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/)

Description This subject 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 subject 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 subject, 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

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

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.

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

Teaching Periods

Spring (2025)

Parramatta - Victoria Rd

On-site

Subject Contact Rodrigo Neves Calheiros (https://directory.westernsydney.edu.au/search/name/Rodrigo Neves Calheiros/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=COMP7018_25-SPR_PS_1#subjects)