Course outline

Code: ICT321
Title: Architecture and Systems Integration

Faculty of Arts, Business and Law
School of Business
Teaching Session: Semester 2
Year: 2017
Course Coordinator: Dr Mingzhong Wang
Office: K2.28
Telephone: (07) 5456 5295
Email: mwang@usc.edu.au

1. What is this course about?
1.1 Course description
In this capstone course you will build upon the ICT knowledge gained throughout the degree program by developing skills in enterprise architecture planning (EAP) and in enterprise application integration (EAI). Using EAP, you will learn to create architectures that define and describe the data, applications, and technology needed to support organisations. In applying EAI, you will gain experience in creating strategic business solutions using Web services and middleware to integrate the functionality of an organisation’s existing applications, commercial packaged applications, and new code.

1.2 Course content
- Conceptual, logical, component, and operational views of Enterprise Information Architecture
- Cloud computing
- Information service lifecycle management
- Systems Integration
- Service Oriented Architecture and Web Services standards
- Information delivery in Web 2.0
- Business analytics and optimization

2. Unit value
12 units
3. **How does this course contribute to my learning?**

<table>
<thead>
<tr>
<th>Specific Learning Outcomes</th>
<th>Assessment Tasks</th>
<th>Graduate Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>On successful completion of this course you should be able to:</td>
<td>You will be assessed on the learning outcome in task/s:</td>
<td>Completing these tasks successfully will contribute to you becoming:</td>
</tr>
<tr>
<td>Creation of systems.</td>
<td>2</td>
<td>Creative and critical thinkers.</td>
</tr>
<tr>
<td>Apply initiative to solving problems competently in the discipline.</td>
<td>1 and 2</td>
<td>Empowered.</td>
</tr>
<tr>
<td>Apply communication or collaboration skills to specific problems.</td>
<td>1 and 3</td>
<td>Engaged.</td>
</tr>
<tr>
<td>Apply discipline specific knowledge and skills to problems.</td>
<td>1, 2 and 3</td>
<td>Knowledgeable.</td>
</tr>
<tr>
<td>Understand sustainability issues within the discipline.</td>
<td>1 and 3</td>
<td>Sustainability-focussed.</td>
</tr>
</tbody>
</table>

4. **Am I eligible to enrol in this course?**

Refer to the Coursework Programs and Awards - Academic Policy for definitions of “pre-requisites, co-requisites and anti-requisites”

4.1 **Enrolment restrictions**
Nil

4.2 **Pre-requisites**
ICT112 and (ICT211 or ICT220 or ICT221)

4.3 **Co-requisites**
Nil

4.4 **Anti-requisites**
Nil

4.5 **Specific assumed prior knowledge and skills**
N/A

5. **How am I going to be assessed?**

5.1 **Grading scale**
Standard – High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL)
5.2 Assessment tasks

<table>
<thead>
<tr>
<th>Task No.</th>
<th>Assessment Tasks</th>
<th>Individual or Group</th>
<th>Weighting %</th>
<th>What is the duration / length?</th>
<th>When should I submit?</th>
<th>Where should I submit it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IT Consultant’s Architectural Report based on a case study</td>
<td>Individual</td>
<td>20%</td>
<td>2000 words</td>
<td>Week 5, Friday</td>
<td>Online via Blackboard</td>
</tr>
<tr>
<td>2</td>
<td>Systems Integration in Practice</td>
<td>Individual</td>
<td>30%</td>
<td>N/A</td>
<td>Week 13, Friday</td>
<td>Online via Blackboard</td>
</tr>
<tr>
<td>3</td>
<td>Final examination</td>
<td>Individual</td>
<td>50%</td>
<td>N/A</td>
<td>Central examination period</td>
<td>In exam venue</td>
</tr>
</tbody>
</table>

100%

Assessment Task 1: IT Consultant’s Architectural Report based on a case study

**Goal:** You will demonstrate your knowledge of Analysis and Design at a business level.

**Product:** You will work individually on a formal proposal for a business detailing the architectural options and the advantages and disadvantages of the options for a business case study.

The report is to be styled as a formal management report and will be marked on the relevancy and synthesis of the content as well as the presentation of the report.

**Format:** Individual

**Criteria** Assessment criteria will be handed out with the assignment details.

**Generic skill assessed** Communication

**Skill assessment level** Graduate

Assessment Task 2: Systems Integration in Practice

**Goal:** You will demonstrate your ability to integrate heterogeneous systems into a cohesive application. You will be given a case study and will develop an application to suit the case study’s functionality needs.

