INFO5991: SERVICES SCIENCE MANAGEMENT AND ENGINEERING

Semester 1, 2018 | 6 Credit Points | Mode: Normal-Evening
Sessions Valid: Semester 1, Semester 2
Coordinator(s): Joseph Davis, Andrea Stern

WARNING: This unit version is currently under review and is subject to change!

1. INTRODUCTION

The service economy plays a dominant and growing role in economic growth and employment in most parts of the world. Increasingly, the improved productivity and competitive performance of firms and nations in services rely on innovative and effective design, engineering, and management of IT-centric services.

This unit offers IT graduates and professionals an understanding of the role of IT-centric services in a social, economic and business context, as well as knowledge of the principles of their design, engineering, and management in a service-oriented IT framework. Delivery of the unit is driven by a critical approach to the literature, live case studies presented by industry professionals and writing a Consultants' Report. Its learning outcomes are based on industry needs. Three modules address the range of topics in Services Science, Management, and Engineering (SSME).

1. Service fundamentals context and strategy: the service economy and the nature of service systems; the role IT-centric services in a social, economic and business context; IT-centric services optimisation and innovation.

2. Designing and Engineering IT-centric services: service design; service-oriented enterprise and IT architecture.

3. Sourcing, governing and managing IT-centric services: outsourcing IT-centric services (including services in the cloud); IT-centric services governance and management (COBIT and ITIL; service level agreements.

Critical analysis of articles and the persuasive use of evidence in writing are cornerstones of the unit. Students learn how to apply these skills in business consulting processes to a business case drawn from a recent consulting project at a large multinational organisation. The processes include: clarifying the client's situation and problems, researching evidence related to it, analysing the evidence, developing options for solving the problems, presenting recommendations persuasively to the client both orally and in a written Consultants' Report. These steps are scaffolded for the student, with formative assessment, and increasing levels of difficulty.

Students need to be able to read, critically analyse, and report on an article or case study every three weeks. If you are not confident of your skills in these areas, you can enroll in the free courses provided by the University's Learning Centre in Academic Reading and Writing and Oral Communication Skills. Some of these courses are specifically designed for students with a non-English speaking background. Familiarity with using Library reference tools and the ability to locate scholarly resources in the Library's electronic databases is also necessary. See the Library's Research and information skills page for help with this http://www.library.usyd.edu.au/skills/

2. LEARNING OUTCOMES

Learning outcomes are the key abilities and knowledge that will be assessed in this unit. See assessment summary table below for details of which outcomes are assessed where. Outcomes are listed according to the course goals that they support.

Engineering/IT Specialisation (Level 4)
    1. Explain the changing nature of services and the service economy, and the significance IT-centric services in this.
    2. Apply a service-oriented view of business to IT design and engineering
    3. Apply principles of IT-centric service governance and management to the service lifecycle
Information Seeking (Level 4)
    4. Critically analyse and synthesise evidence-based material relating to SSME topics
Communication (Level 4)
    5. Report own analysis and synthesis in a persuasive analytical style suited to business and technical reporting, in oral and written form.
Professional Conduct (Level 4)
    6. Practice self and team reflection
Project and Team Skills (Level 4)
    7. Listen to others and negotiate team responsibilities

For further details of course goals related to these learning outcomes, see online unit outline at http://cusp.eng.usyd.edu.au/students/view-unit-page/alpha/INFO5991 .

3. ASSESSMENT TASKS

ASSESSMENT SUMMARY

Assessment name	Team-based?	Weight	Due	Outcomes Assessed
Ass.1 Group profile and capability summary	Yes	3%	Week 3 (Thursday, 5 pm)	6, 7
Ass.2 Constructing a synthesis grid	No	6%	Week 5 (Thursday, 5 pm)	2, 3, 4, 5, 6
Ass.3 Summary and draft recommendation	No	6%	Week 7 (Thursday, 5 pm)	2, 3, 4, 5, 6
In class mid-semester test	No	20%	Week 8 (Thursday, 6 pm)	1, 2
Ass.4 Presentation of recommendations to client	Yes	5%	Week 12 (Thursday, 6 pm)	4, 5, 6, 7
In class end-of-semester test	No	20%	Week 13 (Thursday, 6 pm)	1, 2, 3, 4
Ass.5 Consultants` Report	Yes	30%	Exam Period (Thursday, 6 pm)	1, 2, 3, 4, 5, 6, 7
Group article reviews and presentations	Yes	10%	Multiple Weeks	1, 2, 3, 4, 5, 6, 7

ASSESSMENT DESCRIPTION

Assignment 5, The Consultants` Report consists of a critical analysis of a service technology for a client and a recommendation to that client based on their needs. Assignments 2, 3, and 4 are preliminary steps to creating the final report.

