LEVEL 5

PROFESSIONAL ISSUES IN IT

Student Guide

Modification History

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Published by: NCC Education Limited, The Towers, Towers Business Park, Wilmslow Road, Didsbury, Manchester M20 2EZ, UK.

Tel: +44 (0) 161 438 6200 Fax: +44 (0) 161 438 6240 Email: info@nccedu.com
http://www.nccedu.com

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1. Module Overview and Objectives

The purpose of this unit is to equip you with knowledge and skills in the professional issues that impact on the development, deployment, maintenance and use of computer systems. The aims of the unit are to provide you with:

- a working knowledge of the social, ethical and legal issues applicable to the IT field;
- the ability to construct, follow and adapt project plans for software development and maintenance;
- a working knowledge of software quality.

2. Learning Outcomes and Assessment Criteria

Learning Outcomes; The Learner will:	**Assessment Criteria;** The Learner can:
1. Understand the social, ethical and professional issues essential to the IT profession	1.1 Identify and explain common legal, social and professional standards issues applicable to a professional working in the IT industry 1.2 Appraise the ethical aspects of various scenarios in the development, deployment and use of IT systems 1.3 Explain the social, legal and professional standards issues in the context of various scenarios in the development, deployment and use of IT systems
2. Understand a project management life cycle and associated techniques	2.1 Explain the project management lifecycle in the context of an IT project 2.2 Identify the key phases of the project management lifecycle in relation to a given scenario 2.3 Develop project management strategies for specified software development and maintenance projects
3. Understand how to deploy a software application	3.1 Explain the need for structured and planned deployment of a software application 3.2 Analyse the potential risks and problems of deploying a software application in a given scenario 3.3 Specify a software deployment process for a given scenario
4. Understand risks and the management of them in software projects	4.1 Explain the need for detailed risk analysis in a software engineering context 4.2 Explain risk management techniques 4.3 Analyse risks and risk management strategies in the context of an IT project

5. Understand the principles and techniques of IT service management	5.1 Analyse an IT service case study in respect to management requirements 5.2 Analyse objectives in an IT service case study 5.3 Apply management techniques to a problem situation in order to achieve objectives
6. Be able to design software quality policies and procedures	6.1 Define and explain the concept of software quality 6.2 Explain the use of metrics for software quality management and apply these to a given scenario 6.3 Evaluate the requirements for software quality policies and procedures in a problem context 6.4 Design software quality policies and procedures and apply these to a given scenario

3. Syllabus

Syllabus			
Topic No	Title	Proportion	Content
1	Understanding IT Standards and Issues	1/12 2 hours of lectures 1 hour of seminars 2 hours of tutorials	• Introduction to the module • Ethics – What are ethics and why are they relevant? • Social, legal and professional issues in IT and their potential impact • Why understanding standards and issues is so important ***Learning Outcome: 1***
2	Applying IT Standards and Issues	1/12 1 hour of lectures 2 hours of seminars 2 hours of tutorials	• Applying social, ethical, legal and professional standards and issues to the IT profession and projects • Analysing the effects of such issues and standards on the IT industry ***Learning Outcome: 1***
3	IT Project Management	1/12 2 hours of lectures 1 hour of seminars 2 hours of tutorials	• What is IT project management and why is it necessary? • Identifying and understanding project management lifecycles and phases • Understanding project management strategies ***Learning Outcome: 2***

4	Applied IT Project Management	1/12 1 hour of lectures 2 hours of seminars 2 hours of tutorials	• Identifying and applying project management lifecycle phases and strategies to IT projects • Analysing, evaluating, concluding and reporting findings ***Learning Outcome: 2***
5	Software Application Deployment	1/12 2 hours of lectures 1 hour of seminars 2 hours of tutorials	• What is software application deployment? • Its place within an IT project's lifecycle • How to identify potential issues • Software application deployment standards ***Learning Outcome: 3***
6	Applying Software Application Deployment to Projects	1/12 1 hour of lectures 2 hours of seminars 2 hours of tutorials	• Identifying deployment risks and issues • Creating a software deployment procedure for an IT project • Explanation of software deployment procedure ***Learning Outcome: 3***
7	IT Risk Management	1/12 2 hours of lectures 1 hour of seminars 2 hours of tutorials	• What is risk? • Risk management and the techniques employed • Risk identification and analysis in IT projects • The consequences of not planning for risk • Reactive vs. proactive ***Learning Outcome: 4***
8	Applying, Evaluating and Managing Risk Analysis	1/12 1 hour of lectures 2 hours of seminars 2 hours of tutorials	• Applying risk analysis and risk management to an IT project • Evaluating findings • Reporting results ***Learning Outcome: 4***

9	IT Service Management (ITSM)	1/12 2 hours of lectures 1 hour of seminars 2 hours of tutorials	• What is IT service management? • Where is ITSM focused? • Why is ITSM important? • ITSM International Standards ***Learning Outcome: 5***
10	Analysing and Applying IT Service Management	1/12 1 hour of lectures 2 hours of seminars 2 hours of tutorials	• Analysing and applying IT service management • Evaluation of ITSM – advantages and disadvantages ***Learning Outcome: 5***
11	Software Quality Policies and Procedures	1/12 2 hours of lectures 1 hour of seminars 2 hours of tutorials	• Understanding quality within IT • What are quality procedures and policies? • Why software quality procedures are important • Measuring quality • Theory of applying quality procedures to IT projects • External standards ***Learning Outcome: 6***
12	Applying Software Quality and Module Review	1/12 1 hour of lectures 2 hours of seminars 2 hours of tutorials	• Writing a software quality policy • Applying software quality procedures • Revision of module content • Assessment Clinic ***Learning Outcome: 6***

4. Teaching and Learning

Suggested Learning Hours					
Lecture:	**Tutorial:**	**Seminar:**	**Laboratory:**	**Private Study:**	**Total:**
18	24	18	-	90	150

The teacher-led time for this module is comprised of lectures, tutorials and seminars. The breakdown of the hours is given at the start of each topic. You will need to bring this student guide to all classes for this module.

4.1 Lectures

Your lecturer will be presenting the basic knowledge and the theoretical concepts required for the unit during this time. He/she will use PowerPoint slides during the lecture time and you will be expected to take notes.

You will also be encouraged to be active during this time and discuss and/or practice the concepts covered. Lectures will include question and answer elements to promote participation and to allow your lecturer to check whether you understand the concepts they are covering.

4.2 Tutorials

These are designed to deal with the questions arising from the lectures and private study sessions. You should think carefully beforehand about any areas in which you might need additional guidance and support and use this time to discuss these with your teacher.

