



ITEC871

Information Systems Design and Management

S2 Evening 2018

Dept of Computing

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Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff

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Credit points

4

Prerequisites

Admission to MInfoTech or MEng or MSc

Corequisites

Co-badged status

COMP771

Unit description

This unit focuses on enterprise management information systems and the technologies used in their design, implementation and maintenance. The alignment of information systems with business strategy and the socio-technical aspects of systems development are explored. Systems discussed include ERP, CRM, Business Intelligence and Groupware. The nexus between social media, cloud computing, mobile devices and big data is considered. A case study analysing the business rationale for an enterprise systems project is conducted.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.

Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..

Use your understanding of the nexus of mobile, cloud, social and big data trends to an

enterprise IT strategic plan to generate opportunities from these developing technologies..

Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Watson Analytics</u>	15%	No	Week 4
<u>ERP Analysis</u>	15%	No	Week 6
<u>BI Solution and Report</u>	20%	No	Week 12
<u>Final Exam</u>	50%	No	Exam Week

Watson Analytics

Due: **Week 4**

Weighting: **15%**

This is an individual assignment using IBM's cloud based machine learning platform called Watson. Students choose from a series of given data sets to analyse using Watson. A detailed graphic representation of the data is critically evaluated.

On successful completion you will be able to:

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

ERP Analysis

Due: **Week 6**

Weighting: **15%**

This is an individual assignment which considers a detailed real world case study about a failed

ERP implementation and provides guidance based on course material on how this company should now proceed. This real company in Taiwan failed with their first wave ERP upgrade. Students are to identify the reasons for this failure and consider a series of different go forward strategies based on the latest available technology.

On successful completion you will be able to:

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

BI Solution and Report

Due: **Week 12**

Weighting: **20%**

This is an individual assignment which focuses on the work covered in the business intelligence segment. It requires a deep understanding of BI suites in order to complete a set of tasks. The objective is that upon completion of the assignment, students will gain a deeper understanding of the design, implementation and management concepts of business intelligence systems in the enterprise.

On successful completion you will be able to:

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Final Exam

Due: **Exam Week**

Weighting: **50%**

This is a closed book exam with short and long answer questions based on the lecture and reference material presented throughout the course. The questions vary in difficulty. The exam is composed of two parts, A and B, reflecting the two lecture components of the course.

On successful completion you will be able to:

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Delivery and Resources

Recommended Texts

The following text is recommended, especially for students without an extensive IT background:

K. C. Laudon and J. P. Laudon “Management Information Systems: Managing The Digital Firm” 14th Edition, Pearson, 2015. This book is available from the University Co-op Bookstore. If unsure about the value of this text, I suggest you first borrow a copy from the library and make your own assessment. I will be referencing the 14th and most up to date edition, however, earlier editions are quite similar.

The following books are suggested as recommended reading. Copies of these books are available from the library.

Sumner, M, “Enterprise Resource Planning” Prentice Hall, 2005

Magal, S.R. and Word, J., “Integrated Business Processes with ERP Systems”, Wiley, 2012.

Turban, E., Sharda, R, Delen, D and King, D, ”Business Intelligence: A Managerial Approach” 3rd Edition, Pearson, New International Edition, 2014

Lectures will list appropriate Web based references and further reading for some of the rapidly evolving technologies discussed in this course. These additional references will be available for download through the class website.

Unit Material

A student folder with all the lecture notes and electronic references will be available for download through the class web site on iLearn at: <https://ilearn.mq.edu.au/>

Supplementary Exam

If you receive special consideration for the final exam, a supplementary exam will be scheduled in the week of December 17-21 2018. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

Unit Schedule

Week	Lecturer	Topic	References
1	Krycer	Course Introduction Big Data Analytics Analytics for Marketing	IBM, Gartner, Forrester, DMS
2	Krycer	Analytics for Industrial Applications Cloud Computing IBM Watson Analytics <i>Hand out Assignment One (Individual Assignment) 'Watson Analytics'</i>	Gartner IBM
3	Krycer	ERP Implementation Issues ERP Modules: Sales and Marketing ERP Modules: Accounting and Finance	Sumner
4	Krycer	ERP Modules: Production and Materials ERP Modules: Human Resources Postmodern ERP Strategies <i>Assignment One Due</i> <i>Hand out Assignment Two "ERP Analysis"</i>	Sumner Gartner

5	Krycer	Succeeding with SAP	Michael Hammer
		Mobile Technology Trends	Andressen Horowitz
		Enterprise ERP Architecture	Guest Speaker
6	Krycer	Business Value of Information Systems	Gartner
		Financial Metrics for IS Investments	Laudon & Laudon
		Strategic Alignment	Henderson and Venkatraman
		<i>Assignment Two Due</i>	
7	Le	Business Intelligence: Introduction	Recommended References
		Concepts, Design, Architecture & Technology	Lecture Notes
		<i>Hand Out Assignment 3 BI Solution & Report using Tableau</i>	
8	Le	Business Intelligence:	Recommended References
		Self-service & Corporate Systems/Tools	Lecture Notes
		<i>Hand out Assignment Three "BI Solution & Report"</i>	
9	Le	Business Intelligence:	Recommended References
		Design & Use Cases	Lecture Notes
		Assignment Consultation	
10	Le	Industry Guest Speaker: Pooyan Asgari (Domain, Fairfax Media)	Recommended References
		Assignment Consultation	Lecture Notes
11	Le	Customer Relationship Management (CRM):	Recommended References
		Introduction & Case Study	Lecture Notes
12	Le	Customer Relationship Management (CRM):	Recommended References
		Implementation & Emerging Trends	Lecture Notes
		<i>Assignment Three Due</i>	
13	ALL	Revision	

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-centr) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-centr>)

al). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Assessment tasks

- Watson Analytics
- ERP Analysis
- BI Solution and Report
- Final Exam

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Assessment tasks

- Watson Analytics
- ERP Analysis
- BI Solution and Report
- Final Exam

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..

- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Assessment tasks

- Watson Analytics
- ERP Analysis
- BI Solution and Report
- Final Exam

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Assessment tasks

- Watson Analytics
- ERP Analysis
- BI Solution and Report

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different

social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcomes

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing technologies..
- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Assessment tasks

- Watson Analytics
- ERP Analysis
- BI Solution and Report
- Final Exam

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcomes

- Analyse the business value of information systems to assist in the justification of an IT investment based on the delivery of specific business benefits.
- Analyse the functionality and business context for major enterprise systems including ERP, BI, CRM and Enterprise 2.0, and recommend appropriate investments based on the specific business context..
- Use your understanding of the nexus of mobile, cloud, social and big data trends to an enterprise IT strategic plan to generate opportunities from these developing

technologies..

- Critically evaluate contemporary and emerging enterprise IT technologies to establish a watching brief for an IT department within a major enterprise.

Assessment tasks

- Watson Analytics
- ERP Analysis
- BI Solution and Report

Standards

Your standards, namely HD, D, CR, P summarize as many different levels of achievement. Each standard is precisely defined to help students know what kind of performance is expected to deserve a certain mark. The standards corresponding to the learning outcomes are given below:

HD	Apply techniques and knowledge in new contexts, show breadth and depth of understanding of business objectives, context, systems analysis and design. Fully capable support major strategic initiatives with a sound business case and technical solution.	A sound grounding on how major strategic IT systems are managed. Show breadth and depth of understandings on issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability. Able to apply these techniques and knowledge in new contexts.	Demonstrate leadership, creativity, critical thinking and analysis skills. Enthusiastic in acquiring new knowledge in the IS Systems management area. Demonstrate capability in applying new IS management knowledge to solve real-world problems. Conduct team work effectively and play a key role in moving the whole IT team forward.
D	Apply techniques and knowledge in some new contexts, show breadth and depth of understanding across most of the topics including: business objectives, context, systems analysis and design. Largely capable to support major strategic initiatives with a sound business case and technical solution.	A sound grounding in most topics related to how major strategic IT systems are managed. Show breadth and depth of understandings on most issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability. Able to apply these techniques and knowledge in some new contexts.	Demonstrate some leadership occasionally. Show creativity, critical thinking and analysis skills. Have the capability in applying IS systems management knowledge to solve real-world problems. Collaborate with team members well and finish assigned tasks on time and with good quality.
CR	Show breadth of understanding across most of the topics including: business objectives, context, systems analysis and design. Some capability to support major strategic initiatives with a sound business case and technical solution.	Understands some aspects of how major strategic IT systems are managed. Show breadth of understandings on most issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability.	Demonstrate analysis skills in some occasions. Know how to apply IS systems management knowledge to solve some of the real-world problems. Able to finish assigned tasks on time and with good quality most of the time.

P	Can reproduce definitions and ideas, show some breadth of understanding of the topics including: business objectives, context, systems analysis and design. Some capability to support major strategic initiatives with a sound business case and technical solution.	Can reproduce some definitions and ideas, show some breadth on issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability.	Demonstrate limited analysis skills. Can apply IS systems management knowledge to solve limited real-world problems. Able to finish all assigned tasks on time and with acceptable quality.
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Grading

At the end of the semester, you will receive a grade that reflects your achievement in the unit

- **Fail (F)**: does not provide evidence of attainment of all learning outcomes. There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; and incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the discipline.
- **Pass (P)**: provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the field of study; and communication of information and ideas adequately in terms of the conventions of the discipline. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes.
- **Credit (Cr)**: provides evidence of learning that goes beyond replication of content knowledge or skills relevant to the learning outcomes. There is demonstration of substantial understanding of fundamental concepts in the field of study and the ability to apply these concepts in a variety of contexts; plus communication of ideas fluently and clearly in terms of the conventions of the discipline.
- **Distinction (D)**: provides evidence of integration and evaluation of critical ideas, principles and theories, distinctive insight and ability in applying relevant skills and concepts in relation to learning outcomes. There is demonstration of frequent originality in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the discipline and the audience.
- **High Distinction (HD)**: provides consistent evidence of deep and critical understanding in relation to the learning outcomes. There is 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; creativity in application.

In this unit, your final grade depends on your performance in each part of the assessment. For each task, you receive a mark that combines your standard of performance regarding each

learning outcome assessed by this task. Then the different component marks are added up to determine your total mark out of 100. Your grade then depends on this total mark and your overall standards of performance.

Obtaining a grade higher than a Pass (P) in this unit will require a student to obtain (in addition to the above):

- the required total number of marks (Credit - 65, Distinction - 75, High Distinction - 85).

Changes since First Published

Date	Description
23/07/2018	Added the mandatory Supplementary Exam section under Delivery and Resources