The University of Sydney

School of Information Technologies

Unit of Study INFO5990

Professional Practice in IT

6 Credit Points

Course Outline & Assessment Details

Semester 2, 2016

Course Outline Table of Contents

INFO5990 Professional Practice in IT

Unit of Study Outline

1. Introduction

This Unit of Study introduces the students to some of the concepts, standards and techniques associated with the current professional practice in information technology in the business environment.

Students will encounter a range of concepts, techniques and professional issues including interpersonal and organisational communication, human resources and conflict resolution, globalisation, professional ethics, social impacts of IT, data security, data quality assurance, system audit and project management concepts and tools. Practical and real world case studies will be used as part of the learning to enhance the in-class teachings to the needs of industry.

2. Learning outcomes

By the end of this course, students should develop the following skills:

Communication

1. Have developed awareness and skills relating to written and oral communication vital for professional IT practioners.

Professional Conduct & Teamwork

2. Be aware of wider issues and problems concerning professional practice in IT.
3. Be aware of the impact of information technology in our globalised world.
4. Be aware of and have gained skills in aspects of professional practice including conflict resolution, contract negotiation, team formation, leadership and team dynamics.
5. Appreciate issues relating to ethics and professional responsibility in the IT profession and be able to resolve hypothetical ethical dilemmas.
6. Understand aspects of intellectual property and its protection.
7. Be able to discuss current trends in human resource management in the IT industry.
8. Appreciate issues concerning software testing, data security, data quality, quality assurance, system audit and the value of information for decision support systems.
9. Gain an understanding of the use of IT in different industries

Project Management

10. Have developed understanding and skills relating to tools and techniques used in project management.

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/INFO5990.

3. Class and tutorial locations

Lectures:

- Week 1-13 :

Tutorials:

- Weeks 2-13: PRACS –

4. Assessment Package

Assessment component	Weight	Due Date	Outcomes Assessed
Individual Quiz 1	10%	Week 4	1-6
Individual Quiz 2	10%	Week 13	1-6
Individual Oral presentation	5%	Week 7 - 9	1-6
Group Assignment	20%	Week 10	1-10
Group Oral presentation	5%	Weeks 11 - 12	1-10
Final Exam	50%	Exam Period	1-12

Although teamwork is encouraged during this course, all assessment tasks, except the project proposal / assignment 2 the group exercises are to be carried out individually (see later section on Academic Honesty). For Assignment 1 Students must include a title page and declaration that the work is their own work and neither plagiarised nor the work of others. Assignment 2 is submitted electronically, but a Team Compliance declaration must be handed in separately.

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 retain a copy of the assignment for future checking purposes and/or allow an external service to do so.

See University Policy relating to Academic Honesty and Plagiarism in Section 10 below.

5. Attributes developed

Attribute Development Method	Attribute Developed
Students will be able to learn about IT Project Management, Information Quality, Information Quality Assurance and Information Audit.	Engineering/IT Specialisation (Level 2)
In Assignment 1 students will explore an issue relating to professional practice in IT to produce a piece of writing of professional standard.	Information Seeking (Level 4)
Lectures will be delivered with the intention of eliciting discussion and debate of crucial issues. During tutorial students will work in teams to tackle hypothetical problems relating to professional practice in IT. They will communicate their findings to colleagues.	Communication (Level 4)
In Assignment 2 students will practice skills learned during the course. They should be conscious of issues such as team formation, conflict management, negotiation skills, project management and communication skills which are widely recognised as desirable for professionals in IT.	Professional Conduct & Teamwork (Level 4)

6. Commitment

Students are expected to attend all lectures (2 hours per week), all tutorials (1 hour per week) and to undertake up to 9-10 hours of individual reading, practice and study (1.5 to 2 hours per credit point).