4.3 Seminars

These sessions provide tasks to involve group work, investigation and independent learning for certain topics. The details of these tasks are provided in this guide.

4.4 Private Study

This Student Guide also contains details of the private study exercises. You are expected to complete these exercises to improve your understanding. Your tutor will set deadlines for the completion of this work and go over the answers with you. The deadlines will usually be before the scheduled tutorials for that topic. Some of the private study tasks may require you to work in a small group so you will need to plan your time carefully and ensure that you can meet with your group members to complete the work required before the deadline.

You should also use this time to revise the content of lectures to ensure understanding and conduct extra reading (using the supplementary textbooks or other materials available in the library or online). You should bring any questions to the tutorial for additional guidance and support.

5. Assessment

This module will be assessed by means of an examination worth 100% of the total mark. This assessment will be based on the assessment criteria given above and you will be expected to demonstrate that you have met the module's learning outcomes.

6. Further Reading List

You will also be expected to undertake further reading to consolidate and extend your knowledge of the topics covered in this module. Your Accredited Partner Centre's library will contain a selection of useful sources of information and you can also make use of materials available online. The list below also provides suggestions of suitable reference books you may like to use:

Bott, F. (2005). *Professional Issues in Information Technology*. British Computer Society.
ISBN-10: 9781902505657
ISBN-13: 978-1902505657

Cadle, J. and Yeates, D. (2007). *Project Management for Information Systems, 5th Edition.* Financial Times/ Pearson Prentice Hall.

ISBN-10: 0132068583
ISBN-13: 978-0132068581

Hughes, B. and Cotterell, M. (2009). *Software Project Management, 5th Edition*. McGraw Hill.
ISBN-10: 0077122798
ISBN-13: 978-0077122799

Quinn, M. (2010). *Ethics for the Information Age: International Version, 4th Edition*. Pearson Education.
ISBN-10: 0132134853
ISBN-13: 978-0132134859

Schwalbe, Kathy. (2009). *Managing Information Technology Projects, 6th Edition*. Course Technology; International Edition.
ISBN-10: 032478855X
ISBN-13: 978-0324788556

Online Resources:

The British Computer Society
http://www.bcs.org

Journal of Information Technology
http://www.palgrave-journals.com/jit/index.html

Project Management Institute
http://www.pmi.org/

Electronic Journal of Information Systems in Developing Countries
http://www.ejisdc.org/ojs2/index.php/ejisdc

Association of Project Management
www.apm.org.uk

Topic 1: Introduction to PIIT/ Understanding IT Standards and Issues

1.1 Learning Objectives

This topic provides an overview of the PIIT module, and the social and legal issues and standards facing an IT professional. On completion of the topic, you will be able to:

- Describe ethics and explain the importance of them;
- Identify other social and legal issues affecting IT professionals in industry;
- Understand the impact that social and legal issues have;
- Generate codes of ethics based on knowledge gained.

1.2 Timings

Lectures:	2 hours
Seminars:	1 hour
Private Study:	7.5 hours
Tutorials:	2 hours

1.3 Seminar Notes

The time allocation for the seminars for this topic is 1 hour.

Activity 1: Discussion of Lecture Material

This class discussion time is an opportunity for you to raise any questions you have that have arisen since the lecture(s).

Activity 2

Scenario

A stock brokering organisation introduced a 'fob' entry code system. (A fob is a type of programmable token that can be worn by employees on a keychain or necklace.) They used this to track the times of employees entering and exiting the premises through a wall mounted swipe machine.

On wishing to enter or exit the organisation and then any department, an employee had to swipe their fob on the scanner. If they had authorised access, they were allowed to enter. All swipes of all fobs recorded the date, time, employee code and whether access was granted or denied. To leave a department also required staff to swipe their fob, once again all data was recorded.

The organisation then also placed fob swipe machines on the bathrooms. To enter the bathroom an employee must swipe their fob and to exit must swipe the fob again. Additionally the organisation then programmed the hours each employee was able to gain entry to departments (and bathrooms) with their contracted hours (e.g. 8am -6pm).

Task

Work in a small group and debate the scenario above based on what you have learnt in the lecture(s) for this topic and your own personal experiences and opinions.

Do you think the organisation acted:

- Ethically?
- Legally?
- With 'reasonable' workforce enforcement?

1.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Read the Codes of Ethics (conduct) of Google and 3D Systems.

- Google: http://investor.google.com/corporate/code-of-conduct.html
- 3D Systems: http://www.3dsystems.com/investors/datafiles/Code_of_Conduct_FINAL_Approved_11_30_06.pdf

What do you think of the codes of ethics produced? Note any points on the codes you particularly agree with/ disagree with and why.

How balanced do you think the codes are between Aims & Constraints (see Lecture Slide 13)?

Exercise 2:

In Section V (a) of Google's Code of Ethics (Conduct), they talk about 'Open Source' and the organisations commitment to it. What is 'Open Source' and how does it affect software?

Exercise 3:

Here are two examples of Codes of Ethics (conduct) produced by International Institutes:

- IEEE (US-based): http://www.ieee.org/about/corporate/governance/p7-8.html
- Council of European Professional Informatics Societies (CEPIS): http://www.cepis.org/index.jsp?p=637&n=741

1. Make notes on any similarities and differences between the two codes.

2. Having read these codes and those in Exercise 1 above, which approach do you favour and why?

Exercise 4:

Consolidate and extend your knowledge on corporate ethics, social & legal Issues and Green IT using any sources available to you. You should consult textbooks in your centre library and make notes on any useful information which you find.

You may find the following website a useful starting point: http://www.bcs.org/category/8620

1.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1: Review of Private Study Exercises

Discuss your findings from the private study exercises as a class. You are expected to contribute your findings and opinions to the class.

Record others' findings alongside your own to build up alternative view points and to give you an alternate viewpoint to your own.

Exercise 2: Producing a Code of Ethics

You are required to write a Code of Ethics (conduct) for a company with which you are familiar. This may be a company you are currently employed by or have previously worked for.

If you do not have work experience, you are required to instead write a Code of Ethics (conduct) for the students of your college/school. The same approach of aims and constraints is fitting for a student code.

Choose whether you will write your code in professional or informal language and what format you would like to take (e.g. Report / letter). There is no minimum length your code must be but it must be a comprehensive guide.

Topic 2: Applying IT Standards and Issues

2.1 Learning Objectives

This topic provides an overview of Professional issues that affect IT professionals in industry.