Teams also critically review THREE articles, present their review of ONE of them and lead class discussion in Weeks 4, 6, and 9

In-class tests: closed book

Note: The School's 40% barrier rule (cf. Grading criteria), will be applied to the combination of the two in-class exams So in order to Pass this subject, you need to achieve at least 40% of both in-class tests together.

ASSESSMENT FEEDBACK

Detailed written feedback according to the marking criteria specified for the assignments

ASSESSMENT GRADING

Final grades in this unit are awarded at levels of HD for High Distinction, DI (previously D) for Distinction, CR for Credit, PS (previously P) for Pass and FA (previously F) for Fail as defined by University of Sydney Assessment Policy. Details of the Assessment Policy are available on the Policies website at http://sydney.edu.au/policies . Standards for grades in individual assessment tasks and the summative method for obtaining a final mark in the unit will be set out in a marking guide supplied by the unit coordinator.

It is a policy of the School of Information Technologies that in order to pass this unit, a student must achieve at least 40% in the written examination. For subjects without a final exam, the 40% minimum requirement applies to the corresponding major assessment component specified by the lecturer. A student must also achieve an overall final mark of 50 or more. Any student not meeting these requirements may be given a maximum final mark of no more than 45 regardless of their average.

The School's 40% barrier rule will be applied to the combination of the two in-class tests. This means that to Pass this course, you need to achieve at least 40% of both in-class tests together.

4. ATTRIBUTES DEVELOPED

Attributes listed here represent the course goals designated for this unit. The list below describes how these attributes are developed through practice in the unit. See Learning Outcomes and Assessment sections above for details of how these attributes are assessed.

Attribute	Method
Engineering/IT Specialisation (Level 4)	Know the current issues, tools and techniques in the SSME area and assess their implications for particular situations
Information Seeking (Level 4)	Locate and critically analyse evidence-based material relevant to SSME
Communication (Level 4)	Persuasively communicate your evidence-based analysis of complex material in written and oral forms as appropriate for diverse audiences, and conduct group discussion.
Professional Conduct (Level 4)	Discuss and negotiate appropriately within different business and technical areas.
Project and Team Skills (Level 4)	Form and manage a team to review, publish and present articles weekly.

For further details of course goals and professional attribute standards, see the online version of this outline at
http://cusp.eng.usyd.edu.au/students/view-unit-page/alpha/INFO5991 .

5. STUDY COMMITMENT

Lecture: Presentation by SIT staff and live case studies with industry guests on the week`s topic

Seminar: Students present and discuss their article reviews in groups, give each other feedback and reflect on their processes

Activity	Hours per Week	Sessions per Week	Weeks per Semester
Independent Study	6.00	1	13
Lecture	1.00	1	13
Seminar	2.00	1	13

Standard unit of study workload at this university should be from 1.5 to 2 hours per credit point which means 9-12 hours for a normal 6 credit

point unit of study. For units that are based on research or practical experience, hours may vary. For lecture and tutorial timetable, see University timetable site at: web.timetable.usyd.edu.au/calendar.jsp

6. TEACHING STAFF AND CONTACT DETAILS

COORDINATOR(S)

Name	Room	Phone	Email	Contact note
Professor Davis, Joseph		612-93514291	joseph.davis@sydney.edu.au	
Dr Stern, Andrea		612 90369108	andrea.stern@sydney.edu.au	Room 443 SIT (J12)

LECTURERS

Name	Room	Phone	Email	Contact note
Dr Stern, Andrea		612 90369108	andrea.stern@sydney.edu.au	Room 443 SIT (J12)

TUTORS

Shilpa Shetty

Varanasi Srinivas

7. RESOURCES

COURSE WEBSITE(S)

University of Sydney Learning Management System

NOTE ON RESOURCES

There is no textbook for this unit. The texts are the journal articles specified for weekly reading and review and are available through the Library Reserve service

8. ENROLMENT REQUIREMENTS

ASSUMED KNOWLEDGE

INFO5990. Students are expected to have a degree in computer science, engineering, information technology, information systems or business.

PREREQUISITES

None.

9. POLICIES

ACADEMIC HONESTY

While the University is aware that the vast majority of students and staff act ethically and honestly, it is opposed to and will not tolerate academic dishonesty or plagiarism and will treat all allegations of dishonesty seriously.

All students are expected to be familiar and act in compliance with the relevant University policies, procedures and codes, which include:

– *Academic Honesty in Coursework Policy 2015*

– *Academic Honesty Procedures 2016*

– *Code of Conduct for Students*

– *Research Code of Conduct 2013* (for honours and postgraduate dissertation units)

They can be accessed via the University"s Policy Register: http://sydney.edu.au/policies (enter "Academic Honesty" in the search field).

Students should never use document-sharing sites and should be extremely wary of using online "tutor" services. Further information on academic honesty and the resources available to all students can be found on the Academic Integrity page of the University website: http://sydney.edu.au/elearning/student/EI/index.shtml

Academic Dishonesty and Plagiarism

Academic dishonesty involves seeking unfair academic advantage or helping another student to do so.

