UNIVERSITY OF WOLLONGONG AUSTRALIA

SCIT

School of Computing and Information Technology

Faculty of Engineering & Information Sciences

Head of School Senior Professor Willy Susilo

EIS Central

Tel: (02) 4221 3491

CSCI235 Database Systems

Subject Outline

Spring Session 2020

This subject has been adjusted for remote delivery in Spring Session in 2020 due to the Coronavirus Pandemic.

Consultation Times

Subject Coordinator/Wollongong and SWS Campuses	Dr Janusz Getta
Telephone Number:	024221 4339
Email:	jrg@uow.edu.au

Location:	3.210

Dr Getta's consultation times during session:

Day	Time
Tuesday	10.30am - 12.30pm
Thursday	8.30am - 10.30am

Subject Organisation

Session:	Spring Session 2020, Wollongong Campus / SWS Campus
Credit Points	6
Contact hours per week:	3 hours Lecture, 2 hours Comp Lab
Lecture Times & Location:	http://www.uow.edu.au/student/timetables/index.html

Subject eLearning

The University uses the eLearning system Moodle to support all coursework subjects.

To access eLearning you must have a UOW user account name and password, and be enrolled in the subject. eLearning is accessed via SOLS (Student Online Service). Log on to SOLS and then click on the eLearning link in the menu column.

The University is committed to providing a safe, respectful, equitable and orderly environment for the University community, and expects each member of that community to behave responsibly and ethically. Students must comply with the University's Student Conduct Rules - https://documents.uow.edu.au/about/policy/UOW058723.html and related policies including the IT Acceptable Use Policy - https://documents.uow.edu.au/about/policy/uow002319.html and Bullying Prevention Policy, https://documents.uow.edu.au/about/policy/uow066134.html , whether undertaking their studies face-to-face, online or remotely. For more information on appropriate communication and etiquette in the online environment please refer to the guide Online and Email Etiquette - https://tr.uow.edu.au/uow/file/976ffde2-b892-42cf-b20b5c7a65bc08cc/1/Overview%20of%20Online%20and%20Email%20Etiquette.pdf

Students should check the subject's Moodle site regularly as important information, including **details of unavoidable changes in assessment requirements will be posted from time to time via Moodle space** http://www.uow.edu.au/student/ . Any information posted to the web site is deemed to have been notified to all students.

Extraordinary Changes to the Subject Outline

In extraordinary circumstances the provisions stipulated in this Subject Outline may require amendment after the Subject Outline has been distributed. All students enrolled in the subject must be notified and have the opportunity to provide feedback in relation to the proposed amendment, where practicable, prior to the amendment being finalised.

Learning Analytics

Data on student performance and engagement (such as Moodle and University Library usage, task marks, use of SOLS) will be available to the Subject Coordinator to assist in analysing student engagement, and to identify and recommend support to students who may be at risk of failure. If you have questions about the kinds of data the University uses, how we collect it, and how we protect your privacy in the use of this data, please refer to https://www.uow.edu.au/about/privacy/index.html

Subject Description

The subject presents advanced topics in the modern relational database technology and it introduces the new non-relational (NoSQL) database technologies. The relational database technology component of the subject includes database normalization, introduction to indexing in relational database systems, programming of relational database server with stored PL/SQL procedures, functions, and triggers, concurrency control and database recovery techniques, design and programming of distributed database systems. The non-relational (NoSQL) database technology component of the subject includes a review of non-relational data models such as the key-value data model, document-oriented model, column-family stores, and graph data model. The non-relational component of the subject presents the new approaches to database design, data distribution, consistency preserving, and transaction processing in distributed and clustered database systems. Programming of NoSQL database server includes the new data definition and data manipulation languages, a new query language, indexing, design and implementation of replication and sharding.

Subject Learning Outcomes

On successful completion of this subject, students will be able to:
1. Adapt a theory of relational database normalization to prove the correctness of relational database designs
2. Design and create stored procedures, stored functions and database triggers in advanced SQL and in PL/SQL, apply indexing to improve performance of relational database applications
3. Design and create effective database transaction based on the principles of transaction processing and theory of concurrency in database systems
4. Summarise the principles of distributed database systems, design and create distributed relational databases
5. Summarise the principles of modern non-relational (NoSQL) database technologies, design and create key-value and document oriented database systems
6. Design and implement modern non-relational (NoSQL) database systems, apply indexing to improve performance of database applications, use replication and sharding to design and to implement more reliable and more efficient database applications

Recent Improvements

Subject Changes and Response to Student Feedback

The School is committed to continual improvement in teaching and learning and takes into consideration student feedback from many sources. These sources include direct student feedback to casual academics and lecturers, feedback through Student Services and the Faculty Central, and responses to the Subject Evaluation Surveys. This information is also used to inform comprehensive reviews of subjects and courses.