On completion of the topic, you will be able to:

- Identify professional issues affecting an IT professional;
- Explain own professional insight and reasoning behind it;
- Identify and analyse an international standard and report findings;
- Identify and analyse a National Standards organisation and report findings;
- Identify, analyse and compare Anti-Discrimination regulations and report findings.

2.2 Timings

Lectures:	1 hour
Seminars:	2 hours
Private Study:	7.5 hours
Tutorials:	2 hours

2.3 Seminar Notes

The time allocation for the seminars for this topic is 2 hours.

Activity 1

Read the two definitions taken from the lecture of a professional below:

> "person who has attained an acclaimed level of proficiency…"
>
> "person formally certified by a professional body of belonging to a specific profession…whose competence can usually be measured against an established set of standards"
>
> (Source: www.businessdictionary.com/definition/professional.html)

Now debate the following questions based on what you have learnt in Topic 1 and this topic to date, as well as drawing on your own personal experiences and opinions.

1. Which definition do you think is more appropriate and why?

   Within the IT industry there is no legal governance regarding professionalism and what does or does not constitute a professional. Any individual working in the IT industry therefore can (and usually does) consider themselves an IT professional.

2. Do you think the IT industry should alter its approach to professionalism and align itself with the second definition, or do you believe that the IT industry's current approach is sufficient?

3. Would it make a difference to the perception of those (including you) working in the IT industry if all professionals had to be certified with an industry body?

4. Would you, as an employee in the IT industry, be prepared to pay a yearly registration fee to be listed with an industry body?

5. Would you be willing to have your competence assessed on a regular basis?

6. Do you think that having compulsory registration and measurable competence would redefine the IT industry?

7. How would compulsory registration redefine the industry – enhance or destroy?

Record all main points from the debate including your own and those opinions of others (even if you disagree with them!).

Activity 2

Scenario

You work for a 'blue chip' management consulting company. You have been asked to handle a new account for them in a developing country. You are aware that this account is very important to your organisation, hopefully (if successful) opening up further opportunities in an emergent marketplace. However you have some serious misgivings about the way in which your new client appears to do business. There are many concerns:

- You will be managing a technical project that may result in hundreds of job losses. The company appears to be making no attempt to consider the welfare of these employees.
- The company does not offer any measure of data protection for either its customers or suppliers information.
- The company has little in the way of firewalls or protection against either computer fraud or software viruses.
- While none of these concerns falls directly within the scope of the project you have been asked to lead you feel you need to highlight the problem areas. However you must be careful not to alienate your client and cannot be seen to criticise the way the client does business.

Task

Discuss the ethical dilemmas and make suggestions for a way forward.

2.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

1. Identify an existing International Organisation for Standardization (ISO) IT related standard. A great place to start is the official ISO website www.iso.org.

2. For your chosen standard, identify its ISO code, the year it was launched and its key objectives and attributes plus any further information you think adds value to the standard.

3. Write a one page summary report on your findings.

Note: the ISO website is useful for identifying a standard but it will expect you to pay for further information. Instead use a search engine to search for your standard. There is plenty of information available for free on the internet.

Remember to check out any other sources of information that may be available to you including textbooks.

Exercise 2:

Research the name(s) of National Standards Organisations within your country. These may be organisations that specialise in IT or that are more multidiscipline but that include IT within their remit.

1. You are expected to identify what year the organisation(s) formed, their mission statement and their code of conduct (ethics) if possible.

2. Identify at least one IT related standard and research as to whether this standard is law or benchmark, and how widely adopted in industry this standard is.

3. Write a one page summary report on your findings.

Exercise 3

Research the anti-discrimination regulations that are applicable to the country you reside in and compare these to the anti-discrimination laws currently enforced in the United Kingdom. For those based in the United Kingdom, compare UK laws with another country of your choice.

Write a one page summary report of your findings.

Exercise 4

Use your college's library to find textbooks which cover standards within IT, Health & Safety, and anti-discrimination in the workplace. Read the relevant chapters.

2.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1: Review of Private Study Exercises

You are required to report your findings from the Private Study exercises to the class.

You will have produced three separate one page summary reports on the three topics: ISO standard, National Standard Organisations and anti-discrimination regulations. You are required to report on at least one topic, as directed by your teacher.

Exercise 2

Look again at the Code of Ethics (conduct) that you produced during the Topic 1 Tutorial session. Rework your original code to include the additional knowledge on social, legal and professional issues you have gained during Topic 2.

Topic 3: IT Project Management

3.1 Learning Objectives

This topic provides an overview of Project Management within the context of IT.

On completion of the topic, you will be able to:

- Explain what IT project management is;
- Identify the project management lifecycle, its phases and key stages;
- Understand the project management lifecycle, its phases and key stages.

3.2 Timings

Lectures:	2 hours
Seminars:	1 hour
Private Study:	7.5 hours
Tutorials:	2 hours

3.3 Seminar Notes

The time allocation for the seminars for this topic is 1 hour.

Activity 1

Work in a small group. Select one member to be your team leader. Team leaders will be responsible for providing feedback on your findings.

You have 20 minutes to generate a list of what you think are the 10 most important points of IT project management and to rank these points in order of importance. The table below can be used to record your findings.

Example: IT project management allows organisations to actively manage a project.

Your team leader will then be required to feedback your list to the class, with your rankings. All other groups will be invited to rank your points from 1 to 10 (1 being most important). Record the other groups' opinions in your table.

Top 10 points	Our Team Ranking	Group:_____ Ranking	Group:_____ Ranking	Group:_____ Ranking

	Overall Top 10 Points
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

3.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Make a list of all the skills and abilities you think an IT project manager should have and why. Your list should be as thorough as possible.

Exercise 2:

Why is the Project Initiation phase of the project management lifecycle so important to the success of a project?

Write a short summary of your ideas.

Exercise 3:

Why is estimating in IT project management such a difficult process to get right?

Exercise 4:

Why is it important to close out a project with an official project closure phase, and what documentation would you expect to find in this phase?

Exercise 5:

Use your college library to find a textbook(s) which covers IT-related project management. Read the relevant chapter(s) to build your knowledge base on the topic.

