The current and official versions of the course specifications are available on the web at http://www.usq.edu.au/coursespecification/current. Please consult the web for updates that may occur during the year.

### Description: Oracle Development

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-nbr</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
<th>Campus</th>
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<tr>
<td>CIS</td>
<td>3010</td>
<td>6, 2010</td>
<td>EXT</td>
<td>1</td>
<td>Toowoomba</td>
</tr>
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</table>

**Academic group:** FOBUS  
**Academic org:** FOB005  
**Student contribution band:** 2  
**ASCED code:** 020303

### STAFFING

Examiner: Srecko Howard  
Moderator: Mark Toleman

### OTHER REQUISITES

It is highly recommended that students complete CIS2002 or an equivalent course before commencing this course. Students are required to have access to a personal computer, e-mail capabilities and Internet access to UConnect. Internet access is also required to use the USQ Oracle server. Students who have not previously completed CIS2002 at USQ will need to study module 1 of the Study Book in some detail in order to gain an understanding of the fundamentals of data modelling, normalisation and SQL. Current details of computer requirements can be found at <http://www.usq.edu.au/ict/students/standards/default.htm>.

### RATIONALE

The database is an integral and essential component of the overwhelming majority of information systems. The efficient daily operations of the organization, its business intelligence and long-term sustainability are all significantly dependent upon well managed and optimised databases. The vast majority of commercial applications utilise corporate databases extensively and many software vendors such as Oracle have designed procedural languages specifically to address the complex demands of database processing. It is desirable that students master the fundamentals of a major DBMS product and develop a critical understanding of current database technologies and trends, and their impact upon business. Students should also develop skills that will facilitate a critical understanding of complex business problems pertaining to databases and database management systems. Finally, it is also desirable that students develop practical skills in writing server-side and client-side applications of limited scope using a procedural database language.

### SYNOPSIS

This course complements CIS2002 and an important focus is the architecture of the Oracle DBMS and procedural database programming in the Oracle environment. Students also extend and develop their critical knowledge of key topics and trends in database theory and practice, often in alignment with the applied coverage of Oracle. Beginning with a rapid review of SQL, the course moves...
into an extensive coverage of PL/SQL, Oracle's procedural extension to SQL. The course covers client-side as well as server-side PL/SQL, including anonymous blocks, packages, stored procedures, functions and triggers. Students gain extensive practical skills writing PL/SQL applications of limited scope to solve business problems and/or address business requirements. The course operates within a framework that focuses on developing business problem-solving and communication skills, and extensive use is made of business case studies of limited scope. This course and CIS2002 together provide students with extensive hands-on exposure to the Oracle DBMS and cover a significant proportion of the syllabus for the OCP (Oracle Certified Professional) designation. Upon completion of both courses, highly motivated students should be in a position to attempt two of the three papers leading towards the OCP and, depending upon the options chosen, become candidates for the designations of OCA (Oracle Certified Associate) and Oracle Database SQL Expert. In terms of our long-standing membership in the Oracle Academic Initiative, on-campus students are exposed to materials and exercises taken from official Oracle training courses and selected assessments are based upon these presentations.

OBJECTIVES

The course objectives define the student learning outcomes for a course. On successful completion of this course, students should be able to:

1. write client-side and server-side applications of limited scope using Oracle PL/SQL
2. demonstrate a factual and critical knowledge of a limited number of topics in database theory and trends, including database administration and data warehousing
3. explain the architecture of Oracle, evaluate the extent to which it meets the requirements of selected theoretical architecture/s and understand the implications of this architecture for data-centric applications
4. write PL/SQL programs, procedures, functions, triggers and packages to solve applied business problems and specifications
5. demonstrate knowledge of Oracle PL/SQL programming theory and practice.

TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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</thead>
<tbody>
<tr>
<td>1. Selected topics in database theory/trends</td>
<td>25.00</td>
</tr>
<tr>
<td>2. (i) Oracle architecture; (ii) DBMS applications programming (Oracle); (iii) The Oracle DBA (Introduction)</td>
<td>75.00</td>
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</table>

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at http://bookshop.usq.edu.au click 'Semester', then enter your 'Course Code' (no spaces).

Casteel, J2010, Oracle 10g developer: PL/SQL programming, Course Technology/Cengage Learning, Boston, Massachusetts.

(This text book is also used in CIS2002 - please keep this text book if you intend enrolling in CIS2002.)

Lahey, H (ed)2000, Information systems developers handbook: a road map for students, University of Southern Queensland, Toowoomba, Queensland.
(This handbook is available on the USQ website at <http://www.usq.edu.au/business/schools/is/isdevhandbook.htm>.)


REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.


Connolly, T & Begg, C2010, Database systems: a practical approach to design, implementation, and management, 5th edn, Addison-Wesley, Boston, Massachusetts.