7. Details of Assessment Components

7.1 Quiz 1: multiple choice from topics based on week 1-Week 4 – 10%

Due week 4 – see schedule below and LMS / CLASS LECTURE FOR UPDATES

Selection of multiple choice and true/false questions to be completed in 1 hour – up to 50 questions will test students' knowledge of topics discussed in weeks 1-4 in class

7.2 Quiz 2: multiple choice from topics based on week 4 -Week 13– 10%

Due week 13 – see schedule below and LMS / CLASS LECTURE FOR UPDATES

Selection of multiple choice and true/false questions to be completed in 1 hour – up to 50 questions will test students' knowledge of topics discussed in weeks 1-12 in class

7.2.1. Oral Presentation – IT Entrepreneur you admire

The purpose of this exercise is to give students the experience of giving an oral presentation. The aim of your presentation will be to communicate some information to a group of your peers. The substance of the presentation will be to discuss in 2 minutes an entrepernuer you admire and outline why.

General instructions

This oral presentation contributes 5% towards your final grade.

Duration: ***2 minutes (STRICTLY MANAGED)***

Period: You can present within the weeks for oral presentations as per "Alphabetical Order of Surname in tutorials". Swapping of times is not generally permitted.

Aim to make your presentation entertaining and informative, highlighting those aspects which you believe will be of particular interest to your audience. Since this is strictly an *oral* presentation, it should be specifically designed with this in mind.

You should practice your presentation in order to achieve the professional standard expected. Try it out on friends or family.

When 1.30 minutes have elapsed the tutor will display a "***30 second to Go***" warning. You should be aware of this and acknowledge it.

Sample points to include in your "IT entrepreneur you admire" presentation

The following headings provide a rough outline for the presentation together with a suggested timing for each segment.

- **Purpose** [30 seconds]

  State your name and the purpose of the talk about your entreprenuer - engage your listeners who should be able to assess how well, or otherwise you have conveyed the message.

- **Key information** [1 minute]

  This should be the major part of your presentation. Why is the entreprenuer / IT Solution important, what impact has it had on society, why you chose it, etc

- **Summary** [30seconds]

  Here give a brief summary of you findings, contributions or recommendations. This should help your listeners to appreciate fully the worth of the information that you have communicated. It should reiterate briefly the IT entreprenuer, the solution created and objectives.

Assessment

Your presentation will be assessed on how well you are able to convey information and how well you are able to make use of presentation software.

High marks will be awarded only where the presentation is clear and effectively delivered and pitched at an level appropriate for your peers. Good voice production, appropriate structure for the talk, good timing. Time overruns will not be permitted, and you will be required to stop after 2minutes.

7.3 Assignment Two: Group Project and Oral presentation

The group project contributes 25% towards your final grade. Only one copy of the Assignment is to be submitted per team. Normally all members of the team will score the same mark.

Scenario : You have been asked by the Chief Technology office of your company to conduct a review and recommendation of one of the following emerging Information Technologies on how it can be used in the business. Groups to select the following business scenario's and how it would be used in their respective businesses.

- **Semantic web**
- **Biometric technologies**
- **Advanced analytics**
- **3d-printing**
- **Wearable technologies**
- **Mobile cloud**
- **Big data analytics**
- **Internet of Things**
- **Speech to speech translations**
- **Mobile health monitoring**
- **Gesture technology**
- **Telematics**
- **Human augmentation**
- **Gamification**
- **Digitisation technologies**

The project report details:

Length: Maximum *2500 words* ± *10%* (that is 7-9 pages)

Reports above this word count attract loss of marks of 10% for every 100 above allowed limit

Stricktly No more than 3 Appendix allowed – loss of marks of 10% for every additonal appendix

Appendix and executive summary exclusive of word count.

Submission via Blackboard/LMS as per due date to be advised.

Submission on Blackboard and named as "Teamname_assignment2.doc"

There are two elements of this exercise:

1. The group project report – total 20%
2. Group oral presentation – 5 %

Teams of up to 5-6 students MAXIMUM will form a project team during week 2.

This is a formal report and all Formal report procedures and format is to be followed as advised above.