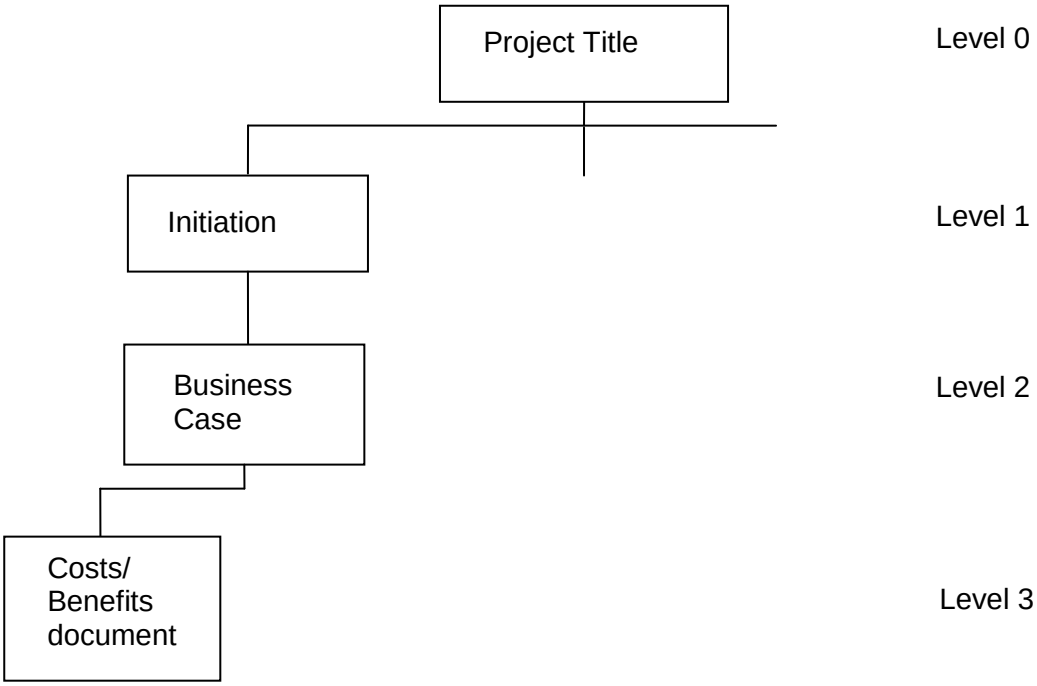
3.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1:

Within a project plan produced in the Planning phase, a project can be broken down into individual activities known as a Work Breakdown Structure (WBS). A WBS can be produced in two different styles: an organisational chart and/or a tabular list. Often organisations use both styles, the chart to identify the activities and then the tabulated list to formalise the process by assigning identification numbers.

a. Working from the project management lifecycle outlined during the lecture, complete the following organisation chart layout:



Level 0 is the top level of the chart. Level 1 will contain all the phases. Level 2 will contain all the identified stages. Level 3 will be a breakdown of all individual activities (or documentation) that make up Level 2.

Exercise 2

Having completed your WBS as an organisational chart, now transfer it to the tabular format. This has been started for you below.

Note that you are now required to identify each activity with an identification code. The layout below is the standard layout - you will see this if you use a project management software programme, e.g. Microsoft Project.

0 Project

1 Initiation Phase

1.1 Business Case

1.1.1 Cost/Benefit analysis

1.1.2

1.2 Project Charter

Suggested Answer:

0 Project

1 Initiation phase

1.1 Business Case

1.1.1 Cost/Benefit Analysis

1.1.2 Solutions document

1.1.3 Opportunity identification document

1.1.4 Project start up document

1.1.5 Recommendation document

1.2 Project Charter

1.3 Draft Project Plan

1.3.1 Project team document

1.3.2 Resource document

1.3.3 Scheduling document

1.3.4 Assumptions list

1.4 Phase Review

1.4.1 Achievements to date report

1.4.2 Issues identification report

1.4.3 Project approval signoff

2 Planning phase

2.1 Project Plan

2.1.1 Baseline monitoring document

2.1.2 Project schedule & milestones

2.1.3 Assumptions

2.1.4 Budget

2.1.5 Resource document

2.2 Resource Plan

2.2.1 Team roles & responsibilities

2.2.2 Equipment identification

2.2.3 Materials requirements

2.3 Financial Plan

Exercise 3

Share your findings from your private study work with the other students in your group. Take notes on any interesting ideas which others suggest.

Topic 4: Applied IT Project Management

4.1 Learning Objectives

This topic provides an overview of the strategic approach to IT project management. On completion of the topic, you will be able to:

- Define strategy and give examples of strategic approaches;
- Discuss observation and four stage pyramid approach;
- Name the techniques and tools available for a strategic approach;
- Explain differences between programs of projects and individual projects;
- Explain the basis of PRINCE2 within strategy.

4.2 Timings

Lectures:	1 hour
Seminars:	2 hours
Private Study:	7.5 hours
Tutorials:	2 hours

4.3 Seminar Notes

The time allocation for the seminars for this topic is 2 hours.

Activity 1

Work in groups of four. Design an appropriate form that an organisation could implement to record potential projects submitted by employees through observation (see Lecture slide 6).

Write or type up your form – you will require it for the tutorial session.

Activity 2

Generate a SWOT analysis for the following scenario; remember that strengths and weaknesses are internal to the project, opportunities and threats are external factors affecting the project:

> *You work for a UK-based IT software company which specialises in quick turnaround projects that take off the shelf software products and rework the code to provide clients with bespoke solutions. Since the company began in 2004 they have always worked in this specialised area of the IT industry and have built a reputation for delivering high quality solutions, fast. By concentrating on what they do best, the company has grown from 3 founders to 18 employees and has a number of high profile clients. In 2009 the company began accepting contracts worldwide.*
>
> *The company has been offered the opportunity by one of their high profile clients to develop a bespoke software product unlike anything that is currently on the market; a project estimated to take 18 months to complete, which means rather than following the company tradition on 'coding up' an existing software product they would have to start from scratch.*

You can use the table below to record your results:

Strengths	**Opportunities**
Weaknesses	**Threats**

4.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Is it important that a project aligns with an organisation's business strategy? Justify this opinion.

Exercise 2:

Write a one page summary report on the advantages and disadvantages of running a project in isolation (rather than within a program of projects).

Exercise 3:

Research the advantages of adopting PRINCE2 as a methodology approach to managing a project through its lifecycle. Write a report summarising your findings.

Exercise 4:

Use your centre's library to find out more about project management strategy. This will widen your knowledge base.

4.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1: Review of Private Study Exercises

Work in a group to share your experiences and findings from the private study exercises.

