



COMP2320

Offensive Security

Session 1, In person-scheduled-weekday, North Ryde 2024

School of Computing

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Disclaimer

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General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

Corequisites

(COMP2110 or COMP249) and (COMP2250 or COMP247) and (COMP2300 or COMP343)

Co-badged status

COMP6320

Unit description

This unit provides an introduction to ethical hacking and offensive security. Strong emphasis is given to ethics and ethical behaviour as students are exposed to penetration techniques and methods. In other words, students are taught how to systematically look for and exploit vulnerabilities in software, protocols and systems in order to report those vulnerabilities and improve the safety of those software, protocols and systems. Communication, in speaking and writing plays a critical role in this unit. The most proficient students in this unit may be selected to represent the University at various national pentesting competitions and challenges.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

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

ULO1: Explain the importance of ethics and ethical behaviour in relation to offensive security and penetration testing.

ULO2: Perform scoping, vulnerability scanning and reconnaissance on a range of devices, platforms, protocols, systems and organisations.

ULO3: Exploit vulnerabilities for a range of purposes, including access control, payload

delivery and privilege escalation.

ULO4: Effectively communicate results verbally and in-writing to technical and non-technical audiences.

General Assessment Information

Requirements to Pass this Unit

To pass this unit you must:

1. Attempt all assessments, and
2. Achieve a total mark equal to or greater than 50%.

There are no hurdle requirements for the unit.

Late Assessment Submission

Late assessments are not accepted in this unit unless a Special Consideration has been submitted and approved.

Special Consideration

The Special Consideration Policy aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment.

Practical Exams and Group Presentations: If you experience circumstances or events that affect your ability to participate at the scheduled time in either the group presentation or any of the practical exams you must inform the convenor as soon as is possible, and submit a Special Consideration request through ask.mq.edu.au. Given the group nature of these assessments your entire group *may* be given an alternative time and date for the assessment.

Practical Exam Reports: If you experience circumstances or events that affect your ability to complete the written exam reports in this unit on time, please inform the convenor and submit a Special Consideration request through ask.mq.edu.au.

Weekly practice-based tasks: Your mark for this components is calculated by summing the best 6 out of 9 of the marks for the weekly in-class exercises. As such you should only apply for special consideration if you miss more than three of these practical classes.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>In-class exercises</u>	30%	No	Weeks 1, 2, 3, 4, 5, 8, 10, 11, and 12
<u>Research and Presentation</u>	10%	No	Week 6
<u>Practical exams</u>	60%	No	Weeks 7, 9, and 13

In-class exercises

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 15 hours

Due: **Weeks 1, 2, 3, 4, 5, 8, 10, 11, and 12**

Weighting: **30%**

During workshops, you will be set an in-class exercise related to that week's lecture topic to complete during the class. No late submissions are accepted.

On successful completion you will be able to:

- Explain the importance of ethics and ethical behaviour in relation to offensive security and penetration testing.
- Perform scoping, vulnerability scanning and reconnaissance on a range of devices, platforms, protocols, systems and organisations.
- Exploit vulnerabilities for a range of purposes, including access control, payload delivery and privilege escalation.

Research and Presentation

Assessment Type ¹: Presentation

Indicative Time on Task ²: 5 hours

Due: **Week 6**

Weighting: **10%**

Student groups will research a well known vulnerability (chosen by the teaching staff) and provide a presentation and demonstration of the vulnerability. Each presentation will be followed by a brief question-and-answer session.

On successful completion you will be able to:

- Explain the importance of ethics and ethical behaviour in relation to offensive security and penetration testing.
- Effectively communicate results verbally and in-writing to technical and non-technical audiences.

Practical exams

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 30 hours

Due: **Weeks 7, 9, and 13**

Weighting: **60%**

Practical exams will be conducted during the semester as group exercises. Students will be required to submit a report following each exam for individual assessment. Formative feedback will be given with students being able to improve their marks as the semester progresses.

On successful completion you will be able to:

- Perform scoping, vulnerability scanning and reconnaissance on a range of devices, platforms, protocols, systems and organisations.
- Exploit vulnerabilities for a range of purposes, including access control, payload delivery and privilege escalation.
- Effectively communicate results verbally and in-writing to technical and non-technical audiences.

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Week 1

Each week you should attend two hours of lectures, and a two hour practical workshop. For details of scheduled classes consult the [timetables webpage](#).

Note that both the lectures and practicals workshops (lab sessions) commence in **week 1**. The week-by-week details of the practical (lab) classes will be available from iLearn.

You must only attend the practical that you are enrolled in.

Textbook and Reading Materials

COMP2320 is a practice-oriented unit and as such the practical exercises and lecture notes make up the bulk of the learning material. Additional reading materials will be provided on iLearn as required.

Unit Websites

COMP2320 is administered via [iLearn \(http://ilearn.mq.edu.au/\)](http://ilearn.mq.edu.au/).

This unit outline can be found in the university's [unit guides](#)

Lecture Recordings

Digital recordings of lectures may be available. They will be linked from iLearn.

Technologies Used and Required

COMP2320 is a BYOD (Bring Your Own Device) unit. You will be expected to bring your own laptop computer (Windows, Mac, or Linux) to the workshop, install and configure the required software, and incorporate secure practices into your daily work (and play!) routines. The laptop must be capable of running a Kali Linux virtual machine. At a minimum your laptop should have 120GB of free disk space, 8GB of memory, and 4 CPU cores.

General Notes

In this unit, you should do the following:

- Review recorded lecture materials.
- Attend your weekly Practical session.
- Attend lectures, take notes, ask questions.
- Work on any assignments that have been released.

Note that Workshops commence in week 1. Please note that you will be required to submit work every week.

Communication Methods in COMP2320

All announcements about unit-related matters will be communicated through iLearn. It is the student's responsibility to ensure they check iLearn announcements, forums and FAQ sections regularly.

Students are encouraged to use the iLearn forums for asking questions about unit content and concepts. Where questions are about specific details in an assessment submission, this may need to be sent via a private forum post in the first instance (details are provided in iLearn about how this is set up) so as not to be at risk of breaching the university academic integrity policy.

Students should use the appropriate iLearn forms for contacting staff. There may be occasions where unit staff will email a student directly to their @students.mq.edu.au email address. It is the student's responsibility to ensure they check their official university email regularly for communications from the university staff.

COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: <https://www.mq.edu.au/about/coronavirus-faqs>. Remember to check this page regularly in case the information and requirements change

during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://stu>

dents.mq.edu.au/support/

The Writing Centre

The [Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Changes from Previous Offering

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching

staff directly, or via the FSE Student Experience & Feedback link in the iLearn page.

Student feedback from the previous offering of this unit was very positive overall, with students pleased with the clarity around assessment requirements and the level of support from teaching staff. As such, no change to the delivery of the unit is planned, however we will continue to strive to improve the level of support and the level of student engagement.

Unit information based on version 2024.02 of the [Handbook](#)