The assignment will be based on a real world IT project as above or from the student's that brings to light the fundamentals of the course. The report will be similar to what an IT investment proposal/review would normally be in a typically corporation which includes the following aspects:

1. Project executive summary
2. Current project audit / performance review / replacement
3. Project justification - business/operational/revenue/user benefits/stakeholders benefits etc.
4. Project costing / budgeting for tasks to be carried out / in-house resource and outsourced resources, etc.
5. Project Plan (including resources, timeline, work breakdown structure) using MS Project, etc.
6. Appropriate "Research Methods" used in the findings would be required
7. Recommendations

Assessment

See Marking guide

7.3.1. Oral Presentation

The final group oral presentations will constitute a grade of 5% towards the final mark. The team will present to class during weeks 11 and 12 in their respective tutorials. Powerpoint slides are encouraged to be used. This will be a summary of your project proposal.

A total of 10 minutes maximum is allowed, at 8 minutes you will be given a gesture to conclude your presentation. Followed by 5/10 minutes of short questions either from the tutor or the class (assume this to be your senior management team/investor who will approve or disaprove your investment proposal).

This is a formal presentation to the executive of your organisation to fund your project. So you will need to develop a proposal that they will fund which highlights business benefits, outcomes, financial aspects, and resource/timelines.

All members of the team are to present and business attire is mandatory.

7.4 Final Examination

Duration 2 hours with 10 minutes reading time.

The final exam will be held during the official exam period, probably on the same usual night of the week. The examination will be CLOSED BOOK.

Simple hand held calculators will be permitted.

8. Supplementary Materials

In a course such as INFO5990 students come with a wide diversity of skills and experience. In recognition of this, a selection of supplementary materials is available on the course website and Blackboard based on the week for those students who need them. Materials include supplementary readings, theoretical exercises, and practical exercises.

You are encouraged to explore these materials and make use of those that are appropriate. You will find it convenient to use your School of Information Technologies login and server space.

9. School of Information Technologies Login

As a student in the School of Information Technologies you will be assigned a login and server space. This will enable you to login to computers in each of the computer laboratories on Level 1 in the School of Technologies Building (J12). Your SIT login usually has the same as your official Unikey.

Students are often confused by the fact that their School of IT login takes the same form as their Unikey, but it provides quite different access and may, if you choose, have a different password. The password for your SIT account is set initially to your student Id. You can change either password as you choose.

When using labs in the School of IT your need to use your SIT login.

1. Login using your SIT identifier.

   Open *Windows Explorer* (*Microsoft Flag* + E, or the icon on the tool bar bottom left) and note the contents of your School of Information Technologies home directory. We will refer in future to this location as your U: drive. It can only be accessed within the School of IT.

2. You will find it helpful to keep your work for this course separate from other units, and to organise each week's work in suitably named folders.

   Create a new folder (directory) on your U: drive called *INFO5990*. Add to it three subfolders named *Week01*, *Week02* and *Week03* respectively. During this course always store your work in an appropriate folder. Create further folders as required, such as *Week04*, *Week05* etc. as required.

3. Again use Windows Explorer (Flag + E) to view the contents of your U: drive.

10. University Policy on Academic Honesty and Plagiarism

The Faculty of Engineering and Information Technologies views all forms of academic dishonesty, including plagiarism and recycling, very seriously. The University wide policy on academic honesty is set out below.[1]

Plagiarism means presenting another person's ideas, findings or work as one's own by copying or reproducing them without due acknowledgement of the source.

Recycling means the submission for assessment of one's own work, or of work which is substantially the same, which has previously been counted towards the satisfactory completion of another unit of study, and credited towards a university degree, and where the examiner has not been informed that the student has already received credit for that work.

Students who submit work containing significant portions that have been copied from other sources, including published works, the internet, existing programs, work previously submitted for other awards or assessments, or the work of other students, without proper acknowledgement will be penalised. Decisions as to the penalty may include:

- counselling the student;
- issuing a written warning;
- requiring the student to resubmit the work for assessment; or to undertake other remedial work;
- requiring the student to undertake another form of assessment in lieu of the assignment in question, such as an unseen examination;
- applying a fail grade to the work, or part thereof, submitted for assessment;
- applying a fail grade overall in the unit of study; or
- referring the matter to the Registrar if the head of school considers there has been a breach of the University's standards of academic honesty and the student continues in a denial, or, following the interview, the head of school considers that failing the unit of study is insufficient to deal with the matter.