You may be found to have engaged in academic dishonesty if you:

– Resubmit (or "recycle") work that you have already submitted for assessment in the same unit or in a different unit or previous attempt;

– Use assignment answers hosted on the internet, including those uploaded to document sharing websites by other students.

– Have someone else complete part or all of an assignment for you, or do this for another student.

– Except for legitimate group work purposes, providing assignment questions and answers to other students directly or through social media platforms

or document ("notes") sharing websites, including essays and written reports.

- Engage in examination misconduct, including using cheat notes or unapproved electronic devices (e.g., smartphones), copying from other students, discussing an exam with another person while it is in progress, or removing confidential examination papers from the examination venue.

- Engage in dishonest plagiarism.

Plagiarism means presenting another person's work as if it is your own without properly or adequately referencing the original source of the work.

Plagiarism is using someone else's ideas, words, formulas, methods, evidence, programming code, images, artworks, or musical creations without proper acknowledgement. If you use someone's actual words you must use quotation marks as well as an appropriate reference. If you use someone's ideas, formulas, methods, evidence, tables or images you must use a reference. You must not present someone's artistic work, musical creation, programming code or any other form of intellectual property as your own. If referring to any of these, you must always present them as the work of their creator and reference in an appropriate way.

Plagiarism is always unacceptable, regardless of whether it is done intentionally or not. It is considered dishonest if done knowingly, with intent to deceive or if a reasonable person can see that the assignment contains more work copied from other sources than the student's original work. The University understands that not all plagiarism is dishonest and provides students with opportunities to improve their academic writing, including their understanding of scholarly citation and referencing practices.

USE OF SIMILARITY DETECTION SOFTWARE

All written assignments submitted in this unit of study will be submitted to the similarity detecting software program known as **Turnitin**. Turnitin searches for matches between text in your written assessment task and text sourced from the Internet, published works and assignments that have previously been submitted to Turnitin for analysis.

There will always be some degree of text-matching when using Turnitin. Text-matching may occur in use of direct quotations, technical terms and phrases, or the listing of bibliographic material. This does not mean you will automatically be accused of academic dishonesty or plagiarism, although Turnitin reports may be used as evidence in academic dishonesty and plagiarism decision-making processes.

Computer programming assignments may also be checked by specialist code similarity detection software. The Faculty of Engineering & IT currently uses the MOSS similarity detection engine (see http://theory.stanford.edu/~aiken/moss/) . These programs work in a similar way to TII in that they check for similarity against a database of previously submitted assignments and code available on the internet, but they have added functionality to detect cases of similarity of holistic code structure in cases such as global search and replace of variable names, reordering of lines, changing of comment lines, and the use of white space.

IMPORTANT: School policy relating to Academic Dishonesty and Plagiarism.

In assessing a piece of submitted work, the School of IT may reproduce it entirely, may provide a copy to another member of faculty, and/or to an external plagiarism checking service or in-house computer program and may also maintain a copy of the assignment for future checking purposes and/or allow an external service to do so.

Other policies

See the policies page of the faculty website at http://sydney.edu.au/engineering/student-policies/ for information regarding university policies and local provisions and procedures within the Faculty of Engineering and Information Technologies.

10. WEEKLY SCHEDULE

Note that the "Weeks" referred to in this Schedule are those of the official university semester calendar
https://web.timetable.usyd.edu.au/calendar.jsp

Week	Topics/Activities
Week 1	Lecture/Tutorial: Services, the service economy and the importance of IT for services
Week 2	Lecture/Tutorial: Finding Evidence; IT in service productivity and innovation
Week 3	Lecture/Tutorial: Designing services
	Assessment Due: Ass.1 Group profile and capability summary
Week 4	Lecture/Tutorial: New models of business: specialisation and XaaS
	Assessment Due: Group article review and presentation
Week 5	Lecture/Tutorial: Service-oriented Enterprise and IT architecture
	Assessment Due: Ass.2 Constructing a synthesis grid
Week 6	Assessment Due: Group article review and presentation
	Lecture/Tutorial: External sourcing of IT services
Week 7	Assessment Due: Ass.3 Summary and draft recommendation
Week 8	Lecture/Tutorial: IT governance: delivering strategic value from IT services
	Assessment Due: Group article review and presentation
	Assessment Due: In class mid-semester test
Week 9	Lecture/Tutorial: Providing external IT-centric services in the cloud
Week 10	Lecture/Tutorial: Service Level Agreements, Managing the IT services lifecycle, and DevOps
Week 11	Lecture/Tutorial: Services innovation at Cisco
Week 12	Assessment Due: Ass.4 Presentation of recommendations to client
Week 13	Assessment Due: In class end-of-semester test
Exam Period	Assessment Due: Ass.5 Consultants` Report