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South East Technological University

Module Descriptor

Cloud Application Services (Computing and Mathematics)

Cloud Application Services (A13801)

Short Title: Cloud Application Services
Department: Computing and Mathematics
Credits: 10 **Level:** Postgraduate

Description of Module / Aims

The focus of this module is on the principles and practices in the design and implementation of Cloud based applications and supporting services. This module will introduce modern application architectures and frameworks, RESTful services and Cloud Computing Infrastructure technologies. Emerging concepts and techniques in the areas of IaaS, PaaS and SaaS will be covered using the latest tools such as Amazon's Web Services.

Programmes

		stage/semester/status
COMP-0616	MSc in Computer Science (Enterprise Software Systems) (WD_KCESS_R)	1 / 0 / E

Indicative Content

- Cloud Computing Architectures and Services
- Networking services: IP Addressing, DNS, DHCP, NAT
- Security services for Cloud Applications
- Highly Available Applications
- Web Services
- Software Defined Services

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Assess the properties of Cloud-based Application environments (e.g. scalability, loose coupling etc.) and recognise the advantages and challenges in creating such Systems.
2. Model cloud-based services that are secure, cohesive, and loosely coupled.
3. Compare and contrast common Application Architectures.
4. Develop and configure solutions for modern Cloud Application systems.
5. Critique key features and design decisions that affect a design solution.

Learning and Teaching Methods

- The practical lab component will be delivered in one double lab session.
- Combination of lectures and computer-based practical and simulation exercises.
- Self-directed learning.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	24
Lab	24	24
Independent Learning	222	222

Assessment Methods

	Weighting	Outcomes Assessed
Final Written Examination	50%	1,2,3,5
Continuous Assessment	50%	
Assignment	30%	1,2,3,4
Lab Report	20%	3,5

Assessment Criteria

<40%: Unable to interpret and describe key concepts of the specific knowledge domains of SDN, Infrastructure services and automation.

40%–59%: Be able to interpret and describe key concepts of the specific knowledge domains of Cloud Architectures, Infrastructures and Services. Ability to discover and integrate related knowledge into cloud based application architectures.

60%–69%: Be able to solve problems within the specific knowledge domain(s) by experimenting with the appropriate skills and tools.

70%–100%: All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of both complex and unforeseen problems through the use and modification of appropriate skills and tools.

Supplementary Material(s)

- "Amazon Web Services." http://aws.amazon.com/
- Erl, T. *Cloud Computing Design Patterns*. 1st. New York: Prentice Hall, 2015.
- Newman, S. *Building Microservices*. 1st. New York: O'Reilly Media, 2015.

Requested Resources

- Computer Lab: BYOD Lab