Computing technologies: The latest version of Oracle DBMS (Oracle 19c) and a new method of remotely accessing the system over VPN (SQLcl command line interface, SQLDeveleper) and a virtual machine with Oracle 19c installed on Oracle Linux 7.4.

Subject teaching materials: A revised version of Cookbook and three revised presentations on the design of BSON documents, on validation of BSON documents, and on aggregation framework in MongoDB.

Attendance Requirements

Student Workload

Students should note that UOW policy equates 1 credit point with 2 hours of study per week, including lectures and workshops/practicals, self-directed study and work no assessment tasks. For example, in a 6 credit point subject, a total of 12 hours of study per week is expected.

Minimum Attendance Requirements

Satisfactory attendance is deemed by the University, to be attendance at approximately 80% of the allocated contact hours. Where attendance is affected due to compassionate, compelling, or extenuating circumstances an application for academic consideration application should be lodged. Failure to comply with mandatory minimum attendance requirements may constitute grounds for the award of a grade of Technical Fail (TF) in this subject.

Refer to new Coursework Rules and to reflect the Academic Consideration Policy and Compassionate and Compelling Circumstances Guidelines https://documents.uow.edu.au/about/policy/UOW262890.html

Optional Attendence Statement

Attendance rolls may be kept for lectures and laboratories. If you are present for less than 80% and would have otherwise passed you need to apply for student academic consideration, otherwise a TF (technical fail) grade may be recorded.

Method of Presentation

Lecture Recordings

The University of Wollongong supports the recording of lectures as a supplemental study tool, to provide students with equity of access, and as a technology-enriched learning strategy to enhance the student experience.

If you make your own recording of a lecture you can only do so with the explicit permission of the lecturer and those people who are also being recorded.

You may only use recorded lectures, whether they are your own or recorded by the university, for your own educational purposes. Recordings cannot be altered, shared or published on another platform, without permission of the University, and to do so may contravene the University's Copyright Policy, Privacy Policy, Intellectual Property Policy, IT Acceptable Use Policy and Student Conduct Rules. Unauthorised sharing of recordings may also involve a breach of law under the Copyright Act 1969.

Most lectures in this subject will be recorded, when they are scheduled in the lecturer office, and made available via the subject Moodle site with 48 hours.

Lecture Schedule

This is a guide to the weekly lecture topics however the delivery date of these topics may on occasion vary due to unforeseen circumstances, such as the availability of a guest lecturer or access to other resources.

Week Beginning (Monday)	**Lecture Topics**	**Workshop/Laboratory**	**Readings/ Other Subject Information**	**Task Due**
Week 1 (3 August)	Subject outline, Database design quality, Functional dependencies	none	Lecture slides, Cookbook, [1], [2],[3]	none
Week 2 (10 August)	Database normalization, Normalization in practice	Laboratory 1	Lecture slides, [1],[2]	Laboratory 1, 15 August, 2020, 7pm (sharp)
Week 3 (17 August)	Higher level normal forms, Introduction to indexing,Introduction to host langugage PL/SQL	Laboratory 2	Lecture slides, [1],[2],[4],[5], [8] Cookbook	Laboratory 2, 22 August, 2020, 7pm (sharp)
Week 4 (24 August)	Stored procedures and functions, Database triggers	Assignment 1	Lecture slides, [5], [8],Cookbook	none
Week 5 (31 August)	Introduction to transaction processing in database systems	Assignment 1	Lecture slides, [1],[2]	Assignment 1, 5 September, 2020, 7pm (sharp)
Week 6 (7 September)	Transaction processing in ANSI SQL standard, Transaction processing in Oracle (snapshot isolation protocol)	Laboratory 3	Lecture slides, [1],[2],[8], Cookbook	Laboratory 3, 12 September,

				2020, 7pm (sharp)
Week 7 (14 September)	Distributed database systems, Transaction processing in distributed database systems, Principles of NoSQL database systems	Laboratory 4	Lecture slides, [1],[2],[6], Cookbook	Laboratory 4, 19 September, 2020, 7pm (sharp)
Week 8 (21 September)	JSON and BSON data models, Implemenatation of BSON data model in MongoDB database system	Assignment 2	Lecture slides, [6],[7],[9]	none
Recess Week (28 September/2 October)				
Lab and prac make-up period (5 to 9 October)				
Week 9 (12 October)	Data manipulation language and query language in NoSQL database system (MongoDB database system)	Assignment 2	Lecture slides, [7],[8],[9]	Assignment 2, 17 October, 2020, 7pm (sharp)
Week 10 (19 October)	JSON Schema, Design of BSON documents	Laboratory 5	Lecture slides, [7],[8],[9]	Laboratory 5, 24 October, 2020, 7pm (sharp)
Week 11 (26 October)	Design of BSON documents, Aggregation framework in NoSQL database system (MongoDB database system)	Laboratory 6	Lecture slides, [7],[8],[9]	Laboratory 6, 31 October, 2020, 7pm (sharp)
Week 12 (2 November)	Aggregation framework and replication in NoSQL database system (MongoDB database system)	Assignment 3	Lecture slides, [7],[8],[9]	none
Week 13 (9 November)	Sharding in NoSQL database system (MongoDB database system), Database systems implementing other non-relational data models	Assignment 3	Lecture slides, [6],[7],[8],[9]	Assignment 3, 14 November, 2020, 7pm (sharp)
STUDY RECESS - 16 - 20 November				
EXAMS - 21 November to 3 December				Final Project, during the final examination session

