**Unit of Study: ICT5253 Cloud Architectures and Solutions**

**Overview**

Students in this unit will expand their knowledge and understanding of cloud architectures and solutions. Students will explore cloud-based data storage including big data applications, virtualisation, and container concepts. Security challenges related to the cloud are examined together with different cloud designs and implementations, their advantages, and limitations.

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| **Course(s)** | Master of Information Technology |
| **Credit Points** | 8 credit points |
| **Duration** | 12 weeks (10 teaching weeks; 1 revision week; 1 final assessment week) |
| **Level** | Postgraduate  Advanced |
| **Student Workload** | Students should expect to spend approximately 13 hours per week over 12 weeks (totalling approximately 156 hours) on learning activities for this unit. |
| **Mode(s) of Delivery** | On campus, Blended |
| **Pre-Requisites** | ICT5150 and ICT5151 |
| **Unit Coordinator** | As per current [timetable](https://apicollege.edu.au/current-students/timetables/) |
| **Contact Information** | Consultation: 1 hour scheduled session |

**Unit Learning Outcomes**

On successful completion of this unit, students will be able to:

ULO1 Critique the fundamental principles and paradigms of cloud computing architectures.

ULO2 Appraise recent technology innovations that enable effective cloud computing.

ULO3 Evaluate the security issues and challenges in cloud computing.

ULO4 Critically review the technological and ethical issues of cloud solutions.

ULO5 Design and implement cloud solutions to enable specific business objectives.

**Weekly Schedule**

Detailed information for each week’s activities can be found on Unit’s Weekly Modules in Canvas.

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| **Week** | **Topic** |
| **Week 1** | Introduction to cloud computing |
| **Week 2** | Cloud service providers and the cloud ecosystem |
| **Week 3** | Network environment management and troubleshooting networks |
| **Week 4** | Cloud data storage and Cloud applications |
| **Week 5** | Cloud infrastructure, hardware, and software |
| **Week 6** | Cloud security & ethics |
| **Week 7** | Cloud resource virtualization and container techniques |
| **Week 8** | Cloud access and cloud interconnection networks |
| **Week 9** | Big data, data streaming, and the mobile cloud |
| **Week 10** | Designing, and planning a cloud solution architecture |
| **Week 11** | Revision |
| **Week 12** | Final Assessments |

**Assessments**

APIC awards common result grades, set out in the [Award of Grade Policy.](https://apicollege.edu.au/policies/Award_of_Grades_Policy.pdf)

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| **Assessment Task** | **Type** | **Weighting** | **Due** | **Length** | **ULOs** |
| **Assessment 1: Laboratory Practicum (Invigilated)** Weekly exercises assess students’ ability to understand materials considered. | Individual  User with solid fill  See the source imageInvigilated | 40% | Weeks  3, 5, 6, 7, 8, 9, 10 | Each 30 minutes  (equiv. 3500 words) | ULO1  ULO2  ULO3  ULO4  ULO5 |
| **Assessment 2: Report**  Students will critically analyse the cloud architecture and features of a selected cloud provider. | Individual  User with solid fill | 30% | Week  8 | 2000  words | ULO1  ULO2  ULO4 |
| **Assessment 3: Cloud Design and Deployment** Create and configure a simple cloud services using AWS Educate according to specified business requirements. | Group  Users | 30% | Week  12 | (equiv. 4000 words) | ULO1  ULO2  ULO3  ULO4  ULO5 |

Detailed information for each assessment can be found on the Unit’s Home Page in the Assessment Brief

equiv. – equivalent word count based on the Assessment Load Equivalence Guide.

**Course Reserve**

Course Reserve includes all required resources and reading material for the unit of study. You can access Course Reserve via [APIC Library](https://ecalibrary.on.worldcat.org/courseReserves/landing) or via the Course Reserve link on the unit’s homepage.

**Prescribed text(s):**

West, J 2021, CompTIA Cloud+ Guide to Cloud Computing, 1st edition, Cengage, Boston.

**Recommended reading:**

Marinescu, D.C., 2017. Cloud computing: theory and practice. Morgan Kaufmann

Encyclopedia of Cloud Computing, edited by San Murugesan, and Irena Bojanova, John Wiley & Sons, Incorporated, 2016.

**Academic integrity**

Ethical conduct and academic integrity and honesty are fundamental to the mission of APIC and academic misconduct will not be tolerated by the College. It is the responsibility of every student to make sure that they understand what constitutes academic misconduct and to refrain from engaging in it. Please refer to APIC’s [Academic Integrity Policy](http://www.apicollege.edu.au/policies/ACADEMIC_INTEGRITY_POLICY.pdf) for further details.

**Other Important Information and Links**

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| **Special consideration**  If your academic work is impacted by significant documented illness, hardship, or other adverse circumstances beyond your control, you may make an application for Special Consideration. Please refer to the [Assessment Policy](https://apicollege.edu.au/policies-and-regulations/) for further details. | **Late submission**  Penalties apply when work is submitted after the due date without approval. Please refer to the [Assessment Policy](https://apicollege.edu.au/policies-and-regulations/) for information about late submission. |
| **Assessment appeals**  If you are concerned about a mark you have received for an assessment or final grade, you may apply to formally appeal the grade. Please see the [Assessment Policy](https://apicollege.edu.au/policies-and-regulations/) for further details. | **Award of grades**  APIC awards common result grades, set out in the [Award of Grade Policy](https://apicollege.edu.au/policies-and-regulations/). |
| **Expectations of student conduct**  Students are expected to conduct themselves in a manner that is consistent with a safe and respectful study environment. More information can be found in the [Student Code of Conduct](https://apicollege.edu.au/policies-and-regulations/). | **Study resources**  APIC Library and Student Learning Support resources and services can be accessed via the [Student Lounge](https://apic.instructure.com/courses/35) or your [Dashboard on the OLS (Canvas)](https://apic.instructure.com/). |
| **Student Services**  The Student Services team provides administrative support for students and handles enquiries about enrolment, timetables, important dates and submitting forms. More information can be found on the [Student Services page on the OLS (Canvas)](https://apic.instructure.com/courses/35). | **Key dates**  Key dates through the academic year, including teaching periods, census, payment deadlines and exams can be found on the [Academic Calendar](https://apicollege.edu.au/current-students/academic-calendar/) section of the APIC website. |

**Changes and Updates to the Unit of Study Guide**

This Unit of Study Guide may be updated and amended from time to time. Students will be notified of any changes to the unit via the Online Learning System (Canvas) space for the unit.

This Unit of study Guide was last modified on 30th of August 2023.