



Specialisation

# e-Commerce Systems

COMPES | 96 Units of Credit

## Overview

e-Commerce systems provide the IT infrastructure for developing and managing enterprise applications. Typical applications concern both B2C (Business-to-Customer) and B2B (Business-to-Business). They include e-government, e-banking, and e-health. e-Commerce systems engineering requires the understanding of the requirements of business processes (e.g., security, public policy, project management) and the effective use of the IT infrastructure for implementation. The development of e-enterprise systems must also take into consideration technological, managerial, and legal aspects.

In order to capitalise on opportunities in the emerging digital economy, organisations are re-inventing themselves as e-enterprises. More importantly, both business and government organisations need skilled IT professionals in e-commerce systems engineering to provide necessary IT support.

The e-Commerce Systems stream in the Graduate Diploma and Master of Information Technology programs exposes students to the foundations of e-Commerce systems and architectures, and to software engineering principles and techniques for building and managing such systems. The major also provides interdisciplinary background in the areas of e-Commerce management and policy, covering the legal aspect of e-Commerce, and effectively integrating all components in the development of e-enterprise systems. Students will be given the opportunity to put theory into practice by designing and implementing a large e-enterprise system.

**Faculty**

Faculty of Engineering

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**School**

School of Computer Science and Engineering

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**Study Level**

Postgraduate

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**Minimum Units of Credit**

96

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**Specialisation Type**

Specialisation

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## Available in Program(s)

Program(s) in which this specialisation is available

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Master of Information Technology - **MIT**

**8543 Information Technology**

Faculty: Faculty of Engineering

Campus: Kensington

Units of Credit: 96

Typical Duration: 2 Years

# Specialisation Structure

Students must complete 96 UOC.

## Core Courses

Students must take 36 UOC of the following courses.

COMP9021 | 6 UOC

Principles of Programming

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COMP9024 | 6 UOC

Data Structures and Algorithms

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COMP9311 | 6 UOC

Database Systems

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COMP9331 | 6 UOC

Computer Networks and Applications

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COMP9900 | 6 UOC

Information Technology Project

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GSOE9820 | 6 UOC

Engineering Project Management

## Disciplinary Electives

Students must take 42 UOC of the following courses.

Note: With approval of program authority, students may choose up to two Level 4 or higher elective courses outside of the School of Computer Science and Engineering. These courses are listed under "Non-Computing Electives".