CHECK SOLS FOR EXAM TIMETABLE				

UOW Grade Descriptors

GRADE	DESCRIPTOR
High Distinction(HD) 85-100%	For performance that provides evidence of an outstanding level of attainment of the relevant subject learning outcomes, demonstrating the attributes of a distinction grade plus (as applicable) one or more of the following: • consistent evidence of deep and critical understanding • substantial originality and insight in identifying, generating and communicating competing arguments, perspectives or problem-solving approaches • critical evaluation of problems, their solutions and their implications • use of quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work • creativity in application as appropriate to the discipline • eloquent and sophisticated communication of information and ideas in terms of the conventions of the discipline • consistent application of appropriate skills, techniques and methods with outstanding levels of precision and accuracy • all or almost all answers correct, very few or none incorrect
Distinction (D) 75-84%	For performance that provides evidence of a superior level of attainment of the relevant subject learning outcomes, demonstrating the attributes of a credit grade plus (as applicable) one or more of the following: • evidence of integration and evaluation of critical ideas, principles, concepts and/or theories • distinctive insight and ability in applying relevant skills, techniques, methods and/or concepts • demonstration of frequent originality in defining and analysing issues or problems and providing solutions • fluent and thorough communication of information and ideas in terms of the conventions of the discipline • frequent application of appropriate skills, techniques and methods with superior levels of precision and accuracy • most answers correct, few incorrect
Credit (C) 65-74%	For performance that provides evidence of a high level of attainment of the relevant subject learning outcomes, demonstrating the attributes of a pass grade plus (as applicable) one or more of the following:

	• evidence of learning that goes beyond replication of content knowledge or skills • demonstration of solid understanding of fundamental concepts in the field of study • demonstration of the ability to apply these concepts in a variety of contexts • use of convincing arguments with appropriate coherent and logical reasoning • clear communication of information and ideas in terms of the conventions of the discipline • regular application of appropriate skills, techniques and methods with high levels of precision and accuracy • many answers correct, some incorrect
Pass (P) 50-64%	For performance that provides evidence of a satisfactory level attainment of the relevant subject learning outcomes, demonstrating (as applicable) one or more of the following: • knowledge, understanding and application of fundamental concepts of the field of study • use of routine arguments with acceptable reasoning • adequate communication of information and ideas in terms of the conventions of the discipline • ability to apply appropriate skills, techniques and methods with satisfactory levels of precision and accuracy • a combination of correct and incorrect answers
Fail (F) <50%	For performance that does not provide sufficient evidence of attainment of the relevant subject learning outcomes.
Technical Fail (TF)	When minimum performance level requirements for at least one assessment item in the subject as a whole has not been met despite the student achieving at least a satisfactory level of attainment of the subject learning outcomes.

The UOW Grade Descriptors are general statements that communicate what our grades represent, in terms of standards of performance, and provide a frame of reference to ensure that assessment practice across the University is appropriate, consistent and fair. Grade Descriptors are expressed in general terms so that they are applicable to a broad range of disciplines.

Subject Materials

ELearning, Readings, References and Materials

Any readings/references are recommended only and are not intended to be an exhaustive list.

Students are encouraged to use the library catalogue and databases to locate additional readings.

Textbook(s)

Database textbook:

[1] Thomas Connolly and Carolyn Begg, *Database systems - A Practical Approach to Design, Implementation, and Management,* Sixth Edition, The Pearson Education Inc, 2015.

Other database textbook:

[2] Elmasri R. and Navathe S. B., *Database Systems Models, Languages, and Application Programming*, 6th ed., The Person Education Inc, 2011

SQL and PL/SQL textbooks:

[3] Morton K., Osborne K., *Pro Oracle SQL*, Apress 2013

[4] Feuerstein S. *Oracle PL/SQL best practices*, O'Reilly Media, Inc., 2008

[5] Gupta S., *Oracle Advanced PL/SQLDeveloper Professional Guide*, Packt Publishing, 2012

NoSQL textbook:

[6] Harrison G. *Next Generation Databases, NoSQL, NewSQL, and Big Data*, Apress, 2015

MongoDB textbook:

[7] Banker K., Bakkum P., Verch S., Garret D., Hawkins T., *MongoDB in Action, Second Edition*, Manning, 2016

Oracle 12c DBMS documentation library is available at:

[8] http://www.oracle.com/pls/db121/homepage

MongoDB 4.2 documentation library is available at:

[9] https://docs.mongodb.com/

Other Oracle DBMS textbooks available on Safari Bookshelf (O'Reilly Network), access through a link to Proquest Safari website

Other Resources: All other materials are available through Moodle.