Exercise 2:

Complete the form you generated in Activity 1 during the seminar session for the organisation scenario you looked at in Activity 2:

> *You work for a UK based IT software company which specialises in quick turnaround projects that take off the shelf software products and rework the code to provide clients with bespoke solutions. Since the company began in 2004 they have always worked in this specialised area of the IT industry and have built a reputation for delivering high quality solutions, fast. By concentrating on what they do best the company has grown from 3 founders to 18 employees and has a number of high profile clients. In 2009 the company began accepting contracts worldwide.*
>
> *The company has been offered the opportunity by one of their high profile clients to develop a bespoke software product unlike anything that is currently on the market, a project estimated to take 18 months to complete, which means rather than following the company tradition on 'coding up' an existing software product they would have to start from scratch.*

Exercise 3:

Here is some further information on the scenario from Exercise 2:

> *The contract being offered to your organisation is worth a potential £1 million. This figure is based on the initial development contract plus additional future rollouts and upgrades which your company would be signed into (locked into) by the initial contract.*

Generate a new SWOT analysis based on your original SWOT (from Activity 2 in the Seminar), including this additional information. Be prepared to rework your original findings based on this new information.

Strengths	**Opportunities**
Weaknesses	**Threats**

Exercise 4:

Based on your SWOT analysis, conclude and make recommendations to your organisation as to whether they should accept or reject their client's project offer.

Topic 5: Software Application Deployment

5.1 Learning Objectives

This topic provides an overview of software deployment within the IT industry. On completion of the topic, you will be able to:

- Define and describe software deployment;
- Identify and explain key stages within software deployment;
- Name ISO standards associated with software deployment;
- Form opinions and communicate those opinions on software deployment.

5.2 Timings

Lectures:	2 hours
Seminars:	1 hour
Private Study:	7.5 hours
Tutorials:	2 hours

5.3 Seminar Notes

The time allocation for the seminars for this topic is 1 hour.

Activity 1

As a class debate the following statement:

'Paper based user manuals still have a place in current software society'.

You lecturer will put you into a group and you should debate for your group's view whether you personally agree or not.

Activity 2

Work in pairs or small groups. Suggest a suitable training method for introducing new Intranet software into a successful recruitment company, with around 100 employees located at a Head Office and 3 regional centres. Most employees use the old software well and training on this has traditionally been quite informal (new staff shown quickly at induction and voluntary options on staff training days) and ongoing (more experienced users helping others when they can or as they are asked).

You should identify the issues which would affect delivering training on the new software in this type of organisation and say why your training method is most suitable. Present your suggestion to the rest of your class.

5.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Locate an example of a software products user manual that is currently in circulation. This can be from a textbook, online or an actual paper copy distributed with some software. Analyse your manual and identify the following:

- What positives can you take from the manual (e.g. its content is organised)?
- What negatives can you identify in your manual (e.g. no troubleshooting section)?
- What would you add or remove from the manual to improve it?
- Are there any other recommendations you would make?

Exercise 2:

Identify the advantages (if there are any) of an online user help approach and make notes to report on your findings.

Exercise 3:

When does a software project become large enough to require a technical manual? Discuss

5.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1: Review of Private Study Exercises

Review your private study work with the rest of your group. If you have any questions or comments that have arisen during private study, please share them.

Exercise 2:

Is social media an acceptable training medium? For example: uploading YouTube videos or online discussion forums/ blogs.

Analyse this statement from both a yes and no perspective. Form your opinion based on your findings and write a short summary detailing your conclusion and explaining your reasons.

Exercise 3:

Basing your answer on a stock broking organisation that is preparing to install a new client records database, what would your ideal training approach include?

Remember that any training approach can be undertaken in isolation or combined together to form a unique standard approach.

Exercise 4:

Based on the previous exercise, what would your minimum training approach recommendation be for the stock broking organisation?

Topic 6: Applying Software Deployment to Projects

6.1 Learning Objectives

This topic provides an overview of applied software deployment. On completion of the topic you will be able to:

- Identify, analyse and discuss IBM's Software Deployment Model;
- Apply and recommend approaches to resolving potential issues.

6.2 Timings

Lectures:	1 hour
Seminars:	2 hours
Private Study:	7.5 hours
Tutorials:	2 hours

6.3 Seminar Notes

The time allocation for the seminars for this topic is 2 hours.

Activity 1:

You work for an international Stock broking organisation that conducts business with the European, Asian and US stock markets, in effect 24 hour business.

Your organisation is planning a new software installation and you have been asked to recommend the installation approach. Prepare a presentation detailing your recommendations to the company.

- Remember to include the following:
- When you would schedule the installation
- Which installation approach you would recommend and why
- Any issues you foresee and suggested solutions

6.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

In order to consolidate your knowledge of software deployment, read IBM Redbook 'The Software Deployment Mystery – Solved'. This is a free, IBM published book available via:

www.redbooks.ibm.com/redbooks/pdfs/sg246070.pdf

Make notes on any additional useful points and any questions you want to ask.

6.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1:

You work for a software development organisation that is responsible for the software upgrade installation within your client's current system. Half way through the installation the process crashes. This is a big bang installation and there is now no old system (having removed it) and no new system (due to its crashing).

What would your recommendations be for resolving this critical situation? Write some notes detailing your assumptions and recommendations, describing what the best and worst outcomes from each recommendation would be. You should be prepared to present your notes to the group and answer any follow up questions about the recommendations you have made.

Topic 7: IT Risk Management

7.1 Learning Objectives

This topic provides an overview of IT risk management and the key stages necessary to be proactive in approach to risk management.

On completion of the topic, you will be able to:

- Define risk and risk management;
- Understand that not taking risk seriously can have significant consequences;
- Name the key stages of IT risk management;
- Describe each stage's purpose;
- State the difference between proactive and reactive approaches to risk management;
- Generate risk identification lists (and assumption lists) for an IT project case study scenario.

7.2 Timings

Lectures:	2 hours
Seminars:	1 hour
Private Study:	7.5 hours
Tutorials:	2 hours

7.3 Seminar Notes

The time allocation for the seminar for this topic is 1 hour.

Activity 1: Short Review of Lecture Material

Use this time to ask any questions that have arisen since the lecture.

Activity 2: Case Study

The Bottled Water Company

The Bottled Water Company is a local company to your location that began trading in 2009. As its name suggests, it specialises in supplying bottled water to a variety of clients. When it began trading, the only clients the company had were local to their base and business was very straight forward.

A client would place an order by post, telephone or face-to-face, based on the Bottled Water Company's list of products. The invoices would be typed into a word processor and printed, the order would be filled and delivered and the invoice would be handed to the client at the same time. A copy of the invoice would be saved on the word processor and a paper copy would be filed.

