

Liverpool John Moores University

Title: GREEN AND SUSTAINABLE COMPUTING
Status: Definitive
Code: **6055BECK** (118389)
Version Start Date: 01-08-2011

Owning School/Faculty: Computing and Mathematical Sciences
Teaching School/Faculty: Beckett College London

Team	Leader
Dhiya Al-Jumeily	Y

Academic Level: FHEQ6
Credit Value: 12.00
Total Delivered Hours: 36.00

Total Learning Hours: 120
Private Study: 84

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	12.000
Seminar	12.000
Tutorial	12.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	An essay that involves a review of the requirements and environmental impact of green ICT technologies and look at how companies can streamline their systems, increase sustainability and save energy costs.	50.0	
Report	AS2	Research and design of real-life practical strategies which provide sustainable computing for a specific ICT requirement.	50.0	

Aims

To provide an in-depth study of the issues and concepts surrounding green and sustainable computing.

To develop an understanding of the theory and practices of developing green and sustainable computing systems and practices.

To develop an understanding of the fundamental technical concepts to develop, implement, monitor and control an organizational strategy to achieve green objectives.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically review and identify the fundamental technical requirements of green ICT technologies.
- 2 Critically evaluate the environmental impact of ICT and look at how companies can streamline their systems, increase sustainability and save energy costs.
- 3 Apply creative skills in the design of real-life practical strategies which provide sustainable computing for the future.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Green ICT	1	2
Research and design	3	

Outline Syllabus

Developing Green IT Strategies:

Developing awareness of factors and issues which are present in a particular organizational setting

Generate a set of objectives for a green ICT strategy.

Developing a green ICT strategy and implementation plan with appropriate mechanisms for control.

Green Computing Technologies:

Investigating and identifying available technologies which could reduce the impact on the environment within an organization, from an information and communications technology (ICT) perspective.

ICT and the Environment:

Identifying and assessing key environmental issues over wide range aspects of an organisation's operation, from ICT perspective.

Ethics and ICT:

Focusing on social, ethical, legal and legislative issues relevant to the green business agenda, including the EU directive (WEEE). The idea is to help to develop

a set of professional ethics to help in a constantly changing environment.

Sustainable Computing:

Dealing with the environmental impact of ICT equipment through their life cycle from their production, use and eventual disposal or recycling.

Issues relating to cost and impact production and an environmental business model are covered.

Learning Activities

Learning activities will be through lectures, tutorials and seminar/group work where students will be encouraged to ask questions and discuss case studies and do research and reflection on the subject area.

References

Course Material	Journal / Article
Author	Murugesan, S.
Publishing Year	
Title	Harnessing Green IT: Principles and Practices - pp 24-33
Subtitle	January-February 2008
Edition	
Publisher	IEEE IT Professional
ISBN	

Course Material	Book
Author	O'Neill, M.G.
Publishing Year	2008
Title	Green IT for Sustainable Business Practice
Subtitle	An ISEB Foundation Guide
Edition	
Publisher	British Computer Society
ISBN	1906124620

Course Material	Book
Author	Velte, T., Velte, A. and Elsenpeter, R.
Publishing Year	2010
Title	Green IT
Subtitle	Reduce Your Information System's Environmental Impact While Adding to the Bottom Line
Edition	
Publisher	McGraw-Hill Osborne
ISBN	0071599231

Notes

The course will provide an in-depth study of the issues and concepts surrounding green and sustainable computing. It will provide the fundamental technical concepts that help the student to understand the theory and practices of developing green and sustainable computing systems and the fundamental technical concepts to develop, implement, monitor and control an organizational strategy to achieve green objectives.