Assessment

Assessment Task Summary

No.	Assessment Name	Assessment Weight	Mapping to Subject Learning Outcome
1	Laboratory 1	1%	SL01

2	Laboratory 2	1%	SL01
3	Assignment 1	20%	SL02
4	Laboratory 3	2%	SL03
5	Laboratory 4	2%	SL03
6	Assignment 2	20%	SL03,SL04
7	Laboratory 5	2%	SL05
8	Laboratory 6	2%	SL06
9	Assignment 3	20%	SL06
10	Final Project	30%	SL01,SL02,SL03,SL04,SL05,SL06

Assessment 1			
Assessment Name	Laboratory 1		
Weighting	1%		
Subject Learning Outcomes Assessed	SL01	**Individual or Group Assessment**	Individual
Due Date	15 August 2020, 7pm (sharp)		
Assessment Description and Criteria	Description: This laboratory includes a task related to implementation of simple SQL scripts in Oracle DBMS and two tasks related to discovering functional dependencies and minimal keys in the sample database domains.		

	Assessment criteria: Correctness, completeness, and consistency with a specification
Length / Duration	1 implementation task and two theoretical tasks/1 week
Method of Submission	Electronic submisison through Moodle
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline

Assessment 2			
Assessment Name	Laboratory 2		
Weighting	1%		
Subject Learning Outcomes Assessed	SLO1	**Individual or Group Assessment**	Individual
Due Date	22 August 2020, 7pm (sharp)		
Assessment Description and Criteria	Description: This laboratory includes a task related to normalization of relational tables Assessment criteria: Correctness, completeness, and consistency with a specification		
Length / Duration	1 theoretical task/1 week		
Method of	Electronic submisison through Moodle		

Submission	
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline

Assessment 3			
Assessment Name	Assignment 1		
Weighting	20%		
Subject Learning Outcomes Assessed	SLO2	**Individual or Group Assessment**	Individual
Due Date	5 September 2020, 7pm (sharp)		
Assessment Description and Criteria	Description: This assignment includes the tasks related to normalization of relational schemas, implementation of data retrieval in PL/SQL, implementation of stored procedures and functions Assessment criteria: Correctness, completeness, and consistency with a specification		
Length / Duration	1 theoretical task and 3 implementation tasks/2 weeks		
Method of Submission	Electronic submission through Moodle		
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline		

Assessment 4

Assessment Name	Laboratory 3
Weighting	2%
Subject Learning Outcomes Assessed	SL03
Individual or Group Assessment	Individual
Due Date	12 September 2020, 7pm (sharp)
Assessment Description and Criteria	Description: This laboratory includes the tasks related to implementation of database triggers Assessment criteria: Correctness, completeness, and consistency with a specification
Length / Duration	2 implementation tasks/1 week
Method of Submission	Electronic submission through Moodle
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline

Assessment 5

Assessment Name	Laboratory 4
Weighting	2%
Subject Learning Outcomes	SLO3
Individual or Group	Individual

Assessed		**Assessment**	
Due Date	19 September 2020, 7pm (sharp)		
Assessment Description and Criteria	Description: This laboratory includes 1 task related to implementation of rw database trigger and 1 tasks related to implementtaion of indexing in a relational database Assessment criteria: Correctness, completeness, and consistency with a specification		
Length / Duration	2 implementation tasks/1 week		
Method of Submission	Electronic submission through Moodle		
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline		

Assessment 6			
Assessment Name	Assignment 2		
Weighting	20%		
Subject Learning Outcomes Assessed	SLO3, SLO4	**Individual or Group Assessment**	Individual
Due Date	17 October 2020, 7pm (sharp)		
Assessment Description and Criteria	Description: This assignment includes the tasks related to database trigger based implementation of view update, transaction processing, and programming of distributed database system		

	Assessment criteria: Correctness, completeness, and consistency with a specification
Length / Duration	2 theoretical tasks and 2 implementation tasks/2 weeks
Method of Submission	Electronic submission through Moodle
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline

Assessment 7			
Assessment Name	Laboratory 5		
Weighting	2%		
Subject Learning Outcomes Assessed	SLO5, SLO6	**Individual or Group Assessment**	Individual
Due Date	24 October 2020, 7pm (sharp)		
Assessment Description and Criteria	Description: This laboratory includes the tasks relater to design and implementation of BSON documents Assessment criteria: Correctness, completeness, and consistency with a specification		
Length / Duration	2 implementation tasks/ 1 week		
Method of Submission	Electronic submission through Moodle		

Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline

Assessment 8

Assessment Name	Laboratory 6		
Weighting	2%		
Subject Learning Outcomes Assessed	SLO5	**Individual or Group Assessment**	Individual
Due Date	31 October 2020, 7pm (sharp)		
Assessment Description and Criteria	Description: This laboratory includes 2 tasks related to implementation of queries and data manipulation tasks on the collections of BSON documents Assessment criteria: Correctness, completeness, and consistency with a specification		
Length / Duration	2 implementation tasks/1 week		
Method of Submission	Electronic submission through Moodle		
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline		

Assessment 9

Assessment Name	Assignment 3

Weighting	20%
Subject Learning Outcomes Assessed	SLO6
Individual or Group Assessment	Individual
Due Date	14 November 2020, 7pm (sharp)
Assessment Description and Criteria	Description: This aassignment includes the tasks related to implementation of queries and data manipulation on BSON documents using aggregation framework, implementation of validation of BSON documents, indexing of BSON documents and implementation of replication and sharding Assessment criteria: Correctness, completeness, and consistency with a specification
Length / Duration	4 implementation tasks/2 weeks
Method of Submission	Electronic submission through Moodle
Return of assessed work	An evaluated submission and feedback will be returned through Moodle in a period of 2 weeks from a submission deadline

Assessment 10

Assessment Name	Final Project
Weighting	30%
Subject Learning Outcomes Assessed	SL01,SL02,SL03,SL04,SL06,SLO6
Individual or Group Assessment	Individual

Due Date	To be announced
Assessment Description and Criteria	Description: The Final project covers all material included in the subject, see Lecture Schedule section Assessment criteria: Correctness, completeness, and consistency with a specification
Length / Duration	1 week
Method of Submission	Electronic submission through Moodle
Return of assessed work	Usually at the end of the second week after the final examination period

Notes on Assessment

All assignments and lab tasks are expected to be completed independently. Plagiarism may result in a FAIL grade being recorded for that assignment.

Method for Submission of Assessment Items

Unless otherwise notified by the subject coordinator, all written assignments and lab tasks must be submitted electronically on Moodle.

Submission methods will be specified in the specifications of assignments and labs.

Arrangement for acknowledging submission of written work

Electronic acknowledgement by Moodle.

Procedure for the return of assessment items

All comments and marks of assignment and laboratory tasks will be returned within 2 weeks of their submissions on Moodle.

Procedure for the retention of assessed work

The University may retain copies of student work in order to facilitate quality assurance of assessment processes, in support of the continuous improvement of assessment design, assessment marking and for the review of the subject. The University retains records of students' academic work in accordance with the

University Records Management Policy and the State Records Act 1988 and uses these records in accordance with the University Privacy Policy and the Privacy and Personal Information Protection Act 1998.

Formative feedback given to student prior census date consists of the following

The comments on mistakes found in the solutions of assignment and laboratory tasks and sample solutions of the assignment and laboratory tasks.

Assessment General

Submission of assessment items via email will not be accepted. All email submissions will result with immediate 0.0 (zero) mark granted for the respective coursework component.

Student contributions to tutorial and/or seminars

Requirements Related to Student Contributions

The subject does not have any workshops and seminars. Hence, no student contribution to workshops and/or seminars is expected.

Marks in this subject are not routinely scaled

Marks awarded for any assessment task (including examinations) may be subject to scaling at the end of the session by the School Assessment Committee (SAC) and/or the Faculty Assessment Committee (FAC). Marks may be scaled in accordance with University policy. Scaling will not affect any individual student's rank order within their cohort. For more information refer to Standards for Finalisation of Student Results: http://www.uow.edu.au/about/policy/UOW039331.html

Assessment task is set up to be checked by Turnitin

No assesment tasks are checked by Turnitin.

Assessment Quality Cycle

The University of Wollongong is committed to the quality assurance and quality enhancement of assessment. The University will meet its legislative and regulatory obligations, to ensure consistent and appropriate assessment through course management and coordination, including assessment quality assurance procedures. An Assessment Quality Cycle is used to describe quality assurance at the points of assessment design, assessment delivery, the declaration of marks and grades, and review and improvement activities.

Referencing System

All source code copied from the external Web sites, books, etc must be clearly marked with the comments and the references to the external web sites, books, etc must be provided within the comments.

Please consult the UOW Library website for further information: http://uow.libguides.com/refcite

Internet Resources

There are no restrictions on using Internet resources.

Technical Fail

Minimum Performance Requirements

To be eligible for a Pass in this subject a student must achieve a mark of at least 40% in the final exam. Students who fail to achieve this minimum mark & would have otherwise passed may be given a TF (Technical Fail) for this subject.

Students who do not meet the minimum performance requirements, as specified for each assessment, will receive a TF (Technical Fail) grade for this subject, which will appear on your Academic Transcript.

