



# ISYS302

## Management of IT Systems and Projects

S1 Day 2016

*Dept of Computing*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Convenor, Lecturer

Prof. Jian Yang

[jian.yang@mq.edu.au](mailto:jian.yang@mq.edu.au)

E6A 384

By appointment

Lecturer

Dr. Peter Busch

[peter.busch@mq.edu.au](mailto:peter.busch@mq.edu.au)

E6A 320

3-4pm Thursday

Credit points

3

Prerequisites

39cp including ((ISYS254 or COMP255 or ISYS227 or COMP227) and (6cp in COMP or ISYS or ACCG or STAT or BUS or BBA units at 200 level))

Corequisites

Co-badged status

Unit description

This unit aims to provide an understanding of how information technology systems and projects can be efficiently managed. This unit includes detailed study of techniques for planning, tracking and measuring software projects. Issues covered include: quality evaluation; estimation measurement techniques; and project risk planning and management. The unit provides a sound grounding in how projects can be managed in regards to quality assurance and risk assessment. The unit also covers issues in the management of IT systems, including: change management; configuration management and planning; people management; hardware asset management; and capacity planning and availability.

## Important Academic Dates

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

## Learning Outcomes

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

Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.

Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.

An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.

Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Assessment Tasks

Name	Weighting	Due
<u>Assignment 1</u>	15%	29/03/2016
<u>Assignment 2</u>	15%	29/04/2016
<u>Assignment 3</u>	20%	27/05/2016
<u>Mid Semester Examination</u>	25%	Week 7
<u>Final Examination</u>	25%	TBA

### Assignment 1

Due: **29/03/2016**

Weighting: **15%**

A briefing on a contemporary IT project is given. The assignment involves planning the project with the assistance of MS Project 2013 and then providing a succinct Project Management Plan which includes the Gantt Chart, Network Diagram, Resource Allocation and addresses scope, objectives, success metrics, controls and risk management.

On successful completion you will be able to:

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management

and capacity planning and availability.

- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Assignment 2

Due: **29/04/2016**

Weighting: **15%**

Practical classes evaluate software tools that assist with the development of a software project which include MS Project, Google Code, GitHub, JIRA and TRAC. This assignment involves the student choosing a project management role and then selecting two of the investigated tools to evaluate and compare and contrast.

On successful completion you will be able to:

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Assignment 3

Due: **27/05/2016**

Weighting: **20%**

Extensive background information is available for a failed system. Groups of 4 students will work on a new project plan outlining the context and business benefits and consider a more flexible project process model and formulate an effective risk management plan. A comprehensive report is required.

This group assignment is individually marked based on peer review forms.

Each student in the group will deliver an individually marked presentation on their components of assignment 3. Each group has 15 minutes (10 minutes for presentation and 5 minutes for questions).

On successful completion you will be able to:

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.

- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Mid Semester Examination

Due: **Week 7**

Weighting: **25%**

A 24 hour take home exam covering material on weeks 1-6. Placed on iLearn and due in week 7.

On successful completion you will be able to:

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Final Examination

Due: **TBA**

Weighting: **25%**

A final closed book examination will cover all lecture, reference and tutorial material.

On successful completion you will be able to:

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Delivery and Resources

### Classes

Each week you should attend three hours of lectures and workshops and from Weeks 1 to 7, one hour of practicals. For details of days, times and rooms consult the [timetables webpage](#).

Note that practicals commence in week 1.

Please note it is to your benefit to attend all of the practicals.

### Resources to assist your learning

[Digital recordings](#) of lectures are available as **Echo360** through iLearn login.

### Textbook

The mandatory textbook for ISYS302 used this semester is:

- **Schwalbe, K., (2014) *Information Technology Project Management* 7th Ed.**  
**Thomson Course Technology Boston Mass. U.S.A**

Numerous recent references have been used to compile the management series of lectures and workshops from Weeks 8 to 11. Students will be provided with online references and reference will be made to additional textbooks available in the library.

### Technology used

Use will be made of MS Project 2013, Google Code, JIRA, TRAC and GitHub. Students are also expected to make use of MS Word and MS Powerpoint.

Faculty of Science students will be able to download a free educational version of MS Project 2013.

### Submission methods for assessment tasks:

Only soft copy assignment submissions are required and will be submitted, and marks returned, will be done through the ISYS302 page on iLearn.