Rob, P & Coronel, C2009, Database systems: design implementation and management, 8th edn, Course Technology, Boston, Massachusetts.


STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Directed Study</td>
<td>56.00</td>
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<tr>
<td>Private Study</td>
<td>119.00</td>
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ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks out of</th>
<th>Wtg (%)</th>
<th>Due date</th>
<th>Objectives assessed</th>
<th>Graduate skill</th>
<th>Level assessed</th>
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<td>ONLINE TEST 1</td>
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<td>2, 3, 5</td>
<td>U2, U3</td>
<td>3, 3</td>
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<td>ONLINE TEST 2</td>
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<td>ASSIGNMENT 1</td>
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<td>EXAMINATION - PART B</td>
<td>75</td>
<td>49</td>
<td>END S6</td>
<td>All</td>
<td>U2, U3, U4</td>
<td>3, 3, 3</td>
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</table>

NOTES
1. Assignments 1 and 2 must be submitted electronically via EASE.
2. The examination is scheduled to be held in the end-of-semester examination period. Students will be advised of the official examination date for exam (parts A and B) after the timetable has been finalised. The total working time for exam (parts A and B) is 2 hours.

GRADUATE QUALITIES AND SKILLS
Elements of the following USQ Graduate Skills are associated with the successful completion of this course.

<table>
<thead>
<tr>
<th>Skill</th>
<th>Level</th>
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<tbody>
<tr>
<td>Problem Solving (Skill U2)</td>
<td>Advanced (Level 3 )</td>
</tr>
<tr>
<td>Academic, professional and digital literacy (Skill U3)</td>
<td>Advanced (Level 3 )</td>
</tr>
<tr>
<td>Written &amp; Oral Communication (Skill U4)</td>
<td>Advanced (Level 3 )</td>
</tr>
<tr>
<td>Managmt, Planning &amp; Org Skills (Skill U8)</td>
<td>Advanced (Level 3 )</td>
</tr>
<tr>
<td>Creatvty, Initiative &amp; Entrprse (Skill U9)</td>
<td>Advanced (Level 3 )</td>
</tr>
</tbody>
</table>

IMPORTANT ASSESSMENT INFORMATION

1. Attendance requirements:
   If you are an international student in Australia, you are advised to attend all classes at your campus. For all other students, there are no attendance requirements for this course. However, it is the students' responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.

2. Requirements for students to complete each assessment item satisfactorily:
   To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks. (Depending upon the requirements in Statement 4 below, students may
not have to satisfactorily complete each assessment item to receive a passing grade in this course.

3 Penalties for late submission of required work:
If students submit assignments after the due date without prior approval of the examiner, then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted. Model answers will be posted on the discussion group approximately ten days after the due date.

4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.

5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.

6 Examination information:
This is a closed examination. Candidates are allowed to bring only writing and drawing instruments into the examination.

7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the next examination period.

8 University Student Policies:
Students should read the USQ policies Definitions, Assessment and Student Academic Misconduct to avoid actions which might contravene University policies and practices. These polices can be found at the URL http://policy.usq.edu.au/portal/custom/search/category/usq_document_policy_type/Student.1.html.

ASSESSMENT NOTES

1 Assignments: (i) The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the examiner. (ii) Students must retain a copy of each assignment submitted for assessment. This must be produced within 24 hours if required by the examiner. (iii) In accordance with university policy, the examiner may grant an extension of the due date of an assignment in extenuating circumstances. (iv) The examiner will normally only accept assessments that have been written, typed or printed on paper-based media. (v) Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner to negotiate such special arrangements. (vi) In the event that a due date for an assignment falls on a local public holiday in their area, such as a show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the examiner’s convenience.

2 Course weightings: Course weightings of topics should not be interpreted as applying to the number of marks allocated to questions testing those topics in an examination paper.

3 Referencing in assignments: Harvard (AGPS) is the referencing system required in this course. Students should use Harvard (AGPS) style in their assignments to format details of the information sources they have cited in their work. The Harvard (AGPS) style to be used is defined by the USQ Library’s referencing guide at <http://www.usq.edu.au/library/help/referencing/default.htm>.
4 Make-up work: Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non-directed personal study.

5 Deferred work: Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded: IDS (Incomplete - Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).

OTHER REQUIREMENTS

1 E-mail and Internet access: Students require access to e-mail and Internet access to UConnect for this course. Students also require a PC and Internet access for a connection to the USQ Oracle server. The PC should have the following specifications: Pentium 4 or above; 8 GB free disk space; 512 MB of memory, although 256 MB may be sufficient.

2 Some study materials and important information about the course will be made available via the online discussion group. Students are therefore expected to access the discussion group regularly and read all postings.