Supplementary Exams

Supplementary Assessment

Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject, and are otherwise identified as meriting an offer of a supplementary assessment. The Subject Coordinator will determine the precise form of supplementary assessment at the time the offer of a supplementary is made. In some circumstances you may be offered a supplementary exam. For more information about Supplementary or Deferred Exams refer to

- https://www.uow.edu.au/student/exams/supplementary-exams/

1. A student whose overall performance results in a TF will only be granted a supplementary assessment task (e.g. a supplementary exam or a supplementary assignment) if approved by the school assessment committee.
2. A student who achieves a mark of 48-49% will normally be eligible for a grade of WS and a supplementary exam organised by the University. In this case, the maximum grade attainable is PS (Pass Supplementary) and a mark of 50%.
3. A student who has successfully applied for academic consideration will receive either:
    a. A WD - Withheld Deferred Exam - and be allowed to sit only a supplementary exam, which will be supervised by the University or
    b. A WH – Withheld – and be allowed to sit a supplementary exam not supervised by the University or complete some other supplementary task
4. If a student is being investigated for misconduct and the investigation cannot be completed before the grades are released the student will receive a grade of WH until a mark is declared.
5. Calculators will not be allowed in the final exam.

Deferred Exams

For students who applied for Academic Consideration to request to sit their exam again, and had their application approved by their subject coordinator.

For more information about Supplementary or Deferred Exams refer to
- https://www.uow.edu.au/student/exams/supplementary-exams/

Penalties for late submission of assessment items

Assessed work must be handed in by the date and time given.

- Penalties apply to all late assessments, except if student academic consideration has been granted. A new submission date may be given if Student Academic Consideration has been granted, however the late penalties below apply if not received by the new date.
- Late assignment submissions will attract a penalty of **25%** of the total assessment mark for that task per day including weekends no matter how many seconds the submission is late.
- All submissions received **4** days after the due date will receive no marks.
- If an assessment is submitted late, it will be marked in the normal way, and then a penalty will be applied.·
- Submissions received **15** days after the due date will receive no feedback. However, lecturers may choose to provide feedback at their discretion.

All submissions must be done on time. Please apply a principle saying that "it is better to submit a coursework task one hour too early than one second too late".

Extensions

Extensions of time to submit material for assessment can only be requested in advance of the due date for an assessment activity through the Academic Consideration process on SOLS. For more information please refer to the Student Academic Consideration Policy at: http://www.uow.edu.au/about/policy/UOW058721.html

Your Privacy – Lecture Recording

In accordance with the Student Privacy & Disclosure Statement, when undertaking our normal teaching and learning activities, the University may collect your personal information. This collection may occur incidentally during the recording of lectures in equipped venues (i.e. when your identity can be ascertained by your image, voice or opinion), therefore the University further advises students that:
• Lecture recordings are made available to students, university staff, and affiliates, securely on the university's Echo360 ALP (Active Learning Platform) and via the subject Moodle eLearning site;
• Recordings are made available only for the purpose for which they were recorded, for example, as a supplemental study tool or to support equity and access to educational resources;
• Recordings are stored securely for up to four years.
If you have any concerns about the use or accuracy of your personal information collected in a lecture recording, you may approach your Subject Coordinator to discuss your particular circumstances.

The University is committed to ensuring your privacy is protected. If you have a concern about how your personal information is being used or managed please refer to the University's Privacy Policy or consult our Privacy webpage https://www.uow.edu.au/privacy/

Reasonable Adjustment

If you have a disability or a medical condition which may disadvantage you in your assessment tasks, you can apply to have the conditions of your exams adjusted to take your disability or condition into account. In particular students cannot assume that a reasonable adjustment document automatically gives a right to a deferred or supplementary exam. Students with a disability may be entitled to reasonable adjustment to assessment. A reasonable adjustment document obtained through Disability Services is a recommendation that needs to be discussed and ratified by subject coordinators. Normal subject assessment requirements can only be adjusted with the explicit written permission of the subject coordinator.

Workshop/Lab Closure Policy

If for any reason, the number of students in a workshop or lab falls below a sustainable enrolment level, as determined by the Head of School, workshops/labs offered for that subject may be collapsed or deleted.
You will have to attend the new workshops/lab if this closure affects the one you are attending.
We will endeavour to make this decision no later than Week 4 of session.

Exams

Exams will be run in accordance with UOW Exam rules, please refer to changes to exams and grades at:
http://www.uow.edu.au/student/exams/UOW115867.html

Supplementary Assessment

Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject, and are otherwise identified as meriting an offer of a supplementary assessment. The Subject Coordinator will determine the precise form of supplementary assessment at the time the offer of a supplementary is made. In some circumstances you may be offered a supplementary exam. For more information about Supplementary or Deferred Exams refer to

- https://www.uow.edu.au/student/exams/supplementary-exams/

Deferred Exams

For students who applied for Academic Consideration to request to sit their exam again, and had their application approved by their subject coordinator. For more information about Supplementary or Deferred Exams refer to - https://www.uow.edu.au/student/exams/supplementary-exams/

Student Academic Consideration Policy

The School recognises that it has a responsibility to ensure equity and consistency across its subjects for all students. Sometimes, in exceptional circumstances, students need to apply for student academic consideration in order to complete all assessable work.

