SUBJECT OUTLINE

31257 Information System Development Methodologies

Course area   UTS: Information Technology

Delivery   Autumn 2020; standard mode; City

Credit points   6cp

Requisite(s)   31269 Business Requirements Modelling

Result type   Grade and marks

Recommended studies: knowledge of the software development life-cycle and systems modelling techniques

Subject coordinator

Coordinator:

Prof. Ghassan Beydoun

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Teaching staff

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Subject description

Successfully designing and developing information systems is complex and difficult. A number of techniques and approaches have been developed but there are no 'silver bullet' solutions to the problems that plague IT development projects. This subject introduces students to a number of different methodologies and provides them with the skills they need to identify their strengths and weaknesses in key areas. These issues are of critical importance to those wishing to successfully manage software projects.

Subject learning objectives (SLOs)

Upon successful completion of this subject students should be able to:

1. Analyse key aspects of a number of Information System development methodologies to develop business Systems.

2. Explain that different methodologies target different aspects of Information System development, such as requirements gathering, project management or cross-organisational development.

3. Evaluate development methodologies and articulate their underlying philosophies to solve organisational Information System problems.

4. Illustrate a methodology, or aspects of different methodologies to substantiate the suitability of particular circumstances.

Course intended learning outcomes (CILOs)

This subject also contributes specifically to the development of the following Course Intended Learning Outcomes (CILOs):

- Socially Responsible: FEIT graduates identify, engage, interpret and analyse stakeholder needs and cultural perspectives, establish priorities and goals, and identify constraints, uncertainties and risks (social, ethical, cultural, legislative, environmental, economics etc.) to define the system requirements. (B.1)

- Design Oriented: FEIT graduates apply problem solving, design and decision-making methodologies to develop

components, systems and processes to meet specified requirements. (C.1)

- Technically Proficient: FEIT graduates apply abstraction, mathematics and discipline fundamentals, software, tools and techniques to evaluate, implement and operate systems. (D.1)

- Collaborative and Communicative: FEIT graduates work as an effective member or leader of diverse teams, communicating effectively and operating within cross-disciplinary and cross-cultural contexts in the workplace. (E.1)

Teaching and learning strategies

Students will learn through a combination of lectures and tutorials where they will engage in collaborative learning activities as well as online discussions with their peers. Students will form teams to investigate information systems development methodologies with reference to case studies.

Information Systems (IS) Development Methodologies is supported by slides, tutorial work and case studies on UTSOnline and a text book for this subject. Students are required to access and use the weekly pre-class materials as a sense making exercise attempting to create questions and explanations that will be used in class. The slides include directions on how to solve different problems arising out of the system at different times. Questions arise from discussions and experiences, these are proposed and discussed in tutorial groups. In class the lecturer explains the complex background for each topic based on these UTSOnline materials and encourages students to use their sense making to clarify their interpretations through verbal feedback.

Tutorials will commence in Week 3. Tutorials follow the class, in which students form groups. Each week, fifteen minutes is spent to discuss feedback on the assessment tasks. Students work in groups and are given questions based on a case study. They are required to use design thinking to define the problem and encouraged to come up with solution ideas that they present to the whole class. Students are expected to critique and evaluate each other's responses. This imparts peer feedback on a weekly basis so that students learn from one another. Tutorial activities and assessment tasks are based on collaborative activities which require decision making skills.

Content (topics)

1. Information System Development Life Cycle
2. Techniques and Tools
3. Information System Development Methodologies
4. Framework for evaluating methodologies
5. Comparison of some methodologies

Program

Week/Session	Dates	Description
1	Week beginning 9 Mar	Preparation Week (begining 2/3)
		Watch the following videos on UTSOnline:
		- Learning Futures at UTS-New Learning Environment
		- Introduction to ISDM-31257
		https://www.youtube.com/watch?v=XAmEGADLuBA&feature=youtu.be
		- UTS Model of Learning
		https://www.youtube.com/watch?v=rL0eFmac7mA&feature=youtu.be
		- Complete the Tutorial and Quiz "Avoiding Plagiarism: Engineering and IT"
		https://avoidingplagiarism.uts.edu.au/?q=FEIT#tut
		Notes:
		(Begining 9/3) Introduction to the Subject , Assessments,

		Requirements to Pass and Recommeded Texts. (GB)
2	16 Mar	Introduction to System Development Methodologies (GB) Class and Tutorial
3	23 Mar	Process Model Concepts, Waterfall vs Unified Process vs Agility (GB) Class and tutorial.
4	30 March	RUP Process (GB) Class and tutorial.
5	6 Apr	Further OO Techniques and processes, version control Tuorials and Class on Monday only. Friday Public Holiday (GB)
6	13 Apr	Further OO Techniques and Processes, Version Control Tuorials and Class on Friday only. Monday Public Holiday (GB)
	20 Apr	StuVac - No Class Tutorials only
7	27 April	Agile Methodologies (DC) **Assessment 1:** Quiz 1 in Tutorial
8	4 May	SCRUM Process (DC) Class and tutorials.
9	11 May	Design Thinking - 1 (DC) Class and tutorials.

