COURSE OUTLINE

CSC203 Software Defined Networking

School: School of Science, Technology and Engineering

2026 | Trimester 2

UniSC Moreton Bay | BLENDED LEARNING | Most of your course is on campus but you may be able to do some components of this course online.

Please go to unisc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

The modern age is built on seamless and seemingly limit-less networks of technology. In this course you will learn how to build, evaluate, and maintain software defined networks (SDN) that make that possible. Covering topics including data and control plane abstraction and virtualization, network extensibility, automation, security, and scalability. You will gain hands-on experience in SDN, network function virtualisation (NFV) and network application development. You will also develop sought after skills applied in cutting edge technologies.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Asynchronous Learning Material	2hrs	Week 1	12 times
Tutorial/Workshop 1 – On-campus workshop	2hrs	Week 1	12 times

1.3. Course Topics

Introduction to and Genesis of SDN

Basic Architecture of SDN

The OpenFlow Specification

Alternative Definitions of SDN

Emerging Protocol, Controller, and Application Models

SDN in the Data Centre and other Environments

Network Functions Virtualisation

Players in the SDN Ecosystem

SDN Use Cases

SDN Open Source

Future of SDN

2. What level is this course?

200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Demonstrate advanced knowledge of networking concepts and practice extended into software defined networking.	Knowledgeable
2	Select, develop and adapt programming constructs (built to coding and documentation standards) to create solutions to complex computer networking challenges.	Creative and critical thinker Empowered
3	Analyse and evaluate ethical, privacy, security and safety concerns in a software defined networking context	Ethical
4	Communicate software defined networks through writing reports, design documentation and specifications	Engaged
5	Work as part of a team to produce quality computing artefacts and outcomes.	Engaged

5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

ICT220 and ICT221

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

5.5. Microcredential Information

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

Students will complete individual weekly workshop activities under the guidance of the workshop facilitator, providing opportunity for rapid formative feedback throughout the trimester. Moreover portions 1 and 2 of Task 1 will be submitted, marked and returned with detailed feedback prior to census date.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Portfolio	Individual	20%	Approx 300 words each	Refer to Format	Online Assignment Submission with plagiarism check
All	2	Case Study	Group	40%	3000 words	Week 10	Online Assignment Submission with plagiarism check
All	3	Practical / Laboratory Skills	Individual	40%	90 minutes	Week 12	Online Assignment Submission with plagiarism check

All - Assessment Task 1: SDN Topics and Experiences

GOAL:	To develop your ability to design, develop, document and debug software defined networking problems and approximate tasks a networking consultant may do in industry.
PRODUCT:	Portfolio
AUTHORSHIP STATEMENT:	
FORMAT:	You will submit weekly responses to stimulus materials provided in the LMS Learning Materials. Activities will include theoretical problem solving as well as programming, debugging and/or documentation to solve a series of small case study problems. Each submission will be the equivalent 300 words of text, code or documentation (note some code or documentation may be supplied). Due Weeks 3, 5, 7 and 9
CRITERIA:	

No.		Learning Outcome assessed
1	Demonstration of software defined networking concepts	1
2	Selection and or development of appropriate programming constructs to create or correct software defined networking applications	2
3	Programming and documentation style	2

GENERIC SKILLS:	

All - Assessment Task 2: Connection Mastery

GOAL:	This task will provide a real-world experience solving a software defined networking problem for an industry case study.
PRODUCT:	Case Study
AUTHORSHIP STATEMENT:	
FORMAT:	You will submit a technical report explaining SDN solutions for a specified industry case study. Further details will be available on LMS in the assignment specification.

CRITERIA:

No.		Learning Outcome assessed
1	Demonstration of advanced software defined networking concepts	1
2	Innovation, creativity and appropriateness of specification, design and solution	2
3	Written communication: report, programming documentation and style	2 4
4	Analysis and evaluation of solutions for societal impact and ethical considerations.	3
5	Individual team work and performance (including Peer assessment)	5
6	Team organisation	5

GENERIC SKILLS:	Problem solving, Applying technologies, Information literacy

All - Assessment Task 3: SDN Skills Demonstration

GOAL:	The final practical exam will develop your ability to independently apply your skills and knowledge to solve familiar problem based questions with confidence within a set time limit just like a networking consultant working at a client's office
PRODUCT:	Practical / Laboratory Skills
AUTHORSHIP STATEMENT:	
FORMAT:	Practical examination composed of a small set of SDN programming and documentation problems that the student must solve. Material based on tutorial activities and questions.

CRITERIA:

No.		Learning Outcome assessed
1	Demonstration of advanced networking and software defined network concepts	1
2	Selection and or development of appropriate programming constructs to create or correct software defined networking applications	2
3	Programming and documentation style	2

GENERIC SKILLS:	Problem solving, Applying technologies, Information literacy

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

You need regular access to the resource(s) below. Many texts are available as ebooks through the Library at no additional cost.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Recommended	Paul Goransson,Chuck Black,Timothy Culver	2016	Software Defined Networks	n/a	Morgan Kaufmann
Recommended	Guy Pujolle	2020	Software Networks	n/a	John Wiley & Sons

8.2. Specific requirements

Not applicable

9. How are risks managed in this course?

Risk assessments have been performed for all studio and laboratory classes and a low level of health and safety risk exists. Some risk concerns may include equipment, instruments, and tools; as well as manual handling items within the laboratory. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:
(a) The final mark is in the percentage range 47% to 49.4%; and
(b) The course is graded using the Standard Grading scale

10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:
(a) One day: deduct 5%;
(b) Two days: deduct 10%;
(c) Three days: deduct 20%;
(d) Four days: deduct 40%;
(e) Five days: deduct 60%;
(f) Six days: deduct 80%;
(g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:
Less than 15 minutes: No penalty
From 15 minutes to 30 minutes: 20% penalty
More than 30 minutes: 100% penalty

10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.5. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- UniSC Student Central
- UniSC Adelaide Student Central