USC

C O U R S E   O U T L I N E

ICT705 Data and System Integration

Course Coordinator: Damian Hills (dhills1@usc.edu.au) **School:** School of Science, Technology and Engineering

2021 | Semester 1

USC Southbank	**ON CAMPUS**	Most of your course is on campus but you may be able to do some components of this course online.
Online	**ONLINE 1**	You can do this course without coming onto campus.

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

Enterprises generally own various operational systems and data storage across departments and locations. The integration of their processes and data becomes vital to achieve the goal of "Intelligent Enterprise" and gaining competitive advantage. This course helps you to learn the foundational knowledge and best practices in enterprise application and data integration. You will gain experience in creating strategic business solutions using Web services and integrators to integrate the functionality and data of an organisation's existing applications and future plans.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
ON CAMPUS			
Lecture	1hr	Not applicable	Not Yet Determined
Laboratory	2hrs	Not applicable	Not Yet Determined

1.3. Course Topics

Week	Topic
1	Introduction
2	Enterprise information architecture
3	Service oriented computing
4	Web services & SOAP
5	In class Exam
6	RESTful services & mashups
7	Cloud computing
8	Application integration
9	Data warehousing
10	Extract Transform and Load
11	Schema manipulation
12	Wrappers and query processing

2. What level is this course?

700 Level (Specialised)

Demonstrating a specialised body of knowledge and set of skills for professional practice or further learning. Advanced application of knowledge and skills in unfamiliar contexts.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...	GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1 Discuss the recent developments in theory, issues and practice relating to application and data integration.	Knowledgeable
2 Investigate, evaluate, and plan the lifecycle of data through an organisation	Creative and critical thinker Engaged
3 Use scripting languages and tools to manipulate, analyse and transform big data, including cloud-based solutions.	Creative and critical thinker Empowered
4 Apply discipline specific knowledge and skills to problems.	Knowledgeable Empowered
5 Demonstrate advanced written communication skills in a business context.	Engaged

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. Pre-requisites

Enrolled in a Postgraduate Program

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

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

6.2. Details of early feedback on progress

Task 1 will be an opportunity to give students feedback on their understanding of their knowledge of enterprise information architecture at a business level.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Examination	Individual	20%	1hr	Week 5	Online Test (Quiz)
All	2	Examination	Individual	40%	2 hours	Week 9	Online Test (Quiz)
All	3	Artefact - Technical and Scientific, and Written Piece	Individual	40%	Working code and application plus 750 word report	Week 12	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Mid Sem Exam

GOAL:	This assessment task will demonstrate your knowledge of Enterprise Information Architecture and Service Computing covering material from weeks 1 to 4 inclusive.
PRODUCT:	Examination
FORMAT:	This one-hour examination consists of a set of multiple-choice questions and short answer questions to test the understanding and application of concepts. This is an individual assessment.

CRITERIA:	**No.**		**Learning Outcome assessed**
	1	Relevancy and synthesis of theory and practice relating EIA and Service Computing	4
	2	Application of specific knowledge and skills to business enterprise problems	4

All - Assessment Task 2: Week 9 Exam

GOAL:	This assessment task will demonstrate your knowledge of all material covered in this course
PRODUCT:	Examination
FORMAT:	This two-hour examination will consist of a set of multiple choice questions and short answer questions to test understanding and application of concepts. This is an individual assessment.

CRITERIA:	**No.**		**Learning Outcome assessed**
	1	Your responses on the exam questions will be assessed on the basis of your demonstration of knowledge from the workshop activities, lectures and readings specified during the lecture series.	1 4

All - Assessment Task 3: Systems Integration in Practice

GOAL:	You will demonstrate your ability to integrate heterogeneous systems into a cohesive application.
PRODUCT:	Artefact - Technical and Scientific, and Written Piece
FORMAT:	You will be given a case study and will develop an application to suit the case study's functionality needs. You will use tools developed in computer workshops to achieve the application and data integration requirements. Beside the runnable application, you also need to present your design and analysis in the form of a written report. A guideline structure will be provided on Blackboard.

CRITERIA:	No.		Learning Outcome assessed
	1	Presentation of a cohesive application - including user interface, code structure and readability	3
	2	Design and analysis to suit the case study	2 4
	3	Demonstrate advanced written communication skills in a business context	5

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

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

Please note: 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. Resources may be required or recommended.

REQUIRED?	AUTHOR	YEAR	TITLE	PUBLISHER
Required	AnHai Doan, Alon Halevy, and Zachary Ives	2012	Principles of Data Integration	Morgan Kaufmann
Required	Mario Godinez, Eberhard Hechler, Klaus Koenig, Steve Lockwood, Martin Oberhofer, Michael Schroeck	2010	The Art of Enterprise Information Architecture: A Systems-Based Approach for Unlocking Business Insight	IBM Press

8.2. Specific requirements

Not applicable

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility 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 and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training 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:

The final mark is in the percentage range 47% to 49.4%
The course is graded using the Standard Grading scale
You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may 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.

10.4. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the Learning Advisers web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.5. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to Student Hub, email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.6. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, , injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, AccessAbility Services can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to Student Hub, email AccessAbility@usc.edu.au or call 07 5430 2890.

10.7. 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

10.8. 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
Email: studentcentral@usc.edu.au