While this approach has been employed since the beginning, the company has identified that clients are not paying within the required time period. Despite this, the company has successfully grown and has now expanded its client list to include larger companies, restaurants, and clients from outside of the local area.

The current system is a combination of paper, word processor and spreadsheet. The company does not have a computerised database.

With the expansion of clients and the opportunity to become more efficient the management has decided it is time to upgrade. They want to computerise their systems and automate certain key processes.

To save money, the company has decided to develop the new system(s) in-house with no external consultancy.

Task

Work with your group to:

1. Identify any risks that The Bottled Water Company face with such a project and create a risk list. If necessary, you will also need to create an assumption list.

2. Identify any additional information missing from the scenario that would enable you to create a more in-depth risk list for the project.

7.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Using the case study scenario for the Bottled Water Company and the risk and assumption lists created during the seminar for this topic, create a new risk and assumption list based on the Bottled Water Company hiring an external software development company to deliver the project:

Exercise 2

Using the same case study scenario for the Bottled Water Company, which was introduced during the seminar and Exercise 1 of your private study, create a new risk and assumption list based on the Bottled Water Company buying an off-the-shelf software package to fulfil their project requirements.

Exercise 3

Revisit all three risk and assumption lists. Recheck the lists for additional risks that may now be identifiable. These may be new risks not previously identified, or may be risks already on the lists that now require further breakdown to be measurable. Additionally, there may now be identifiable secondary risks that can be added to the lists.

Update the three risk lists, so that each list is as complete as possible.

Exercise 4

Read any chapter on risk management from an available project management textbook(s).

As explained in the lecture(s), each ‘expert’, and by extension textbook, will have differing ideas and content, so this task will enable you to build a broader understanding of the topic of IT Risk Management.

7.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1:

You are going to review the work you carried out during your private study time. Your tutor will chair the discussion.

Exercise 2:

Work in a small group.

Working with the first risk and assumption lists (based on in-house development) generated during the seminar, create a risk assessment map table (refer to lecture notes for example).

- Use 4 table columns: Risk identity number, risk name, likelihood of occurrence (%) and potential impact (%).
- Work through the seminar risk list, discussing each identified risk and agreeing on figures for occurrence and impact columns.

Topic 8: Applying, Evaluating and Managing Risk Analysis

8.1 Learning Objectives

This topic provides an overview of Analysis, Evaluation and Management of Risk.

On completion of the topic, you will be able to:

- Name and discuss international standards for risk management;
- Name and discuss institutes concerned with risk management;
- Analyse, evaluate, conclude and report findings on IT case study scenarios.

8.2 Timings

Lectures:	1 hour
Seminars:	2 hours
Private Study:	7.5 hours
Tutorials:	2 hours

8.3 Seminar Notes

The time allocation for the seminars for this topic is 2 hours.

Activity 1:

You will work in a project team throughout the seminar activities (these can be the same small groups as in Topic 7 or different).

In Topic 7, IT Risk Management, you generated a risk assessment map table for the Bottled Water Company, based on the in-house development case study scenario. Using this risk assessment map table, draw a risk assessment map and plot the risks from the table onto the map.

Remember to be as accurate as possible when plotting the risks.

Activity 2:

Using the existing risk list, risk table and the newly created risk assessment map, generate a new risk table, ranking the risks in order of priority. Your highest priority risk is risk rank 1.

Suggested layout for the new risk table:

Risk Rank	Risk Identity Number	Risk Name	Occurrence %	Impact %

Activity 3:

In order of the risk priority generated during Activity 2, list potential risk responses for each risk.

After generating a list, check that your potential responses fulfil the following requirements:

- Must be realistic
- Must be accurate
- Must be achievable

Eliminate any potential responses that do not fulfil the three requirements. You are aiming to have at least two potential responses for each risk.

Activity 4:

As a project team, agree which of the potential responses listed in Activity 3 will be adopted as the risk response for each of the risks listed in the risk list.

There must be clear evidence recorded as to the reasons behind your team decisions.

8.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Based on the risk list and table created in Topic 7, and the risk assessment map and risk response list generated in this topic's seminar, create a risk database for this in-house option of the proposed project.

This database can be written on paper; you are not required to create a computerised database. You can use your Topic 7 lecture notes for reference.

Exercise 2:

Generate and plot a risk assessment map (and associated tables if not already created during Topic 7) for the Bottled Water Company, based on these additional two options available to the project:

- Hiring of an external software development company
- Purchasing an 'off the shelf' software package

Exercise 3:

Using the two risk assessment maps generated in Exercise 2, create two new risk ranking assessment map tables. The order of your risk rank will be dependent on where each individual risk appears on your risk map.

Rank each risk in order of priority, the highest priority risk being given the ranking 1.

Suggested layout for new risk tables:

Risk Rank	Risk Identity Number	Risk Name	Occurrence %	Impact %

Exercise 4:

Identify and record potential risk responses for each risk listed in the two new risk tables based on the priority of the risks. Remember the three requirements a risk response must fulfil – realistic, accurate and achievable.

Exercise 5:

For all risks in both risk map tables, finalise which risk response is to be adopted.

Exercise 6:

Generate a risk database for both the external software development company option and for the 'off the shelf' option. Your risk database can be in written paper form; you are not required to create a computerised database.

8.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1: Review of Private Study Exercises

This is an opportunity to ask any questions that have arisen during the private study session. Your lecturer will also ask for feedback on your findings.

Exercise 2:

Reunite with your seminar group and using your seminar (group) and private study (individual) findings, discuss and evaluate all the information that has been generated for the Bottled Water Company, based on the three available scenarios. After discussion and evaluation is complete, answer the following question:

- Choosing from the three available scenarios: in-house, external or 'off the shelf' development of the project, which approach do you recommend that the company adopts and why?

Your answer must be backed up by sound reasoning.

Exercise 3:

Nominate a spokesperson from your group (Risk Manager) to present to the class your team recommendation of which approach - in-house, external or 'off the shelf' - the Bottled Water Company should adopt. This is a short presentation and should include your recommendation and the reasons for that recommendation.

Note: You are not required to produce any visual aids or write a presentation script, you are required to very simply present your recommendation and reasoning.

Exercise 4:

As an individual, evaluate your performance as a Risk Manager having completed your responsibility for this project. The following questions require answers:

- What have you learnt?
- What would you do differently next time?
- Is there any work you want to go back to and alter? Why?
- How did your team (group) perform throughout the process?
- Is there any member of your group that you could see being a Risk Manager in the future? Why?
- Would you consider becoming a Risk Manager?