### Late submission:

Late submission of individual work will incur a 10% penalty for every 24 hours, or part thereof, it is late. So within 24 hours, the maximum mark that can be obtained is 90% of the full grade for that assessment task; between 24 and 48 hours, the maximum mark that can be obtained is 80% of the full grade; and so on. No extra documentation is required unless the student wishes to have an extension (see below) applied.

Late submissions of group based assignments are not permitted unless under exceptional circumstances with documentary evidence provided to the unit convenor which may include medical certificates as per the Department of Computing policy. One person being sick does not mean the group cannot submit work. Students are recommended to have a backup plan for group based submissions.

## Extensions

The current process is for the student or group to contact student services and apply for a disruption. Medical causes will require a Macquarie University Professional Authority Form.

Once a disruption has been approved, the convenor can grant special consideration which is usually an appropriate extension.

## Exam:

The final exam will focus on content covered in the classes throughout the semester. Please see the assessments section for details on the final exam.

# Unit Schedule

Week	Lecture	Lecture References	Practicals	Assignments
1	Course Structure Introduction to Project Management IT Projects	Schwalbe Chap 1 Schwalbe Chap 2		Assign 1 – Project Plan using MS Project 2013, 15%, Due Week 4
2	Scope Management Time Management	Schwalbe Chap 5 Schwalbe Chap 6	MS Project, Part 1	
3	Cost Management Quality Management	Schwalbe Chap 7 Schwalbe Chap 8	MS Project, Part 2	
4	Project Management Process Project Integration Management	Schwalbe Chap 3 Schwalbe Chap 4	Google Code	Assign 1 Due by 11:55 pm on 24/3/16
5	HR Management Communication Management	Schwalbe Chap 9 Schwalbe Chap 10	GitHub	Assign 2: Assessment of PM Tools, 15%, Due Week 7
6	Risk Management Procurement Management	Schwalbe Chap 11 Schwalbe Chap 12	JIRA and TRAC	
7	IT Project Management Challenges (Guest Speaker) Stakeholder Management	John Sutherland (Ramsay Healthcare) Schwalbe Chap 13	Assignment 2 Consultation	Mid semester exam due by 11:55 pm on 29/4/16 Assign 2 Due by 11:55 pm on 29/4/16 Assign 3: System Project Plan, 20%, Due Week 12

8	DSDM Altern Agile Project Management + Workshop	DSDM Handbook	No session	
9	Migration to the Cloud  Project Selection Case Study	Linthicum  Larson et al	No session	
10	Succeeding as a Professional (Guest Speaker)  Mobile, Social and Wearables Trends	Professionals Australia  JWT, 2014	No session	
11	The Internet of Things  Project Leadership Case Study	BI Intelligence, 2014  Larson et al	No session	
12	Group Presentations		No Session	Assign 3 Due by 11:55 pm on 3/6/16
13	Group Presentations		No Session	
Exam		Check online for details		25% of Final Mark

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy [http://mq.edu.au/policy/docs/academic\\_honesty/policy.html](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

**New Assessment Policy in effect from Session 2 2016** [http://mq.edu.au/policy/docs/assessment/policy\\_2016.html](http://mq.edu.au/policy/docs/assessment/policy_2016.html). For more information visit [http://students.mq.edu.au/events/2016/07/19/new\\_assessment\\_policy\\_in\\_place\\_from\\_session\\_2/](http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/)

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public [http://www.mq.edu.au/policy/docs/complaint\\_management/procedure.html](http://www.mq.edu.au/policy/docs/complaint_management/procedure.html)

Disruption to Studies Policy [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html) *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.



## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: [https://students.mq.edu.au/support/student\\_conduct/](https://students.mq.edu.au/support/student_conduct/)

## Results

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

## Student Support

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

## Learning Skills

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

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

## Student Services and Support

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

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

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

## Graduate Capabilities

### Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

## **Learning outcomes**

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## **Assessment tasks**

- Assignment 1
- Assignment 2
- Assignment 3
- Final Examination

## **Capable of Professional and Personal Judgement and Initiative**

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

## **Learning outcomes**

- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Assessment tasks

- Assignment 1
- Assignment 2
- Assignment 3
- Mid Semester Examination
- Final Examination

## Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## Learning outcomes

- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## Assessment tasks

- Assignment 1
- Assignment 2
- Assignment 3
- Mid Semester Examination
- Final Examination

## Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary

solutions to problems.

This graduate capability is supported by:

## **Learning outcomes**

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.

## **Assessment tasks**

- Assignment 1
- Assignment 2
- Assignment 3
- Mid Semester Examination
- Final Examination

## **Critical, Analytical and Integrative Thinking**

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

## **Learning outcomes**

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to

the business context.

- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## **Assessment tasks**

- Assignment 1
- Assignment 2
- Assignment 3
- Mid Semester Examination
- Final Examination

## **Problem Solving and Research Capability**

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

## **Learning outcomes**

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## **Assessment tasks**

- Assignment 1
- Assignment 2
- Assignment 3
- Mid Semester Examination
- Final Examination

## Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

### Learning outcomes

- Competence in planning, tracking and measuring Information technology projects; including the ability to undertake quality evaluation and estimation measurement techniques, and project risk planning and management.
- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

### Assessment tasks

- Assignment 1
- Assignment 2
- Assignment 3
- Mid Semester Examination
- Final Examination

## Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

## **Learning outcomes**

- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## **Assessment tasks**

- Assignment 1
- Assignment 2
- Assignment 3
- Final Examination

## **Socially and Environmentally Active and Responsible**

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

## **Learning outcomes**

- Application of appropriate techniques relating to: change management; configuration management and planning; human resource management; hardware asset management and capacity planning and availability.
- An understanding of the role of the CIO and being able to analyse information technology strategic direction with the aim of recommending investments appropriate to the business context.
- Confidence in leadership skills; communication skills; critical analysis skills; problem-solving skills and creative thinking skills.

## **Assessment tasks**

- Assignment 1
- Assignment 2
- Assignment 3

- Final Examination

## Changes from Previous Offering

A mid semester exam is added.

## Standards

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

HD	Apply techniques and knowledge in new contexts, show breadth and depth of understanding of quality evaluation, estimation measurement, project risk planning and measurement. Can use MS Project and Sharepoint to solve problems with high accuracy.	A sound grounding in how projects can be managed in regards to quality assurance and risk assessment. Show breadth and depth of understandings on issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability. Able to apply these techniques and knowledge in new contexts.	Demonstrate leadership, creativity, critical thinking and analysis skills. Enthusiatic in acquiring new knowledge in the IS project management area. Demonstrate capability in applying new IS project management knowledge to solve real-world problems. Conduct team work effectively and play a key role in moving the whole project team forward.
D	Apply techniques and knowledge in some new contexts, show breadth and depth of understanding across most of the topics including: quality evaluation, estimation measurement, project risk planning and measurement. Can use MS Project to solve problems, with limited errors.	A sound grounding in most topics related to how projects can be managed in regards to quality assurance and risk assessment. Show breadth and depth of understandings on most issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability. Able to apply these techniques and knowledge in some new contexts.	Demonstrate some leadership occasionally. Show creativity, critical thinking and analysis skills. Have the capability in applying IS project management knowledge to solve real-world problems. Collaborate with team members well and finish assigned tasks on time and with good quality.
CR	Show breadth of understanding across most of the topics including: quality evaluation, estimation measurement, project risk planning and measurement. Have fundamental knowledge about how to use MS Project, but with some non-major errors.	Understands some aspects of how projects can be managed in regards to quality assurance and risk assessment. Show breadth of understandings on most issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability.	Demonstrate analysis skills in some occasions. Know how to apply IS project management knowledge to solve some of the real-world problems. Able to finish assigned tasks on time and with good quality most of the time.



P	Can reproduce definitions and ideas, show some breadth of understanding of the topics including: quality evaluation, estimation measurement, project risk planning and measurement. Some knowledge about MS Project with a few major misunderstandings or mistakes.	Can reproduce some definitions and ideas, show some breadth on issues in the management of IT systems, including: change management, configuration management and planning, People management, hardware asset management and capacity planning and availability.	Demonstrate limited analysis skills. Can apply IS project management knowledge to solve limited real-world problems. Able to finish all assigned tasks on time and with acceptable quality.
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## Grading

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

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

In this unit, your final grade depends on your performance in each part of the assessment. For

each task, you receive a mark that combines your standard of performance regarding each learning outcome assessed by this task. Then the different component marks are added up to determine your total mark out of 100. Your grade then depends on this total mark and your overall standards of performance.

## In particular, **in order to pass the unit**, you must

- Have performed satisfactorily in the internal (assessment) components of the course.
- Have satisfactory performance in the final examination.

This means that you may fail the unit if you do not submit satisfactory submissions for the assignments or do not perform satisfactorily in the exam.

**Department of Computing expectations are that students have to perform satisfactorily in the final exam as well as in their internal work/assignments.**

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

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