

# COMP 7018 ADVANCED CLOUD COMPUTING

**Credit Points** 10

**Legacy Code** 301363

**Coordinator** Rodrigo Neves Calheiros ([https://directory.westernsydney.edu.au/search/name/Rodrigo Neves Calheiros/](https://directory.westernsydney.edu.au/search/name/Rodrigo%20Neves%20Calheiros/))

**Description** This unit offers the Amazon Web Services (AWS) Academy "Academy Cloud Architecting" (ACA) curriculum and provides deeper understanding of advanced cloud computing services and how to architect cloud solutions. Students will learn advanced cloud computing concepts including notification and messaging, serverless computing, API gateways, NoSQL databases, and content delivery networks. The unit also explores strategies to enable high scalability, reliability, cost-efficiency, performance, and operational excellence in a cloud-based system. All these aspects are explored in practice with AWS services. Upon completion of this unit, students will be prepared for the AWS Certified Solutions Architect - Associate exam.

**School** Computer, Data & Math Sciences

**Discipline** Computer Science, Not Elsewhere Classified.

**Student Contribution Band** HECS Band 2 10cp

**Level** Postgraduate Coursework Level 7 subject

**Pre-requisite(s)** COMP 7004

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Assess different design patterns for web-scale storage and recommend the most appropriate pattern for a specific problem.
2. Analyse common design patterns and architectures for loosely coupled cloud computing systems and recommend the most appropriate pattern for a specific problem.
3. Evaluate strategies to enable high scalability, reliability, cost-efficiency, performance, and operational excellence in a cloud-based system.
4. Examine concepts of security and infrastructure automation in a cloud-based system.
5. Design and deploy scalable, reliable, and efficient systems that utilise advanced cloud services.

## Subject Content

- 1.Design patterns for loosely coupled cloud computing systems: microservices and serverless architectures
- 2.Design patterns for web-scale storage: content delivery networks, object storage, and relational and no-relational databases
- 3.Advanced cloud services: API gateways, stream processing, and serverless computing
- 4.Queueing and notification systems
- 5.Advanced cloud security
- 6.Reliability in clouds
- 7.Cost and performance efficiency in cloud computing
- 8.Infrastructure automation
- 9.Common cloud design patterns and cloud architectures

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/Group Task
Quiz	10 minutes for 13 quizzes	S/U	N	Individual
Practical	120 minutes (each)	30	N	Individual
Applied Project	10 pages	25	N	Group
Report	2500 words	30	N	Individual
Viva Voce	10 minutes	15	N	Individual

Teaching Periods

## Spring

**Parramatta - Victoria Rd**

**Day**

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