BINF9010 | 6 UOC

Applied Bioinformatics

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BINF9020 | 6 UOC

COMP4121 | 6 UOC

Advanced and Parallel Algorithms

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COMP4141 | 6 UOC

Theory of Computation

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COMP4161 | 6 UOC

Advanced Topics in Software Verification

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COMP4418 | 6 UOC

Knowledge Representation and Reasoning

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COMP6324 | 6 UOC

Internet of Things Service Design and Engineering

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COMP6441 | 6 UOC

Security Engineering and Cyber Security

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COMP6443 | 6 UOC

Web Application Security and Testing

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COMP6445 | 6 UOC

Digital Forensics

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COMP6447 | 6 UOC

System and Software Security Assessment

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COMP6448 | 6 UOC

Security Engineering Masterclass

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COMP6714 | 6 UOC

Information Retrieval and Web Search

COMP6733 | 6 UOC

Internet of Things Experimental Design Studio

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COMP6741 | 6 UOC

Parameterized and Exact Computation

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COMP6752 | 6 UOC

Modelling Concurrent Systems

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COMP6771 | 6 UOC

Advanced C++ Programming

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COMP6841 | 6 UOC

Extended Security Engineering and Cyber Security

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COMP6843 | 6 UOC

Extended Web Application Security and Testing

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COMP6845 | 6 UOC

Extended Digital Forensics and Incident Response

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COMP9020 | 6 UOC

Foundations of Computer Science

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COMP9021 | 6 UOC

Principles of Programming

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COMP9024 | 6 UOC

Data Structures and Algorithms

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COMP9032 | 6 UOC

Microprocessors and Interfacing

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COMP9044 | 6 UOC

Software Construction: Techniques and Tools

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COMP9101 | 6 UOC

Design and Analysis of Algorithms

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COMP9102 | 6 UOC

Programming Languages and Compilers

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COMP9153 | 6 UOC

Algorithmic Verification

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COMP9154 | 6 UOC

Foundations of Concurrency

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COMP9164 | 6 UOC

Concepts of Programming Languages

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COMP9201 | 6 UOC

Operating Systems

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COMP9211 | 6 UOC

Computer Architecture

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COMP9222 | 6 UOC

Digital Circuits and Systems

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COMP9242 | 6 UOC

Advanced Operating Systems

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COMP9243 | 6 UOC

Distributed Systems

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COMP9283 | 6 UOC

Extended Operating Systems

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COMP9311 | 6 UOC

## Database Systems

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COMP9313 | 6 UOC

Big Data Management

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COMP9315 | 6 UOC

Database Systems Implementation

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COMP9318 | 6 UOC

Data Warehousing and Data Mining

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COMP9319 | 6 UOC

Web Data Compression and Search

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COMP9331 | 6 UOC

Computer Networks and Applications

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COMP9332 | 6 UOC

Network Routing and Switching

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COMP9334 | 6 UOC

Capacity Planning of Computer Systems and Networks

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COMP9336 | 6 UOC

Mobile Data Networking

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COMP9337 | 6 UOC

Securing Fixed and Wireless Networks

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COMP9414 | 6 UOC

Artificial Intelligence

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COMP9415 | 6 UOC

Computer Graphics



COMP9417 | 6 UOC

Machine Learning and Data Mining

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COMP9418 | 6 UOC

Advanced Topics in Statistical Machine Learning

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COMP9434 | 6 UOC

Robotic Software Architecture

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COMP9444 | 6 UOC

Neural Networks and Deep Learning

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COMP9447 | 6 UOC

Security Engineering Workshop

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COMP9511 | 6 UOC

Human Computer Interaction

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COMP9517 | 6 UOC

Computer Vision

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COMP9801 | 6 UOC

Extended Design & Analysis of Algorithms

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COMP9814 | 6 UOC

Extended Artificial Intelligence

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GSOE9210 | 6 UOC

Engineering Decision Structures

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GSOE9220 | 6 UOC

Launching a Startup

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GSOE9820 | 6 UOC

Engineering Project Management

## Prescribed Electives

Students must take 18 UOC of the following courses.

Note: Students must apply to enrol in GBAT9117 6 weeks prior to the start of semester by submitting a MBT Cross Program Enrolment form to the School of Computer Science & Engineering Student Office. Enrolment may be subject to relevant work experience. A resume must be attached to the application.

ACCT5922 | 6 UOC

E-Business: Strategy and Processes

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COMP6324 | 6 UOC

Internet of Things Service Design and Engineering

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COMP6452 | 6 UOC

Software Architecture for Blockchain Applications

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COMP9313 | 6 UOC

Big Data Management

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COMP9321 | 6 UOC

Data Services Engineering

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COMP9322 | 6 UOC

Software Service Design and Engineering

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COMP9323 | 6 UOC

Software as a Service Project

## Project Option

Students can substitute COMP9900 and 6 or 12 UOC of Advanced Disciplinary Knowledge courses with the following research project course combinations subject to meeting the following criteria:

- completed (or have advanced standing in) 72 UOC; and
- obtained agreement from a CSE academic supervisor; and
- maintained a distinction level performance in the program.

Students who complete these research projects are not required to complete COMP9900 Information Technology Project.

COMP9991 | 6 UOC

Research Project A

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COMP9992 | 6 UOC

Research Project B

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COMP9993 | 12 UOC

Research Project C

### **Advanced Disciplinary Knowledge (ADK) Requirement**

At least 36 UOC of Disciplinary Elective, Prescribed Elective and/or Non-Computing Elective courses chosen must be taken from the following Advanced Disciplinary Knowledge Course List.