If you believe that your submission of, performance in or attendance at an assessment activity, including an examination, has been affected on compassionate grounds, by illness or by other serious extenuating circumstances beyond your control, you can apply for academic consideration in Student OnLine Services (SOLS). Do not assume that an application for academic consideration will be automatically granted.

The purpose of the Student Academic Consideration Policy is to enable student requests for academic consideration
for specific assessment tasks, examinations, academic progress or attendance requirements in a subject relevant to
their course to be evaluated in a fair, reasonable, timely and consistent manner throughout the University. This Policy sets out clear and defined requirements allowing for transparency, ease of interpretation and implementation.
Consistency in criteria, procedures, and outcomes in the processing of applications for academic consideration for
all forms of assessment are requirements of this Policy. For more information please refer to the Student Academic Consideration Policy at: http://www.uow.edu.au/about/policy/UOW058721.html

Academic Integrity Policy

The University's policy on acknowledgement practice and plagiarism provides detailed information about how to acknowledge the work of others: http://www.uow.edu.au/about/policy/UOW058648.html

The University's Academic Integrity Policy, Faculty Handbooks and subject guides clearly set out the University's expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement or without the explicit permission of the Subject Coordinator. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as 'resources'), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the University to be intentionally or recklessly helping other students to cheat. Uploading an assessment task, subject outline or other course materials without express permission of the university is considered academic misconduct and students place themselves at risk of being expelled from the University.

When you submit an assessment task, you are declaring the following

1. It is your own work and you did not collaborate with or copy from others.
2. You have read and understand your responsibilities under the University of Wollongong's Academic Integrity Policy on plagiarism.
3. You have not plagiarised from published work (including the internet). Where you have used the work from others, you have referenced it in the text and provided a reference list at the end to the assignment.

Students must remember that:

- Plagiarism will not be tolerated.
- Students are responsible for submitting original work for assessment, without plagiarising or cheating, abiding by the University's Academic Integrity Policy as set out in the University Handbook, the University's online Policy Directory and in Faculty handbooks and subject guides.

Review and Appeal of Academic Decisions Policy

A student may request an explanation of a mark for an assessment task or a final grade for a subject consistent with the student's right to appropriate and useful feedback on their performance in an assessment task. A student may also seek further explanation for other academic decisions such as Academic Consideration, Supplementary Assessment or Credit for Prior Learning. If a student is not satisfied with the explanation, or have further concerns, they may have grounds for a formal review. For further information refer to: https://documents.uow.edu.au/about/policy/students/UOW189967.html

Relevant University Policies, procedures and students services

The University of Wollongong has a number of policies and guidelines that govern student and course management that students need to be aware of, a summary of these is available at https://www.uow.edu.au/engineering-information-sciences/current-students/policies-guidelines/

Student Support

There are a range of services available to students that are provided free of charge.

A good place to get to know services that may be of use to you is the Get Started @ UOW web page, accessed here https://getstarted.uow.edu.au/index.html or search for "*Get Started @ UOW*".

Services available include:

Service	**Link to information about the service**
Aboriginal & Torres Strait Islander	https://www.uow.edu.au/wic/about1/index.html?ssSourceSiteId=getstarted
Careers advice	https://www.uow.edu.au/careers/index.html?ssSourceSiteId=getstarted

Counselling	https://www.uow.edu.au/student/counselling/index.html?ssSourceSiteId=getstarted
Disability	https://www.uow.edu.au/student/disability/index.html?ssSourceSiteId=getstarted
Study Skills	https://www.uow.edu.au/student/learningcoop/index.html?ssSourceSiteId=getstarted

Library Services

To save yourself time and enhance your studies: connect with information specialists and resources anytime, anywhere via Ask Us: http://www.library.uow.edu.au/ask/UOW026599.html or *Google* "UOW library ask us"

Online – Ask a Librarian	Ask questions and receive a response within 1 business day
In person – Book a Librarian	30-minute appointment with an Librarian
Research Consultation Service	1 hour appointment with an information specialist. Available to UOW academics, HDRs, Postgraduate Coursework, Honours and Masters students.
By phone	+61 2 4221 3548

The Main Library (Building 16) and Education Curriculum Resources Centre (Building 22) are located at the Wollongong Campus. UOW Libraries at other locations are listed on the Library website.