10	18 May	Design Thinking - 2
		(DC)
		Class and tutorials.

11	25 May	Evaluation of Methodologies
		(DC)
		Assessment 2 - Project Report Due
		Class and tutorials
		Notes:

12	1 June	**Assessment 3 - Review Quiz**
		StuVac - No Class
		Notes:
		Classes and tutorials are subject to change.

Assessment

For group assessments in this Subject, students will be assessed as a team, where each member of the team will receive the same mark for the assignment. If you have trouble with the operation of your group, ask your Tutor for advice (preferably ask as a group). If some of the groups feel that other members are not contributing, the Tutor should be informed and a group meeting held to produce a solution. In extreme cases a group member may be asked by the lecturer to do extra work or accept a lower mark. No complaints about group operation will be considered after the assignment has been handed in to the tutor.

Assessment details and marking criteria can be found in UTSOnline.

For late submission please see the faculty procedure and advice section.

Assessment task 1: Class Quiz

Objective(s):	This assessment task addresses the following subject learning objectives (SLOs):
	1, 2 and 4
	This assessment task contributes to the development of the following Course Intended Learning Outcomes (CILOs):
	B.1, C.1 and E.1
Groupwork:	Individual
Weight:	20%
Task:	Practice for developing an Information System for a Business Application Project (e.g. Health Information System) documenting the steps involved. Details of the project is available to students in Week 2.

Due:	Week 6
Criteria:	Assessment details and marking criteria can be found in UTSOnline.

Assessment task 2: Project Report and Presentation

Intent:	Assessment task 2: Project Report and Presentation
Objective(s):	This assessment task addresses the following subject learning objectives (SLOs):
	1, 2, 3 and 4
	This assessment task contributes to the development of the following Course Intended Learning Outcomes (CILOs):
	B.1, C.1, D.1 and E.1
Type:	Presentation
Groupwork:	Group, group and individually assessed
Weight:	40%
Task:	Prepare a report for the development methodology of a business system. Students are required to argue for their proposed approach by comparing aspects of methodologies and outlining the benefits and drawbacks of each. Students present their proposal to the class.
	Weight: 30% (Group Report 30%, Individual Presentation 10%)
Length:	The Report should not be more than 2000 words.
Due:	Week 11 Oral Presentation Weeks 11 & 12
Further information:	Submit softcopy of the Report in Turnitin link. Feedback may also be provided online. All presentations for Assessment 2 will take place towards the end of the session, and all students are expected to be present and participate in a formal presentation of the project.

Assessment task 3: Review Quiz

Objective(s):	This assessment task addresses the following subject learning objectives (SLOs):
	1, 2 and 3
	This assessment task contributes to the development of the following Course Intended Learning Outcomes (CILOs):
	B.1 and C.1
Type:	Examination
Groupwork:	Individual
Weight:	30%
Task:	A 1.25 hour review quiz will be held during the formal lecture period in week 12 of the Semester.

Due: Week 12

Assessment task 4: Participation in Tutorials

Objective(s):	This assessment task addresses the following subject learning objectives (SLOs):
	3 and 4
	This assessment task contributes to the development of the following Course Intended Learning Outcomes (CILOs):
	D.1 and E.1
Type:	Demonstration
Groupwork:	Individual
Weight:	10%
Task:	Participate weekly in discussions and group activities during tutorials.

Assessment feedback

Assessments 1, 2, and 3 will be returned to students with written feedback two weeks later along with collective verbal feedback in the tutorials.

Minimum requirements

In order to pass the subject, a student must achieve an overall mark of 50% or more.

Recommended texts

Pressman, R.S. and Maxim, B.R. Software Engineering: A practitioner's Approach. Ed.8. McGraw Hill, 2015.

References

Chaffey, D. and White, G.(2011). Business Information Management: Improving performance using information systems. 2nd ed. Pearson.

Baltzan,P.,Lynch,K. and Fisher,J.(2015). Business Driven Information Systems. 3rd ed. McGraw-Hill.

Whitten,J.L. and Bentley, L.D. Systems Analysis and Design Methods. 7th ed. McGraw-Hill.

Jayaratna,N (1994). Understanding and evaluating methodologies.NIMSAD:A systematic framework, McGraw-Hill.

Avison, David and Fitzgerald, Guy (2006). Information Systems Development: Methodologies, Techniques and Tools, 4th ed., McGraw-Hill.

Other resources

Online support for this subject will be via UTSOnline at http://online.uts.edu.au

Graduate attribute development

For a full list of the faculty's graduate attributes refer to the FEIT Graduate Attributes webpage.

For the contribution of subjects taken in the Bachelor of Engineering (Honours) or Master of Professional Engineering to the Engineers Australia Stage 1 Competencies, see the faculty's Graduate Attributes and the Engineers Australia Stage 1 Competencies webpage.

Assessment: faculty procedures and advice
Marking criteria

Marking criteria for each assessment task will be available on the Learning Management System: UTS Online.