Topic 9: IT Service Management (ITSM)

9.1 Learning Objectives

This topic provides an overview of IT service management within the IT industry

On completion of the topic, you will be able to:

- Explain what IT service management is and its place within the IT industry;
- Discuss in-house and outsourcing ITSM;
- Identify key documentation associated with ITSM;
- Name and discuss ITSM institutes.

9.2 Timings

Lectures:	2 hours
Seminars:	1 hour
Private Study:	7.5 hours
Tutorials:	2 hours

9.3 Seminar Notes

The time allocation for the seminars for this topic is 1 hour.

Activity 1:

As a group write a definition for IT service management based on your knowledge to date. Share your definition with the class.

Activity 2:

Non-strategic systems development is increasingly outsourced to reduce the IS costs of IT projects. Any project or sub-project which is outsourced must have very clearly stated requirements, scope, and source of expected benefits, costs and metrics for measuring performance. There will always be additional contract, vendor selection and knowledge transfer costs incurred.

Based on your research from Private Study Exercise 1, prepare for a class discussion and debate on the following:

- Outsourcing is becoming increasingly lower risk because of the professionalism of providers in developing countries and it will continue to expand in the medium term.

9.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

In your seminar you are going to participate in a discussion on outsourcing. You should research the following:

- One of India's largest outsourcing firms is WIPRO. Details of the services they can provide can be found at their website, www.wipro.com.
- Explore this website to gain an understanding of the services this organisation can offer.
- Click on INVESTOR on the top of the home page and from the next screen select OPERATIONAL METRICS. This will give insight to both the use of performance metrics and the business operating performance.

CIO magazine regularly reviews the outsourcing industry sector and many articles predict that cloud computing will mean the end of traditional outsourcing, or at the very least significantly change its nature and character.

Explore these ideas. The following article may assist you:

- Overby, S. (2010). The End of IT Outsourcing. *CIO Magazine*. [Available Online] http://www.cio.com/article/603075/The_End_of_IT_Outsourcing_As_We_Know_It

Exercise 2:

Identify and compare the advantages and disadvantages of an IT organisation developing:

- an in-house IT service management approach;
- an outsourcing ITSM approach.

Document your findings. You should write a minimum of 150 words and be prepared to present your findings in the tutorial.

Exercise 3:

Under what circumstances, if any, would you recommend an IT organisation choose overseas outsourcing for their ITSM?

Record all of your reasoning (making notes) so that you can present your answer (i.e. your 'circumstances') to the rest of your class during the tutorial.

Exercise 4:

Is priSM a viable professional industry standard for ITSM professionals?

Do you believe priSM will attain international credibility within the IT industry? Why?

Include in your responce the views about priSM which you have discovered through researching these questions (remember to reference this correctly) and which have influenced your own answers.

Exercise 5:

Using the resources available from your centre's library, read any chapter on IT service management from an available textbook, or research ITSM online to build your knowledge base.

9.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1:

You are required to report your findings from Private Study Exercise 2 to the class:

Note any additional advantages and disadvantages identified by other students and the lecturer:

In-house ITSM

Advantages	Disadvantages

Outsourced ITSM

Advantages	Disadvantages

Exercise 2:

Share your answer to Private Study Exercise 3 with the rest of the class.

Exercise 3:

Form two debate teams; one team for those of you **believe** that priSM will become an internationally adopted industry standard (Private Study Exercise 4) and one team for those of you who **do not**.

Each team will take turns debating your findings and arguments.

Topic 10: Analysing and Applying IT Service Management

10.1 Learning Objectives

This topic provides an overview of IT service management standard and frameworks. On completion of the topic, you will be able to:

- Identify and describe International ITSM standard;
- Identify and describe ITSM frameworks;
- Have developed practical ITSM skills.

10.2 Timings

Lectures:	1 hour
Seminars:	2 hours
Private Study:	7.5 hours
Tutorials:	2 hours

10.3 Seminar Notes

The time allocation for the seminars for this topic is 2 hours.

Activity 1:

As a group, identify the critical success factors (CSFs, as introduced to you in Topic 9) relevant to a software development organisation which is in the process of negotiating a contract with an outsourcing ITSM service provider.

Activity 2:

In your group make a list of Key Performance Indicators (KPIs) that could be implemented as measurements by the software development organisation and service provider, based on the critical success factors identified in Activity 1.

Activity 3:

You are required to share your findings from Activity 1 and 2 with the class. Nominate a spokesperson from you team.

Activity 4:

The outsourcing of IT development or support services often runs into difficulties. Just recently in the UK a major systems development for the Health Service has been abandoned, wasting tax payers money and causing issues for the companies contracted in to provide the new systems. More common are minor disputes which occur as a reflection of changing factors external to the project.

Work in groups to decide how you think disputes between an organisation and a service provider should be handled.

Decide if any mechanisms can be built into the initial contract to help.

10.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Following on from the research you carried out for your seminar discussion on outsourcing in Topic 9, read at the following articule, which you will need to refer to for Seminar Activity 4:

- Overby, S. (2011). IT Outsourcing: How to Resolve Minor Disputes with Your Provider. CIO Magazine. [Available Online]
  http://www.cio.com/article/686147/IT_Outsourcing_How_to_Resolve_Minor_Disputes_with_Your_Provider

Exercise 2:

Research which metric reporting method (or methods) you would recommend to the client/service provider from Seminar Activity 1, based on the findings from the seminar.

Write a brief summary detailing your choice and reasons, which you should be prepared to discuss at tutorial.

Exercise 3:

Your software development organisation wishes to adopt an ITSM standard or framework and your line manager has asked you to research and prepare a report, detailing which approach or combination of approaches you recommend and why? The approaches the organisation is considering are ISO 20000, ITIL and one other framework 'of your choice'.

Include the advantages and disadvantages you have identified through your research. If necessary generate an assumption list that your findings are based on.

Your report (findings and recommendations) should be a minimum of two pages.

10.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1:

Share your answers from the private study exercises with the other students in your group.

Exercise 2:

Write a Service Level Agreement for the software development organisation from the private study exercises. Based on all your previous seminar, private study and tutorial work from both this topic and Topic 9, the SLA will be between the organisation and an outsource service provider. The software development organisation wants a one year initial contract, with scope to renegotiate when required. You are encouraged to also consult your lecture notes.

