



Course Outline (Higher Education)

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|-------------------------|---|
| School: | School of Engineering, Information Technology and Physical Sciences |
| Course Title: | CLOUD AND MOBILE SECURITY |
| Course ID: | ITECH3100 |
| Credit Points: | 15.00 |
| Prerequisite(s): | (ITECH1102) |
| Co-requisite(s): | Nil |
| Exclusion(s): | (ITECH3300) |
| ASCED: | 020103 |

Description of the Course:

Cloud and mobile computing are essential technologies in contemporary computing. Their wide usage in software applications exemplifies the need to appreciate and understand the security threats that exist in this area. This subject covers security and privacy aspects of both cloud and mobile computing, where students will not only gain detailed knowledge about security issues but also the trust properties associated with cloud and mobile computing. Other emerging topics such as sensors and vehicular mobile computing are also investigated.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

| Level of course in Program | AQF Level of Program | | | | | |
|----------------------------|----------------------|---|---|---|---|----|
| | 5 | 6 | 7 | 8 | 9 | 10 |
| Introductory | ■ | ■ | ■ | ■ | ■ | ■ |

| Level of course in Program | AQF Level of Program | | | | | |
|----------------------------|----------------------|---|---|---|---|----|
| | 5 | 6 | 7 | 8 | 9 | 10 |
| Intermediate | ■ | ■ | ■ | ■ | ■ | ■ |
| Advanced | ■ | ■ | ✓ | ■ | ■ | ■ |

Learning Outcomes:

Knowledge:

- K1.** Articulate the need for cloud and mobile data security management.
- K2.** Discuss the complexities of threat models and the trust in mobile cloud computing.
- K3.** Analyse key elements associated with cloud computing security.
- K4.** Discuss and reflect on industry security compliance for mobile and cloud services.
- K5.** Develop an understanding of agent-based trustworthy infrastructure for mobile cloud computing.

Skills:

- S1.** Critically evaluate various types of trust in mobile cloud computing.
- S2.** Distinguish different levels of security for mobile cloud computing.
- S3.** Analyse and evaluate emerging technologies such as sensor and vehicular mobile cloud computing.
- S4.** Research emerging trends of mobile cloud.
- S5.** Distinguish the process governance needs of security and privacy policies in mobile cloud computing.

Application of knowledge and skills:

- A1.** Audit different security threats involved in mobile cloud.
- A2.** Investigate current security issues and challenges in relation to mobile cloud computing.
- A3.** Communicate professionally to list security policies for mobile cloud computing.
- A4.** Apply security policies and standards involved for security compliance inspection.

Course Content:

Topics may include:

- Mobile Networks 1G-4G
- Mobile Networks Threats and Planning
- 5G Security
- Security Issues Related to Mobile Device Management
- Malicious Software and Android Security
- Security and Privacy in Cloud Computing
- Wireless Sensor Network Security
- Security Compliance for Mobile and Cloud Computing Services
- Cloud Virtual Machine Setup and Security Configuration
- Virtual Cyber-attack and Defence Experiments

Values:

- V1.** Value the need for security in mobile cloud computing.
- V2.** Appreciate the role of security and privacy policies for mobile and cloud services.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the [Higher Education Graduate Attributes Policy](#) (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

| Graduate attribute and descriptor | | Development and acquisition of GAs in the course | |
|-----------------------------------|--|--|-----------------------|
| | | Learning Outcomes (KSA) | Assessment task (AT#) |
| GA 1 Thinkers | Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions. | K1, K3, K4, S1 | AT1,AT2,AT3 |
| GA 2 Innovators | Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change. | S5 | AT1,AT2,AT3 |
| GA 3 Citizens | Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately. | K2, K5, S2,S3, A1, A4 | AT1,AT2,AT3 |
| GA 4 Communicators | Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand. | A3 | AT1,AT2,AT3 |
| GA 5 Leaders | Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices. | S4, S5, A2 | AT1,AT2,AT3 |

Learning Task and Assessment:

| Learning Outcomes Assessed | Learning Tasks | Assessment Type | Weighting |
|----------------------------|---|-------------------------------|-----------|
| K1 - K5, S1 - S5, A1 - A4 | The tasks will develop skills in the analysis and practical application of content introduced. | Lab(s)/Tutorial(s) | 30% - 50% |
| K1 - K5, S1 - S5, A1 - A4 | Self directed initiatives aimed at producing an artifact that demonstrates skill acquisition. | Assignment(s)/Presentation(s) | 30% - 50% |
| K1 - K5, S1 - S5, A1 - A4 | Participate in lectures and labs/tutorials, read and summarise theoretical and practical aspects of the course. | Examination(s)/Test(s) | 20% - 30% |

Adopted Reference Style:

APA

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)