (advanced academic skills)
- evaluation and writing up
- research ethics and their role in FM Dissertations

LEARNING AND TEACHING STRATEGY

Students will be taught through lectures and tutorials to develop the theoretical and practical aspects of the module. The lectures will focus on research methods theoretically, and the tutorials will be an opportunity for individual students/ small groups to discuss their research proposals.

Additional tutorial support will be provided for students who have not undertaken an appropriate research methods module in their undergraduate programme.

ASSESSMENT

Outcomes 1, 2 and 3 will be assessed through the submission of an assignment. This assignment will be based on an academic research proposal (2,000 words) (70%) and supported through a viva (30%) (15 minutes).

To achieve each outcome a student must:

- Select and critically review appropriate methodologies in the research of a Facilities Management problem
- Use detailed evidence to test a hypothesis and academically defend ideas concerning the research proposed
- Produce an advanced academic research proposal

Coursework – 100%

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	20	20%
Tutorials	10	10%
Independent learning	70	70%
TOTAL	100	100%

Exemplar:

The challenge of an exemplar in this module is self-defined and focussed around producing a research proposal of Master's calibre that has the capacity to evolve possibly into a

dissertation. Wide ranging literature reviews will be required and the formation of a research question (2000 word research proposal and a 12 minute viva.

Assessment Summary

Activity type	Percentage
Written	
Coursework	60
Practical	40
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The topic chosen for the research proposal and the research materialising from this will almost certainly embrace environmental sustainability in a number of its many facets.	

BIBLIOGRAPHY:

Essential Reading:

Cottrell, S. *Dissertations and Project Reports: A Step by Step Guide* (Palgrave Study Skills, 2014)

Amaratunga, D. *Case Study Methodology as a Means of Theory Building: Performance Management in FM Organisations* volume 50 No. 3 p 95 - 105 (Work Study, 2001)

Fellows, R. and Liu, A. *Research Methods for Construction* (Blackwell Oxford, 2003)

Harrad, S. *Conducting your Research Project in Quantitative Environmental Science* (Wiley, 2007)

Nutt, B. *FM Practice and Research Facilities* - volume 17 No. 12 p 11-17 (1999)

Rudestam, K. E. *Surviving Your Dissertation* (Sage, 2001)

Naoum, S. G. *Dissertation Research and Writing for Construction Students* (B&H, 1999)

Background:

Allison, B. and Race, P. *The Student's Guide to Preparing Dissertations and Theses* (Routledge, 2004)

Babba, E. *Adventures in Social Science Data Analysis: SPSS* (Thousand Oaks, 2007)

Bell, J. *Doing Your Research Project* (OU, 2005)

Creswell, J. W. *Qualitative Inquiry and Research Design* (Routledge, 1998)

Dytham, C. *Choosing and Using Statistics: A Biologist's Guide* (Blackwell, 2006)

Gibbs, G. *Analysing Qualitative Data* (Sage, 2008)

Gash, S. *Effective Literature Searching for Research* (Gower, 2000)

Ginevan, M. E. *Statistical Tools for Environmental Quality Measurement* (Taylor & Francis, 2003)

Greenfield, T. *Research Methods Guidance to Postgraduates* (Wiley, 1996)

Hart, C. *Doing a Literature Review* (Sage, 1998)

Kumar, R. *Research Methodology: A Step by Step Guide* (Sage, 2005)

Kvale, S. *Doing Interviews* (Sage, 2007)

Lock, L. F., Spirduso, W. W. and Silverman, S. J. *Proposals that Work* (Sage, 2000)

Rapley, T. *Doing Conversation, Discourse And Document Analysis* (Sage, 2008)

Robson, C. *Real World Research* (Oxford Blackwell, 1993)

Walliman, N. *Your Research Project: a Step By Step Guide* (Sage, 2001)

Yin, R. K. *Case Study Research - Design and Methods* (Sage, 1994)

Wheater, C. and Cook, P. *Using Statistics to Understand the Environment* (Routledge, 2000)

Journals:

CIRIA

FM Journals

Internet

Appropriate to subject matter.