Where there is doubt about which portions of work are contributed by a particular student he/she may be required to demonstrate knowledge of the relevant material by answering oral questions or by undertaking supplementary work, either written or in the laboratory, in order to arrive at the final assessment mark.

[1] Refer to University policy Academic Honesty in Coursework (plagiarism): http://sydney.edu.au/library/elearning/learn/plagiarism/index.php

11. Lecture, Reading and Assessment Schedule

Week	Topic	Lecture A	Lecture B	Tutorial Exercises / Reading / Assessment
1 **26/7**	Course Objectives. Managing team work: the challenge of leadership	Course overview: objectives, requirements, expectations, assessment and facilities. Tutor introductions. Lecture and tutorial formats.	The nature of leadership, teams and team work, guidelines for effective team work in IT	Make contact your team members Readings: *Working in a Team*, and *Team Development*
2 2/8	Managing Human Resources in IT, and Change Management	Sourcing, managing and nurturing human resources in the IT industry	Managing the Human Resource in IT	Team meeting. Reading: *Computer-related injuries* and *Managing the Human Resource in IT / Case readings* **Other readings as posted on Blackboard** **FORM TEAMS FOR ASSIGNMENT 2**
3 9/8	Information system audit and quality assurance	Aspects of Information system audit and quality assurance	Quality assurance concepts and techniques	Reading: *The price of stupidity* and *Information System Audit and Quality Assurance* **Other readings as posted on Blackboard**
4 **16/8**	Written and Oral Communication in the IT profession	Written communication: effective writing - writing persuasively	Oral communication: oral presentations – speaking convincingly. Importance for IT Professionals	Reading: *The Art of Good Writing/ Case readings* Supplement: Clear As Mud **Other readings as posted on Blackboard** **Quiz 1 – Assignment Due 15/8//16) 11pm**
5 **23/8**	Research Methods	Sourcing primary and secondary data. Appropriate method for selecting target sources.	Analyse data using different methods of interpretation and use in business of key data	Reading: *Oral Presentations*, Supplement: **Other readings as posted on Blackboard**
6 30/8	Introduction to Project Management in IT	IT project management process / Risk Management	The PMBOK and the project management literature	Reading: *Achieving a realistic project schedule Case readings* **Other readings as posted on Blackboard**
7 **6/9**	Project Estimation / MS Project / Scheduling	Project estimation: techniques and tools / Problems of managing IT projects.	Project management tools: an introduction to *MS Project*. Successful and Unsuccessful project proposals, examples	Reading: *Project Management Tools & Techniques / Case readings* **Other readings as posted on Blackboard** **Individual Oral Presentations (1)**

Week	Topic	Lecture A	Lecture B	Tutorial Exercises / Reading / Assessment
8 13/9	Managing Software Testing	Software testing - how much is enough? Designing test cases and test suites.	System testing, the V-model. Software usability and the user interface.	Reading: *Case readings* Supplement: Software testing Exercises **Individual Oral Presentations (2)** **Other readings as posted on Blackboard**
9 **20/9**	Managing, protecting and systems integration	Managing testing in large scale software systems	Security issues in IT: data security, computer vandalism, viruses, spam, hacking	Reading: *The Real Cost of a Virus Outbreak / Case readings* **Individual Oral Presentations (3)** **Other readings as posted on Blackboard**
26Sept – 30 Sept	**Mid-Semester Break**			
10 **4/10**	Ethics, ethical behaviour and professional responsibility	Ethics: frameworks for ethical behaviour	The role of professional bodies: the Australian Computer Society	Reading: *Case readings* Supplement: Ethics Exercises Finalise group projects **Other readings as posted on Blackboard** **Group Oral due : 2/10/16 at 11pm** **Assignment 2 Due: 3/10/16 11pm**
11 11/10	Ethics and the IT Profession	Ethical dilemmas in IT and Engineering	Intellectual Property and its protection. Copyright and plagiarism.	Reading: *Case readings* **Other readings as posted on Blackboard** **In tutorial group Oral Presentations (1)**
12 **18/10**	Tools and techniques for decision making	Providing quality decision support in your organisation	Effective models for decision making	Reading: Decision support Systems **Other readings as posted on Blackboard** **In tutorial group Oral Presentations (2)**
13 **25/10**	Course Review	Looking back over the key issues for Professionals in IT	Preparing for the final examination	Revision Sample Examination Paper discussed **Quiz 2 – Assignment Due (24/1016) 11pm**

12. Additional Readings / Tutorial discussions

Various peer reviewed articles have been chosen to assist in the learning process and to use during tutorials.