COMP4121 | 6 UOC

Advanced and Parallel Algorithms

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COMP4161 | 6 UOC

Advanced Topics in Software Verification

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COMP4418 | 6 UOC

Knowledge Representation and Reasoning

---

COMP6445 | 6 UOC

Digital Forensics

---

COMP6447 | 6 UOC

System and Software Security Assessment

---

COMP6448 | 6 UOC

Security Engineering Masterclass

---

COMP6714 | 6 UOC

Information Retrieval and Web Search

---

COMP6733 | 6 UOC

Internet of Things Experimental Design Studio

---

COMP6741 | 6 UOC

Parameterized and Exact Computation

---

COMP6752 | 6 UOC

Modelling Concurrent Systems

---

COMP6771 | 6 UOC

Advanced C++ Programming

---

COMP6845 | 6 UOC

Extended Digital Forensics and Incident Response

---

COMP9153 | 6 UOC

Algorithmic Verification

---

COMP9242 | 6 UOC

Advanced Operating Systems

---

COMP9243 | 6 UOC

Distributed Systems

---

COMP9315 | 6 UOC

Database Systems Implementation

---

COMP9318 | 6 UOC

Data Warehousing and Data Mining

---

COMP9319 | 6 UOC

Web Data Compression and Search

---

COMP9323 | 6 UOC

## Software as a Service Project

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COMP9334 | 6 UOC

Capacity Planning of Computer Systems and Networks

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COMP9336 | 6 UOC

Mobile Data Networking

---

COMP9337 | 6 UOC

Securing Fixed and Wireless Networks

---

COMP9417 | 6 UOC

Machine Learning and Data Mining

---

COMP9418 | 6 UOC

Advanced Topics in Statistical Machine Learning

---

COMP9434 | 6 UOC

Robotic Software Architecture

---

COMP9444 | 6 UOC

Neural Networks and Deep Learning

---

COMP9517 | 6 UOC

Computer Vision

---

COMP9900 | 6 UOC

Information Technology Project

---

COMP9991 | 6 UOC

Research Project A

---

COMP9992 | 6 UOC

Research Project B

COMP9993 | 12 UOC

Research Project C

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GEOS9016 | 6 UOC

Principles of Geographic Information Systems and Science

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GMAT9200 | 6 UOC

Principles of GPS Positioning

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GMAT9300 | 6 UOC

Aerial and Satellite Imaging Systems

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GMAT9600 | 6 UOC

Principles of Remote Sensing

## **NON-COMPUTING ELECTIVES**

The following courses are outside the School of Computer Science and Engineering (CSE) and may be taken with approval from the program authority and within the maximum 12 UOC Level 4 or higher elective courses outside of the CSE rule.

ENGG3060 | 3 UOC

Maker Games

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GEOS9016 | 6 UOC

Principles of Geographic Information Systems and Science

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GMAT9200 | 6 UOC

Principles of GPS Positioning

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GMAT9205 | 6 UOC

Fundamentals of Geopositioning

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GMAT9211 | 6 UOC

Modern Geodesy and Applications

GMAT9300 | 6 UOC

Aerial and Satellite Imaging Systems

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GMAT9600 | 6 UOC

Principles of Remote Sensing

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GMAT9606 | 6 UOC

Microwave Remote Sensing

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GSOE9010 | 6 UOC

Engineering Postgraduate Coursework Research Skills

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GSOE9011 | 6 UOC

Engineering Postgraduate Coursework Research Skills

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GSOE9758 | 6 UOC

Network Systems Architecture

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INFS5885 | 6 UOC

e-Business

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MARK5826 | 6 UOC

Product Analytics

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MARK5827 | 6 UOC

Customer Analytics

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MARK5828 | 6 UOC

Advertising Analytics

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MATH5836 | 6 UOC

Data Mining and its Business Applications

---

MATH5845 | 6 UOC

Time Series

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MATH5846 | 6 UOC

Introduction to Probability and Stochastic Processes

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MATH5855 | 6 UOC

Multivariate Analysis

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MATH5856 | 6 UOC

Introduction to Statistics and Statistical Computations

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MATH5905 | 6 UOC

Statistical Inference

---

MATH5960 | 6 UOC

Bayesian Inference and Computation

---

MBAX9117 | 6 UOC

E-Business Strategy & Management

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TELE9751 | 6 UOC

Switching Systems Architecture

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TELE9752 | 6 UOC

Network Operations and Control

---

TELE9753 | 6 UOC

Advanced Wireless Communications

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TELE9754 | 6 UOC

Coding and Information Theory

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### **Enrolment Disclaimer**

Unless advised otherwise by your program authority, you should follow the rules for the handbook for the year you commenced your program. You are also responsible for ensuring you enrol in courses according to your program requirements. myUNSW



enrolment checks that you have met enrolment requirements such as pre-requisites for individual courses but not that a course will count towards your program requirements.

## **Pre-2019 Handbook Editions**

Access past handbook editions (2018 and prior)

[Pre-2019 Handbook Editions](#)

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Authorised by Deputy Vice-Chancellor (Academic)

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