Extensions

When, due to extenuating circumstances, you are unable to submit or present an assessment task on time, please contact your subject coordinator before the assessment task is due to discuss an extension. Extensions may be granted up to a maximum of 5 days (120 hours). In all cases you should have extensions confirmed in writing.

Special consideration

If you believe your performance in an assessment item or exam has been adversely affected by circumstances beyond your control, such as a serious illness, loss or bereavement, hardship, trauma, or exceptional employment demands, you may be eligible to apply for Special Consideration.

Late penalty

Work submitted late without an approved extension is subject to a late penalty of 10 per cent of the total available marks deducted per calendar day that the assessment is overdue (e.g. if an assignment is out of 40 marks, and is submitted (up to) 24 hours after the deadline without an extension, the student will have four marks deducted from their awarded mark). Work submitted after five calendar days is not accepted and a mark of zero is awarded.

For some assessment tasks a late penalty may not be appropriate – these are clearly indicated in the subject outline. Such assessments receive a mark of zero if not completed by/on the specified date. Examples include:

a. weekly online tests or laboratory work worth a small proportion of the subject mark, or
b. online quizzes where answers are released to students on completion, or
c. professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date, or
d. take-home papers that are assessed during a defined time period, or
e. pass/fail assessment tasks.

Querying results

If you wish to query the result of an assessment task or the final result for a subject:

- Assessment task: query the result with the Subject Coordinator within 5 working days of the date of release of the result
- Final subject result: submit an application for review within 5 working days of the official release of the final subject result.

Academic liaison officer

Academic liaison officers (ALOs) are academic staff in each faculty who assist students experiencing difficulties in their studies due to: disability and/or an ongoing health condition; carer responsibilities (e.g. being a primary carer for small children or a family member with a disability); and pregnancy.

ALOs are responsible for approving adjustments to assessment arrangements for students in these categories. Students who require adjustments due to disability and/or an ongoing health condition are requested to discuss their situation with an accessibility consultant at the Accessibility Service before speaking to the relevant ALO.

Statement about assessment procedures and advice
This subject outline must be read in conjunction with the Coursework Assessments policy and procedures.

Statement on copyright
Teaching materials and resources provided to you at UTS are protected by copyright. You are not permitted to re-use these for commercial purposes (including in kind benefit or gain) without permission of the copyright owner. Improper or illegal use of teaching materials may lead to prosecution for copyright infringement.

Statement on plagiarism
Plagiarism and academic integrity

At UTS, plagiarism is defined in Rule 16.2.1(4) as: 'taking and using someone else's ideas or manner of expressing them and passing them off as ... [their] own by failing to give appropriate acknowledgement of the source to seek to gain an advantage by unfair means'.

The definition infers that if a source is appropriately referenced, the student's work will meet the required academic standard. Plagiarism is a literary or an intellectual theft and is unacceptable both academically and professionally. It can take a number of forms including but not limited to:

- copying any section of text, no matter how brief, from a book, journal, article or other written source without duly acknowledging the source
- copying any map, diagram, table or figure without duly acknowledging the source
- paraphrasing or otherwise using the ideas of another author without duly acknowledging the source
- re-using sections of verbatim text without using quote marks to indicate the text was copied from the source (even if a reference is given).

Other breaches of academic integrity that constitute cheating include but are not limited to:

- submitting work that is not a student's own, copying from another student, recycling another student's work, recycling previously submitted work, and working with another student in the same cohort in a manner that exceeds the boundaries of legitimate cooperation
- purchasing an assignment from a website and submitting it as original work
- requesting or paying someone else to write original work, such as an assignment, essay or computer program, and submitting it as original work.

Students who condone plagiarism and other breaches of academic integrity by allowing their work to be copied are also subject to student misconduct Rules.

Where proven, plagiarism and other breaches of misconduct are penalised in accordance with UTS Student Rules Section 16 – Student misconduct and appeals.

Avoiding plagiarism is one of the main reasons why the Faculty of Engineering and IT is insistent on the thorough and appropriate referencing of all written work. Students may seek assistance regarding appropriate referencing through UTS: HELPS.

Work submitted electronically may be subject to similarity detection software. Student work must be submitted in a format able to be assessed by the software (e.g. doc, pdf (text files), rtf, html).

Further information about avoiding plagiarism at UTS is available.

Retention of student work

The University reserves the right to retain the original or one copy of any work executed and/or submitted by a student as part of the course including, but not limited to, drawings, models, designs, plans and specifications, essays, programs, reports and theses, for any of the purposes designated in Student Rule 3.9.2. Such retention is not to affect any copyright or other intellectual property right that may exist in the student's work. Copies of student work may be retained for a period of up to five years for course accreditation purposes. Students are advised to contact their subject coordinator if they do not consent to the University retaining a copy of their work.

Statement on UTS email account

Email from the University to a student will only be sent to the student's UTS email address. Email sent from a student to the University must be sent from the student's UTS email address. University staff will not respond to email from any other email accounts for currently enrolled students.