Making realistic assumptions where necessary, your SLA will take the form of a written document and the following content is recommended:

- Purpose of SLA
- Objectives of SLA
- Who the contract is between & duration of contract
- Services included
- Delivery of services
- Changes to service
- Delays
- Monitoring of service
- Standards, frameworks, targets & metrics agreed
- Reporting
- Review of service
- Compensation agreement
- Termination agreement

The SLA you produce should be professional in tone, comprehensive and realistic to the IT industry.

Topic 11: Software Quality Policies and Procedures

11.1 Learning Objectives

This topic provides an overview of software quality, its rationale, policies and procedures. On completion of the topic, you will be able to:

- Understand, define and discuss software quality;
- Identify appropriate software quality measurements/metrics;
- Compare & contrast Software Quality approaches;
- Understand quality procedures.

11.2 Timings

Lectures:	2 hours
Seminars:	1 hour
Private Study:	7.5 hours
Tutorials:	2 hours

11.3 Seminar Notes

The time allocation for the seminars for this topic is 1 hour.

Activity 1:

In groups, discuss and create a comprehensive software quality definition. Nominate a spokesperson and share your definition with the class.

Activity 2:

As a class, discuss the fact that no enforced industry standard exists that encompasses all software development areas.

Do you think there should be an enforced common standard or do you believe due to the nature of software, that this is unrealistic? You should provide clear reasons for your answer.

Activity 3:

This activity ties into your study on Quality Assurance with a focus on understanding why projects fail (Private Study Exercise 1).

Reports of project failure are easy to locate and they often make depressing reading. Some studies suggest that 75% of all software projects fail to meet all the expectations of the project sponsor.

1. On what basis should a project be considered a success or failure?

2. The reasons for failure in the article are organised under four main headings;

   - Project initiation and Planning issues
   - Technical and Requirements issues
   - Stakeholder Management and Team issues
   - Project Management issues

   Under each of these headings, think of and list as many reason for failure as you can, without referring to the article.

11.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

In preparation for Seminar Activity 3, read the following paper:

- Walters, K. (2000). *Most IT Projects Fail – Will Yours?* [Available Online] http://www.projectsmart.co.uk/pdf/most-it-projects-fail-will-yours.pdf

Exercise 2:

Using your centre's resources and your own web-based research, identify additional Software Quality Factor measurements that are available to software developing organisations. Your answer must not include those given as examples in the lecture.

Exercise 3:

Research Software Quality Plans. Identify the purpose of a Research Software Quality Plan and what is included in a plan (content). You will require this information for a future exercise.

Exercise 4:

Research Total Quality Management (TQM) and Six Sigma. Compare and contrast their effectiveness and place in today's software industry.

Write a one page report documenting your findings. Include your conclusions and any recommendations.

Exercise 5:

Research W. Edwards Deming's 14 points for Management. Identify all 14 points and then compare this to Six Sigma. Which if any of the 14 points are applicable and/or exist within Six Sigma?

Make notes on your findings and conclusions.

11.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1:

As a class debate the positives and negatives associated with Total Quality Management and Six Sigma.

Which approach do you believe is more applicable to today's industry? Why?

Exercise 2:

As a class you are going to discuss how you would raise software quality standards. Work with the pair/group you lecturer puts you in, to first draw up a list of options (and reasons for each option) for raising quality standards and then order these in terms of preference or importance. You will then feedback and discuss your options with the whole group.

Topic 12: Applying Software Quality / Module Review and Assessment Clinic

12.1 Learning Objectives

This topic provides an overview of software quality standards and institutes, as well as a module review. On completion of the topic, you will be able to:

- Name and discuss software quality industry standards;
- Name and compare (software) quality institutes;
- Create a software quality plan;
- Research quality standards and form conclusions;
- Report findings.

12.2 Timings

Lectures:	1 hour
Seminars:	2 hours
Private Study:	7.5 hours
Tutorials:	2 hours

12.3 Seminar Notes

The time allocation for the seminars for this topic is 2 hours.

Activity 1:

Write a detailed Software Quality Plan for a software development organisation planning a bespoke software project, to be utilised on handover by a financial sector based client (e.g. a Bank).

The following layout has been provided for you as guidance. You may require additional report sections. Where assumptions are required please include a realistic assumption list within your plan.

1.0 Introduction

- 1.1 Purpose of report
- 1.2 Report objectives

2.0 Management approach

- 2.1 Approach chosen
- 2.2 Methodology employed
- 2.3 Tools & techniques chosen
- 2.4 Metrics
- 2.5 Risk management
- 2.6 Reporting method
- 2.7 Client handover

3.0 Documentation

- 3.1 Essential documentation
  - 3.1.1 Content
  - 3.1.2 Layout
- 3.2 Development
- 3.3 User

4.0 Standards Compliance

- 4.1 ISO
- 4.2 Frameworks

5.0 Testing

5.1 Testing approaches

5.1.1 Black box (example – you may not choose this)

6.0 Conclusion

7.0 Recommendations

12.4 Private Study Exercises

You should spend approximately 7.5 hours on the Private Study for this topic. You should use this time to complete the exercises below as directed by your lecturer and to review the contents of this topic.

Exercise 1:

Within the software industry, identify which specialist areas have to conform to governance standards as law (e.g. Medical).

Exercise 2:

Research ISO 9126 and ISO 25010. Compare and contrast the two standards.

Write a one page report on your findings and be prepared to discuss this with the lecturer and other students.

Exercise 3:

There are very many gurus who have contributed to societies knowledge and understanding of quality and quality standards.

The following list gives the names of some of the most respected in this category;

- Feigenbaum
- Deming
- Juran
- Ishikawa
- Taguchi
- Crosby

1. Research a little about the background and work of each of these gurus.

2. For each Guru try to identify both strengths and weaknesses in the approach they took towards achieving the quality objective. Write a short summary for each one.

Exercise 4:

There are very many different types of small team that maybe set up within a TQM (Total Quality Management) environment.

1. Research the nature of Quality circle teams and at least 4 of the following;

    - TQMT
    - QIG
    - CAT
    - QIP

- PQT
- QC
- QIT
- DPA

2. Explain the nature and function of the teams and suggest examples to illustrate when you think each would be appropriate. These can be in the form of short notes.

Exercise 5:

Review the material for the module. You should bring any specific questions about the module and revision for the examination to the tutorial session.

12.5 Tutorial Notes

The tutorials for this topic will last for 2 hours.

Exercise 1: Review of Private Study exercises

Your lecturer will provide you with the opportunity for a short review of your private study exercises and you should discuss any problems you had and ask questions to clarify points as necessary.

Exercise 2: Assessment Clinic

This is your opportunity to ask any questions that you have regarding your assessment for this module.