As part of the course learning – you need to locate / source each of these articles using the University Library or Electronic search options such as EBSCO, etc

Week	Article
2	• Thomas & Fernandez (2008) Success in IT projects: A matter of definition? • Whittakar (1999) What went wrong? Unsuccessful information technology projects
3	• Randa (2010) Using IT to drive operational efficiency in the Operating Room • Gunasekaran et. al. (2001) A model for investment justification in information technology projects
4	• Eftekharmanavi (2011) Investigating the role of supply chain in electronic commerce • Jovancevic & Cogoljevic (2013) Retail enterprise resource planning system
5	• Yin (various) Case study reasearch • Wateridge (1995) IT projects: a basis for success
6	• Dvir et.al. (2003) An empirical analysis of the relationship between project planning and project success • Nuaman et. al. (2005) Information systems development failure: A case study
7	• Khan, M (2010) Different Forms of testing techniques for finding errors. • Cook-Davies (2002) The real success factors on projects
8	• Slewe & Hoogenboom (2004) Who will rob you on the digital highway • Singh (2009) The security of data export to India
9	• Computer Weekly (2013) Aviation firms invest in datacentre rather than taking to the cloud • Dean (2011) Data centers: where clouds connect
10	• Chaudhuri et. al. (2011) An overview of business intelligence • Carmody (2013) A knowledge economy or an information society in Africa: the integration and the mobile phone revolution
11	• Omar et. al. (2011) Information technology disaster recovery plan: case study • Apulu (2011) An evaluation of the impact of information and communication technologies: two case studies examples
12	• Sherer (2011) Do cultural differences matter in IT implementation? • Reyck et. al. (2005) The impact of project portfolio management on information technology projects

13. Marking Guide Assignment Oral – "IT Entrepreneur you Admire"

Oral Presentation Assessment total marks 5%

	Poor	Satisfactory	Good	Very Good	Excellent	Weigh	Score
Background of entrepreneur / IT solution / Problem being solved						1	
Impact of this IT solution and why student liked it, e.g. impact to business/society, etc						1	
Presentation of entrepreneur						1	
Concluding remarks, ie next steps, future of this IT Solution.						1	
Ability to answer questions						1	

14. Marking Guide Assignment 2 – Group Proposal

Written report Assessment total marks 20%

Strictly Max 2500 words (Incl Intro/Conclusion) Report Format	**Poor (0.2)**	**Satisfactory (0.4)**	**Good (0.6)**	**Very Good (0.8)**	**Excellent (1.0)**	**Weight**	**MARK**
Background to the solution / scene setting						2	
Audit of existing system/solution: • Tasks performed • Customer perception • Operational aspects • Challenges • etc						4	
Feasibility of the ne proposed product/service showing how the solution your group has devised will work and improve on the current solution. Aspects to consider are : • Market size • Source of new product revenue • Marketing strategy • Budget: Costs and estimated return including breakeven and sensitivity analysis • Effect of new product/service on core business • Managing risk associated with the new product/service						8	
Implementation strategy including barriers / Risks / Timeline / Milestones						2	
Structure of Plan / Writing style, grammar and references (in text citation and bibliography)						4	
TOTAL							
TOTAL %							

Comments:

INFO 5990: Assignment 2 Presentation marking guide

10 minutes + Q&A 5 Marks	**Poor (0.2)**	**Satisfactory (.04)**	**Good (0.6)**	**Very Good (0.8)**	**Excellent (1.0)**	**Weight**	**Score**
Overview of the project and outline of proposal, business background						1	
Details of the proposal, as in the proposal report						1	
Why is this solutions required, compelling argument						1	
Timeline / resources / critical elements of project						1	
Next steps / conclusion / your demand to the investment committee						1	
Total							