



UNIVERSITY OF WALES: TRINITY SAINT DAVID
PRIFYSGOL CYMRU: Y DRINDOD DEWI SANT

School of Applied Computing

Cloud Computing Technologies ACCC5000
Level 5

MODULE CODE: ACCC5000
TITLE: Cloud Computing Technologies
LEVEL: 5
CREDITS: 20

JACS CODE: I110

AIM(S)

- To provide students with a systematic understanding of the major concepts and technologies upon which service-level cloud computing is built. The module will expose students to some of the more advanced cloud computing concepts that underpin more sophisticated cloud computing implementations.

LEARNING OUTCOMES

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

1. Demonstrate a systematic understanding of cloud computing concepts, principles and practice in the analysis and design of a robust solution.
2. Exercise effective judgment in the analysis, planning, deployment and evaluation of core cloud design principles with respect to best practice.

INDICATIVE CONTENT

- Instantaneous resource provisioning.
- Cloud security, including handling of sensitive data.
- Exploiting Software as a Service (SaaS), including optimization, streamlining and collaboration with appropriate productivity tools.
- Deploying distributed web applications, including SOAP and RESTful web services.
- Delivering Platform as a Service (PaaS), including component analysis, architecture evaluation and use of service platform tools.
- Deploying Infrastructure as a Service (IaaS), including scalable clustering, platform-level virtualisation and on-demand provisioning.
- The Cloud migration process, encompassing both business and technical considerations.
- Virtualisation concepts, including type 2, but especially type 1 hypervisors.

LEARNING AND TEACHING STRATEGY

The conceptual, theoretical issues are suited to delivery during weekly lectures. These topics necessitate exploration and application to case studies pertaining to cluster computing, for which laboratory work is the most appropriate strategy. Students will be expected to read widely within the literature relevant to the subject area.

ASSESSMENT

Description of each assessment component and its weighting, together with an example for new forms of assessment:

Assessment Component 1 –Coursework - 50%

Task 1 – 2000word Report (Based on Case Study Provided)

Task 2 – 15 Minute Presentation (Based on Case Study Provided)

Software development portfolio. Deploy a suitable replete or partial cloud computing implementation based on the service architecture. This will include a critical evaluation of the implemented cluster architecture.

Exemplar: 'Commission a cluster-based implementation'

Assessment Component 2 – Written - 50%

2- hour written exam. This will be based on a provided enterprise-based case study which:

- Explores analytical frameworks systematically as pertains to the provided study.
- Evaluate theoretical material from practical case study-based information to generate critique.
- Consider the application of analysis techniques and tools for this case.

Exemplar: 'Analyse a cluster-based solution to an enterprise problem'

Assessment Summary

Activity type	Percentage
Written	50%
Coursework	50%
Practical	0%
TOTAL	100%

BIBLIOGRAPHY

Essential

Erl, T. and Puttini, R. and Mahmood, Z.,(2013) *Cloud Computing: Concepts, Technology and Architecture*, Pearson Education

Rhoton, J. and Haukioja, R. (2011) *Cloud Computing Architected*, Recursive, Limited

Background

Fox, A. and Patterson, D. (2013) *Engineering Software As a Service: An Agile Approach Using Cloud Computing*, Strawberry Canyon LLC