MODULE CODE: M7X01819
TITLE: The Workplace Environment
DATED: 28/08/2014

LEVEL: 7
CREDITS: 10

JACS CODE: K230

AIM(S):

- To further develop the candidate's research skills ready for undertaking the Part II Dissertation. It builds upon the earlier Postgraduate study and induction skills module.
- To provide students with knowledge of the current trends applicable to working environments. Environmental conservation is equally important in the internal work place as much as the outside working environment. The module will allow students to explore, in depth, current significant issues relevant to working environments

LEARNING OUTCOMES:

Upon successful completion of this module students will be able to:

- 1 Critically evaluate current significant challenges relevant to the working environment (*BIFM Competence 15 – Space management*)
- 2 Academically explore different working environments and critically appraise their appropriateness for a range of working activities (*BIFM Competence 15 – Space management*)

M Level Requirements in this Module:

- 3 can independently evaluate/ argue alternative approaches and accurately assess/report on own/others work with justification
- 4 engages with a critical community, reflecting habitually on own and others' practice in order to improve own/others' actions

INDICATIVE CONTENT:

- The impact work practices and workplaces have on management (*BIFM Competence 13 – Managing Customer Service*)
- The importance the supporting services have in providing the appropriate environment (*BIFM Competence 11 – Managing Support Services*)
- The building structure (*BIFM Competence 8 – Understanding Building Design*)
- Indoor and outdoor environments (*BIFM Competence 11/13 – Managing Support Services/Managing Customer Service*)
- Workplace design (*BIFM Competence 8 – Understanding Building Design*)

- Greening the workplace (*BIFM Competence 14 – Environmental Issues*)

LEARNING AND TEACHING STRATEGY:

Formal lectures supported with appropriate tutorials will form the main delivery of this module. Students will be encouraged to support these methods with self-study. Some tutorial work will provide the framework for students' private study. During the tutorials students will have the opportunity to raise key issues that challenge some of the principles laid down in the lectures thus ensuring the foundation for reinforcing the learning process. In addition visits to working environments and guest lectures will add value to the student's learning.

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Lectures	10	10%
Tutorials	20	20%
Supervised visits	0	0%
Student Private Study	70	70%
TOTAL	100	100%

ASSESSMENT

Lectures, tutorials, coursework, examination and visits to waste management facilities will help deliver material to support students achieving these outcomes. The coursework will require the submission of a 3,000-word report.

Exemplar:

Typically a subject will be:

Society is ever changing; technology is rapidly changing too. How can sustainability be incorporated into our civilisation under these conditions?

Coursework 100%

Assessment Summary

Activity type	Percentage
Written	
Coursework	100
Practical	
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The design and operation of the workplace environment is a key driver in creating a sustainable development and can at times, even avoid the need for development or the use of finite resources.	

BIBLIOGRAPHY:

Essential:

Edwards, B. (ed) *Green Architecture* (Wiley, 2001)

Battle, G. and McCarthy, C. *Sustainable Ecosystems* (Wiley, 2001)

Background:

Birkeland, J. *Design for Sustainability* (Earthscan, 2002)

Wigginton, M. and Harris, J. *Intelligent Skins* (Architectural Press, 2004)

Emmett, S. and Gorse, C. A. *Barry's Construction of Buildings volumes 1 and 2* (Wiley, 2014)

Osbourn, D. *Introduction to Building* (Batsford, 1991)

Moughtin, C. with Shirley, P. *Urban Design: Green Dimensions* (Architectural Press, 2005)

Langston, C. A. and Ding, G. K. C *Sustainable Practices in the Built Environment* (Butterworth Heinemann, 2001)

Clements-Croome, D. (ed) *Intelligent Buildings: Design, Management and Operation* (Thomas Telford, 2004)

Thomas, R. (ed) *Environmental Design* (Spon, 1996)

Keeping, M. and Shiers, D. *Sustainable Property Development: A Guide to Real Estate and the Environment* (Blackwell, 2004)

Hall, K. (ed) *The Green Building Bible* (Green Building Press, 2005)

Roaf, S., Fuentes, M. and Thomas, S. *Ecohouse 2 - A Design Guide* (Architectural Press, 2003)

Roaf, S., Crichton, D. and Nicol, F. *Adapting Buildings and Cities For Climate Change* (Architectural Press, 2005)

Journals:

Ends

Green Futures

Resource

Building for a Future

Websites:

<http://www.info4education.com>

www.endsreport.co.uk

www.defra.gov.uk

www.environment-agency.gov.uk

MODULE CODE:	M7X01821
TITLE:	Waste and Resource Management
DATED:	28/08/2014
LEVEL:	7
CREDITS:	10
JACS CODE:	D443

AIM(S):

- to provide students with the opportunity to explore, in depth, current significant issues relevant to waste management. Students will be able to make informed judgments concerning the socio-economic consequences of current technology
- to address issues of contemporary waste management, the legislative frameworks and current issues as they apply to Property and Facilities Management

LEARNING OUTCOMES:

On successful completion of this module students will be able to:

- 1 critically evaluate current significant waste management challenges (*BIFM Competence 10 – Managing Building Services*)
- 2 analyse a range of technological solutions to the waste problem (*BIFM Competence 14 – Environmental issues*)

M Level Requirements in this Module

- 3 awareness of ethical dilemmas likely to arise in research and professional practice
- 4 an ability to formulate solutions in dialogue with peers, clients, mentors and others
- 5 the capacity to isolate, assess and resolve problems of all degrees of predictability in an autonomous manner

INDICATIVE CONTENT:

- Waste hierarchy (*BIFM Competence 14 – Environmental Issues*)
- Recycling (*BIFM Competence 14 – Environmental Issues*)
- Landfill (*BIFM Competence 14 – Environmental Issues*)
- Combustion processes (*BIFM Competence 10 – Managing Building Services*)
- Sewage sludge (*BIFM Competence 14 – Environmental Issues*)
- Environmental issues (*BIFM Competence 14 – Environmental Issues*)

Allocation of teaching to deliver the module will be:

Activity type	Hours	Percentage
Scheduled learning	15	15%
Supervised visits	15	15%
Student Private Study	70	70%
TOTAL	100	100%

LEARNING AND TEACHING STRATEGY:

Formal lectures supported with appropriate tutorials will form the main delivery of this module. Students will be encouraged to support these methods with self-study. Some tutorial work will provide the framework for students' private study.

During the tutorials students will have the opportunity to raise key issues that challenge some of the principles laid down in the lectures, thus ensuring the foundation for reinforcing the learning process. In addition, visits to waste treatment facilities and guest lectures will add value to the student's learning.

ASSESSMENT

Assessment will take the form of a 3000 word report.

Exemplar:

Using evidence from field work, submit a report of 3,000 words that will critically evaluate the different methods available for the treatment of waste.

Assessment Summary

Activity type	Percentage
Written	
Coursework	100
Practical	
TOTAL	100 %

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

Does the module contribute to ESD?	Yes ✓
	No
The aims, content and title of this module are entirely related to attaining these objectives.	

BIBLIOGRAPHY

Essential

Welsh Assembly Government *Wise about Waste: The National Waste Strategy for Wales, Part One* (2002)

Welsh Assembly Government *Wise about Waste: The National Waste Strategy for Wales, Part Two, Technical Annex* (2002)

Williams, P. T. *Waste Treatment and Disposal* (Wiley, 2006)

Background

Dhir, R. K., Limbachiya, M. C. and Paine, K. A. *Recycling and Reuse of Used Tyres* (Thomas Telford, 2001)

Dhir, R. K., Limbachiya, M. C. and Newlands, M. D. *Recovery and Recycling of Paper* (Thomas Telford, 2001)

Dhir, R. K., Limbachiya, M. C. and Dyer, D. *Recovery and Reuse of Glass Cullet* (Thomas Telford, 2001)

Biffa *Future Perfect: An Analysis of Britain's Waste Production and Disposal Account, with Implications for Industry and Government for the Next Twenty Years* (Winter, 2002/3)

DTI *New and Renewable Energy: Prospects in the UK for the 21st Century* (March, 1999)

Defra *Waste Implementation Programme: New Technologies* (2005)

Porteous, A. *Dictionary of Environmental Science and Technology*- 3rd edition (Wiley, 2006)
Strategy Unit *Waste Not, Want Not: A Strategy for Tackling the Waste Problem in England* (2002)

von Weizsacker, E. and Lovins, A. B. *Factor Four: Doubling Wealth - Halving Resource Use* (Earthscan, 1998)

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