

Liverpool John Moores University

Title: UBIQUITOUS & PERVASIVE COMPUTING
Status: Definitive
Code: **7034COMP** (103293)
Version Start Date: 01-08-2011

Owning School/Faculty: Computing and Mathematical Sciences
Teaching School/Faculty: Computing and Mathematical Sciences

Team	Leader
Paul Fergus	Y

Academic Level: FHEQ7
Credit Value: 15.00
Total Delivered Hours: 36.00
Total Learning Hours: 150
Private Study: 114

Delivery Options

Course typically offered: Semester 1

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	Individual research and design of a Pervasive/Ubiquitous Computing Application.	100.0	

Aims

To develop the student's knowledge of pervasive & ubiquitous computing (PUC) systems

To develop the student's knowledge of human-computer interaction in PUC systems

To develop the student's knowledge of the role of context-awareness in PUC systems

To examine current research directions in pervasive and ubiquitous computing

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate expertise in meeting or overcoming the challenges in building pervasive & ubiquitous computing systems.
- 2 Apply advanced knowledge in solving interaction issues in pervasive & ubiquitous computing applications.
- 3 Demonstrate advanced knowledge of the issues in context-awareness in pervasive & ubiquitous computing.
- 4 Critically evaluate research in pervasive and ubiquitous computing.

Learning Outcomes of Assessments

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

Research and design 1 2 3 4

Outline Syllabus

Defining Pervasive and Ubiquitous Computing (PUC)
Evolution paths for PUC; mobile and social computing, networked appliances
Role of sociology and psychology in designing PUC
Sensors and context information
Intelligent/smart spaces
Security and privacy problems in PUC
Human Computer Interaction issues
Applied systems: social, health, art, gaming

Learning Activities

Lectures, tutorials, seminars.

References

Course Material	Book
Author	Greenfield, A.
Publishing Year	2006
Title	Everyware: The Dawning Age of Ubiquitous Computing
Subtitle	
Edition	
Publisher	New Riders Publishing
ISBN	0321384016

Course Material	Book
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Author	Hansmann, U.
Publishing Year	2003
Title	Pervasive Computing: The Mobile World
Subtitle	
Edition	2nd
Publisher	Springer
ISBN	3540002189

Course Material	Book
Author	Krämer, B. J., Halang, W. A.,
Publishing Year	2007
Title	Contributions to Ubiquitous Computing
Subtitle	
Edition	
Publisher	Springer
ISBN	978-3-540449096

Course Material	Book
Author	Streitz, N.
Publishing Year	2007
Title	Disappearing Computing: Interaction Design, System Infrastructures and Applications for Smart Environments
Subtitle	
Edition	
Publisher	Springer
ISBN	3540727256

Course Material	Journal / Article
Author	
Publishing Year	
Title	Journal papers from various sources including (available via JMU e-journals/FindIt) Pervasive Computing (IEEE) Personal and Ubiquitous Computing (Springer) Pervasive and Mobile Computing journal, PMC (Elsevier)
Subtitle	
Edition	
Publisher	
ISBN	

Notes

The module covers theoretical and practical aspects of Pervasive & Ubiquitous Computing (PUC), including current advanced research in the area. PUC systems are seen as an evolution from current 'PC' computing that become augmented by embedded computing, sensor system, context information and the general concept of the 'disappearing computer', i.e. there is an increase in 'calm' technologies and working in the background without overly conscious interaction from users. The

challenges of moving from current computing paradigms to PUC are the focus of this module.