This outline should be read in conjunction with the following:

Teaching and Assessment: Code of Practice - Teaching

This Code is a key document in implementing the University's Teaching and Assessment Policy and sets out the specific responsibilities of parties affected in relation to learning, teaching and assessment, as well as procedures for teaching staff. The Code can be found at: http://www.uow.edu.au/about/policy/UOW058666.html

Teaching and Assessment: Assessment and Feedback Policy

The purpose of this Policy is to set out the University of Wollongong's approach to effective learning, teaching and assessment, including the principles and minimum standards underlying teaching and assessment practice. The Policy can be found at: http://www.uow.edu.au/about/policy/alphalisting/UOW222905.html

Teaching and Assessment: Subject Delivery Policy

This Policy sets out specific requirements in relation to the delivery of Subjects. The policy can be found at: http://www.uow.edu.au/about/policy/alphalisting/UOW222906.html

Key Dates: http://www.uow.edu.au/student/dates/index.html

Course Progress Policy

The Course Progress Policy establishes the requirements, definitions and procedures to be used in determining the standards of acceptable course progress; the definitions of the roles and responsibilities of UOW staff and students with regard to course progress; and the descriptions of the resources and choices available to assist students at risk of not achieving course progress standards. The Policy can be found at: http://www.uow.edu.au/about/policy/UOW058679.html

Coursework Student Academic Complaints Policy

UOW aims to provide a transparent and consistent process for resolving student academic grievances. Further information is available at: http://www.uow.edu.au/about/policy/UOW058653.html

Workplace Health & Safety Policy

The Workplace Health and Safety (WHS) unit at UOW aims to provide structures, system and support to ensure the health, safety and welfare of all at the campus. Further information is available from: http://staff.uow.edu.au/ohs/

Human Research Ethics Guidelines

The Human Research Ethics Committee protects the welfare and rights of the participants in research activities. Further information can be found here: http://www.uow.edu.au/research/ethics/human/index.html

Faculty of Engineering & Information Sciences - Student Central

EIS Student Central is your first point of contact for a wide range of enquiries;

Location: Building 4.G14

Telephone: +61 2 4221 3491

Email: eis@uow.edu.au

Student Support Adviser (SSA)

If you have a temporary or ongoing issue or a problem that is affecting your study, including issues that are related to belonging to an equity group, then the Student Support Advisers may be able to help. There are Student Support Advisers available to assist students who are studying at all UOW Campuses and in all UOW Faculties. Contact details can be found on the UOW website:
https://www.uow.edu.au/student/services/SSA/contact

Student Advocacy Service (SAS)

The Student Advocacy Service (SAS) is free, confidential and independent service for all UOW students. The SAS provides advocacy and referral for a range of academic, procedural and administrative issues. For more information visit: https://www.uow.edu.au/student/support-services/advocacy/

Information Technology Services and Policies: http://www.uow.edu.au/its/accounts/index.html

Academic Integrity and Plagiarism Policy

The University's policy on acknowledgement practice and plagiarism provides detailed information about how to acknowledge the work of others: http://www.uow.edu.au/about/policy/UOW058648.html

Student Conduct Rules

In line with UOW's commitment to academic integrity, new rules related to student conduct have been in effect since 1 January 2008. Relevant information may be found at:

http://www.uow.edu.au/about/policy/UOW058723.html

Code of Practice – Research

This Code mandates the current policy and best practice relating to procedures for responsible research. The Code can be found at: http://www.uow.edu.au/about/policy/UOW058663.html

The Code of Practice – Student Professional Experience

The Code of Practice – Student Professional Experience sets out what is expected from students, the University and Host Organisations in providing student professional experience programs. It applies to student professional experience programs that form the whole or part of a subject or course offered at the University. The code assists in promoting a productive learning experience for students. Current policies and practices relating to the workplace experience and other practical training requirements can be found at: http://www.uow.edu.au/about/policy/UOW058662.html

Code of Practice – Honours

This Code sets out the responsibilities of all parties involved in managing students undertaking Honours Programs. The Code can be found at: http://www.uow.edu.au/about/policy/UOW058661.html

IP Student Assignment of Intellectual Property Policy

This policy applies to all Students (under-graduate and post-graduate) of the University of Wollongong (UOW). It may also apply to other persons by agreement. This policy sets out the approach taken by UOW in relation to Student assignment of intellectual property. Further information about this policy can be found here: http://www.uow.edu.au/about/policy/UOW058690.html

Research Misconduct Policy: http://www.uow.edu.au/about/policy/UOW058715.html

Inclusive Language Guidelines

UOW endorses a policy of non-discriminatory language practice in all academic and administrative activities of the University. Further information is available from: http://www.uow.edu.au/about/policy/alphalisting/UOW140611.html

Ownership of Work & Intellectual Property Policy:
https://documents.uow.edu.au/about/policy/uow058680.html

Complete Start Smart: https://www.uow.edu.au/student/get-started/how-uni-works/tools-for-success/start-smart/

Copyright Policy

The purpose of this Policy is to outline responsibilities and procedures regarding the use of third party copyright material, with the objectives of reducing staff and UOW exposure to the risks associated with the use of third party copyright material, assisting staff to make full legal use of the materials at their disposal by clearly identifying responsibilities and promoting copyright compliance. The Policy can be found at: http://www.uow.edu.au/about/policy/alphalisting/UOW026670.html

Subject Outlines: https://ssl.informatics.uow.edu.au/subjectoutlines/Current/