

Liverpool John Moores University

Title: CLOUD COMPUTING AND PROGRAMMING
Status: Definitive
Code: **5549NCCG** (129512)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Nelson Campus

Team	Leader
Robert Askwith	Y
Silvester Czanner	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 60
Total Learning Hours: 200 **Private Study:** 140

Delivery Options

Course typically offered: S1, S2 and NS2 (S2 for Jan)

Component	Contact Hours
Lecture	60

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Assignment	Assignment	100	

Competency	NCC Group Pass/Fail
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Aims

This module is designed to develop an understanding of the fundamental concept of Cloud Computing, cloud segments, and cloud deployment models, the need for Cloud Computing, an appreciation of issues associated with managing cloud service architecture and to develop a critical awareness of Cloud Computing based projects.

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate an understanding of the fundamentals of Cloud Computing and its architectures.
- 2 Evaluate the deployment models, service models and technological drivers of Cloud Computing and validate their use
- 3 Develop Cloud Computing solutions using service provider's frameworks and open source tools.
- 4 Analyse the technical challenges for cloud applications and assess their risks.

Learning Outcomes of Assessments

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

Assignment	1	2	4
NCC Group Pass/Fail			3

Outline Syllabus

Networking Paradigm: Peer-to-peer Computing, Client-Server Computing, Distributed Computing, Cluster Computing, High-Performance Computing, Parallel Computing, Grid Computing Cloud Computing Fundamentals: Cloud Ecosystem, Cloud Architecture, Network Connectivity in Cloud Computing, Managing the Cloud, Migrating Application to Cloud

Deployment models: Private Cloud, Public Cloud, Community Cloud, Hybrid Cloud. Service models. Technological drivers. Programming Models, Pervasive Computing, Application Environment.

Cloud Service Providers. Open Source Tools

Distributed Computing Tools

Security: Data Security, Virtualisation, Network Security. Platform related security, Audit and Compliance.

Learning Activities

Lectures

These will not normally be traditional didactic lectures in which the student plays little active part, but will be delivered in small groups of up to 20 students in which their interaction with their tutor is a key ingredient of their learning experience.

The material of this module requires the development of significant practical skill. This will be taught within the lecture time, making these sessions a blend of lecture and workshop time. The sessions will be timetabled in spaces with physical

resources appropriate to the delivered content.

Students will receive approximately 30 hours of taught material, supported by in-class exercises and discussions designed to help student assimilate learning and to provide early informal feedback on their progress.

Practical Work

This module contains directed practical work that students will undertake under the supervision of teaching staff and/or technicians. Some elements of this practical work will form part of the assessment for this module.

Independent Study

Students are expected to undertake personal reading and research into topic areas that have been stimulated from the lectures and seminars. This reading will enhance their academic work and enable valid contribution to lectures and seminars.

VLE support

This will provide links to academic web-sites and on-line journals, facilitate group discussion outside of the classroom, access to outline lecture notes, and provide students with assessment details.

Notes

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