USC

Course Outline

Code: ICT320
Title: Database Programming

School: Business
Teaching Session: Semester 2
Year: 2020
Course Coordinator: Dr Anne Ozdowska
Course Moderator: Dr Rania Shibl

Please go to the USC website 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

This course provides you with advanced database concepts including advanced SQL and industrial database application domains. The course expands on topics in ICT211, adds advanced SQL concepts and develops practical database programming skills. It begins with a review of the database environment, adding indexes and optimisation. The second part of the course focuses on applying the skills to real world applications including integrating databases with applications, big data, and graphing and geo-spatial databases.

1.2 Field trips, WIL placements or activities required by professional accreditation

N/A

2. What level is this course?

300 level Graduate - Independent application of graduate knowledge and skills. Meets AQF and professional requirements. May require pre-requisites and developing level knowledge/skills. Normally taken in the 3rd or 4th year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

Specific Learning Outcomes On successful completion of this course, you should be able to:	**Assessment tasks** You will be assessed on the learning outcomes in task/s:	**Graduate Qualities or Professional Standards mapping** Completing these tasks successfully will contribute to:
Apply discipline specific knowledge and skills to problems.	1 and 2	Knowledgeable, Organisation, Communication, Career ready, Creative and critical thinking
Apply initiative to solving problems competently in the discipline.	1, 2, 3	Creative and critical thinking, Empowered, Information literacy
Demonstrate effective written communication skills in a business context.	3	Communication, Career ready
Design and creation of database systems in a real world context.	3	Creative and critical thinking, Empowered, Engaged, Career ready

5. Am I eligible to enrol in this course?

Refer to the USC Glossary of terms for definitions of "pre-requisites, co-requisites and anti-requisites".

5.1 Enrolment restrictions

Nil

5.2 Pre-requisites

ICT211, ICT112

5.3 Co-requisites

Nil

5.4 Anti-requisites

Nil

5.5 Specific assumed prior knowledge and skills (where applicable)

N/A

6. How am I going to be assessed?

6.1 Grading scale

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

6.2 Details of early feedback on progress

Early feedback will be provided in the weekly workshops and from Task 1 assessment.

6.3 Assessment tasks

Task No.	Assessment Product	Individual or Group	Weighting %	What is the duration / length?	When should I submit?	Where should I submit it?
1	Examination	Individual	20%	1 hour	Week 4	Quiz (Online Test)
2	Examination	Individual	30%	2 hours	Week 9	Quiz (Online Test)
3	Artefact - Technical and Scientific, and Written Piece	Individual	50%	N/A	Week 13	Online Assignment Submission with Plagiarism check
			100%			

Assessment Task 1: Test

Goal:	Demonstrate knowledge of database programming
Product:	Examination
Format:	An examination will be held in week 4. This is an individual assessment.
Criteria:	Demonstrated knowledge of database programming.

Assessment Task 2: Test

Goal:	Demonstrate knowledge of database programming
Product:	Examination
Format:	An examination will be held in week 9. This is an individual assessment.
Criteria:	Demonstrated understanding of database programming.

Assessment Task 3: Assignment – Database creation

Goal:	To apply programming skills through implementing a real-world database system.
Product:	Artefact - Technical and Scientific, and Written Piece
Format:	Written report and database code/file.
Criteria:	• Insightful analysis of the given problem • Design completeness and accuracy • Correctness and completeness of the implementation of code • Effective written communication and report presentation

7. Directed study hours

This course will be delivered via technology-enabled learning and teaching. All lectures will remain in this mode for Semester 2 2020.

When government guidelines allow, students that elected on-campus study via the class selection process will be advised when on campus tutorials and practical sessions will resume.

Student workload is calculated at 12.5 learning hours per one unit.
Each week:

- 1-hour on-line lecture
- 2-hour workshop
- 9.5 hours independent study (including assessment work)

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

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

8.1 Prescribed text(s) or course reader

Please note that you need to have regular access to the resource(s) listed below as they are required:

Author	Year	Title	Publisher
Coronel, C. & Morris, S	2018, 13th edition	*Database Systems: Design Implementation, and Management*	Cengage Learning

8.2 Specific requirements

N/A

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low.
It is your responsibility as a student to review course material, search online, discuss with lecturers and peers, and understand the health and safety risks associated with your specific course of study. It is also your responsibility to familiarise yourself with the University's general health and safety principles by reviewing the online Health Safety and Wellbeing training module 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 Blackboard, are electronically checked through SafeAssign. This software allows for text comparisons to be made between your submitted assessment item and all other work that SafeAssign has access to.

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%
b) The course is graded using the Standard Grading scale
c) You have not failed an assessment task in the course due to academic misconduct

10.3 Assessment: Submission penalties

Late submission of assessment tasks will be penalised at the following maximum rate:

- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day
- 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task.

Weekdays and weekends are included in the calculation of days late.
To request an extension, you must contact your Course Coordinator and supply the required documentation to negotiate an outcome.

10.4 Study help

In the first instance, you should contact your tutor, then the Course Coordinator. Additional assistance is provided to all students through Academic Skills Advisers. To book an appointment or find a drop-in session go to Student Hub.

Contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au

10.5 Wellbeing Services

Student Wellbeing Support Staff are available to assist on a wide range of personal, academic, social and psychological matters to foster positive mental health and wellbeing for your success. Student Wellbeing is comprised of professionally qualified staff in counselling, health and disability Services.

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, mental health issue, learning disorder, injury or illness, or you are a primary carer for someone with a disability, AccessAbility Services can provide assistance, advocacy and reasonable academic adjustments.

To book an appointment with either service go to Student Hub, email studentwellbeing@usc.edu.au or accessability@usc.edu.au or call 07 5430 1226

10.6 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
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website:
http://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.7 General Enquiries

In person:

- **USC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **USC Moreton Bay** – Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **USC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane

- **USC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **USC Fraser Coast -** Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **USC Caboolture -** Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Appendix 1 Course content

Week # / Module #	What key concepts/content will I learn?	Directed Study Activities: teaching components
1	Course overview Review – Data models and ER modelling	Please refer to Section 7 for details.
2	SQL Review– DQL and DML	Please refer to Section 7 for details.
3	Advanced SQL – DDL, procedures, functions, triggers, views	Please refer to Section 7 for details.
4	Advanced SQL – Performance tuning and query optimisation	Please refer to Section 7 for details.
5	Distributed database management systems	Please refer to Section 7 for details.
6	Introduction to Big data and NoSQL	Please refer to Section 7 for details.
7	Key value databases – Redis	Please refer to Section 7 for details.
8	Graphing databases – Neo4j	Please refer to Section 7 for details.
9	Graphing databases – Neo4j	Please refer to Section 7 for details.
10	Document databases – MongoDB	Please refer to Section 7 for details.
11	Document databases – MongoDB	Please refer to Section 7 for details.
12	Document databases – MongoDB	Please refer to Section 7 for details.
13	Revision	Self-directed study

Please note that the course activities may be subject to variation.

Mid Semester Break:

28th September 2020-4th October 2020 (Between Week 10 and Week 11)

Public Holidays

Queen's Birthday - Monday 5th Oct 2020 (Week 11)