**Product:** An individual project integrating a number of local and online services and resources.

**Format:** Individual

**Criteria** The assessment criteria will be supplied with the exercises. These will examine the functionality of the application, its user interface, code structure and readability.

**Generic skill assessed** Applying technologies

**Skill assessment level** Graduate
Assessment Task 3: Final examination

<table>
<thead>
<tr>
<th>Goal:</th>
<th>You will demonstrate your knowledge and understanding of the course content.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product:</td>
<td>A two hour closed book exam to be held during the scheduled examination period. The date and time of the exam will be advised by Student Administration during the semester. The examination will cover all lecture, reading and tutorial material from weeks 1 to 12.</td>
</tr>
<tr>
<td>Format:</td>
<td>Individual</td>
</tr>
<tr>
<td>Criteria</td>
<td>Understanding of requisite knowledge covered within the course</td>
</tr>
<tr>
<td>Generic skill assessed</td>
<td>Applying technologies</td>
</tr>
<tr>
<td>Skill assessment level</td>
<td>Graduate</td>
</tr>
</tbody>
</table>

5.3 Additional assessment requirements

Plagiarism
In order to minimise incidents of plagiarism and collusion, 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.

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

5.4 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 to negotiate an outcome.

6. How is the course offered?

6.1 Directed study hours
On campus Lecture: 1 hour per week
On campus Computer workshop: 2 hours per week

6.2 Teaching semester/session(s) offered
Semester 2
## Course Outline: ICT321  Architecture and Systems Integration

### 6.3 Course activities

<table>
<thead>
<tr>
<th>Teaching Week / Module</th>
<th>What key concepts/content will I learn?</th>
<th>What activities will I engage in to learn the concepts/content?</th>
<th>Directed Study Activities</th>
<th>Independent Study Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction • Challenges • Vision</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>IT Governance • Data domains • Information governance • Information security</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>EIA Conceptual Model • Enterprise architecture overview • EIA Reference Architecture • Conceptual model</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>EIA Component Model • Component model • Component description</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>EIA Operational Model • Context • Service quality • Operational patterns</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Service Oriented Architecture • SOA overview • SOA Reference Architecture</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Enterprise Application Integration • Concepts, types, and key issues • ESB</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Cloud Computing • Concept and features • Service and delivery models • Scalability</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Enterprise Information Integration • Data integration • Lifecycle and stages</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td><strong>Mid Semester Break</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Information Delivery in Web 2.0 • Web 2.0 • Mashup</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Data Warehousing • OLTP and OLAP • Data warehouse</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Business Intelligence and Analytics</td>
<td>Lecture and computer workshop</td>
<td>Textbook and supplementary reading list</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Course Review</td>
<td>Lecture No computer workshop</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. **What resources do I need to undertake this course?**

7.1 **Prescribed text(s)**

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

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Title</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mario Godinez, Eberhard Hechler, Klaus Koenig, Steve Lockwood, Martin Oberhofer, Michael Schroek</td>
<td>2010</td>
<td><em>The Art of Enterprise Information Architecture: A Systems-Based Approach for Unlocking Business Insight</em></td>
<td>IBM Press</td>
</tr>
</tbody>
</table>

* Later editions are acceptable

7.2 **Required and recommended readings**

Lists of required and recommended readings may be found for this course on its Blackboard site. These materials/readings will assist you in preparing for tutorials and assignments, and will provide further information regarding particular aspects of your course.

7.3 **Specific requirements**

N/A

7.4 **Risk management**

Health and safety risks have been assessed as low. It is your responsibility to research and understand risks of specific courses and to review the USC's health and safety principles by viewing the online induction training for students.

8. **How can I obtain help with my studies?**

In the first instance you should contact your tutor, then the Course Coordinator. Additional assistance is provided to all students through Peer Advisors and Academic Skills Advisors. You can drop in or book an appointment. To book: Tel: +61 7 5430 2890 or Email: studentcentral@usc.edu.au

9. **Links to relevant University policies 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

10. General enquiries
In person:
- Sippy Downs - Student Central, Ground Floor, Building C
- USC SouthBank - Student Central, Building B, Ground floor (level 1)
- USC Gympie - Student Central, 71 Cartwright Road, Gympie
- USC Fraser Coast - Student Central, Building A
Tel: +61 7 5430 2890
Email: studentcentral@usc.edu.au