

1004ICT

Foundations of Computing & Communication

Semester 1 - 2008

Academic Organisation:	School of Information and Communication Technology
Faculty:	Science, Environment, Engineering and Technology
Credit point value:	10
Student Contribution Band:	Band 2
Course level:	Undergraduate
Campus/Location/Learning Mode:	Gold Coast / On Campus / In Person Logan / On Campus / In Person Nathan / On Campus / In Person
Convenor/s:	APro John Thornton (Gold Coast) Prof Vladimir Estivill-Castro (Logan) Mr David Tuffley (Nathan)
Enrolment Restrictions:	Nil
This document was last updated:	26 January 2008

BRIEF COURSE DESCRIPTION

This course aims to develop students' professional communication skills through study of the history, practice, ethics and social context of information technology.

SECTION A – TEACHING, LEARNING AND ASSESSMENT

COURSE AIMS

The aim of the course is to provide students with an historical perspective on information technology, introducing the ideas and developments that have been significant in shaping modern technological society, describing and defining computing and computer technology and looking at the impact of this technology on the contemporary world. From this it is expected that students will gain an informed critical perspective from which to assess both the positive and negative aspects of current and future applications of information technology.

The course is further intended to equip students with the ability to independently research, critically appraise and present ideas and arguments in both written and oral form. In professional terms, the course aims to introduce students to a broader view of their role as an IT professional, fostering a more informed and ethical perspective on the development and use of information technology, while also developing the student's ability to communicate effectively in the workplace.

LEARNING OUTCOMES

On completion of the course, students should possess:

1. An historical perspective on the development of computer technology
2. A theoretical understanding of the nature of computing
3. A critical understanding of the application of computer technology

Students should also have developed the following practical skills:

4. Ability to effectively communicate interpersonally and in group situations
5. Ability to independently gather appropriate research material
6. Ability to critically appraise differing viewpoints
7. Ability to clearly and correctly present a well-balanced argument

CONTENT, ORGANISATION AND TEACHING STRATEGIES

Foundations of Computing and Communication provides a general introduction to computing and computer technology by first tracing the historical development of modern technological society and then looking in more detail at information technology and its impact on the modern world. The course will examine the principles behind modern computer architectures and languages, concentrating on the broader significance of computing in the intellectual, social and economic development of the modern world.

Main Topics:

- Historical roots of technological society
- The nature of scientific investigation
- History of computing
- Theoretical and technical basis of computing
- The impact of information technology on the individual and society
- Computation and intelligence

Type	Hours per Week	Weeks
Lecture	2	1 – 13 (inclusive)
Tutorial	2	1 – 13 (inclusive)

The course has (at most) four compulsory hours of class contact per week, with two hours of lectures and up to two hours of tutorials (tutorial times will vary from one to two hours per week as advised during the semester). Attendance at lectures is strongly encouraged. Important course announcements may be made during the lectures and extra course content not contained in either this outline or lecture notes may also be presented.

Rationale for Teaching Methods

Lectures cover the fundamentals and principles of the course topics, while the tutorial sessions serve as a workshop for the development of research, writing and presentation skills and also as a forum for the discussion of the lecture topics. During this process, tutors will be giving instruction about the principles of good writing and presentation, including developing research skills, structuring arguments, correct expression, referencing, oral presentation skills, etc. Students will also be required to complete weekly readings, engage in tutorial discussions and in the critical appraisal of their own and other students' work.

CONTENT SUMMARY

Lectures

The lecture material for the subject is divided into four sections:

Section 1: Historical Foundations

Here we look at the historical background to the development of information technology. The emphasis of this material will depend on the particular perspective and expertise of the lecturer delivering this section, but will include a selection of the following topics:

- Computation, numbers and states
- The beginnings of arithmetic, geometry and algebra
- The scientific revolution
- Early computing machines
- Babbage's calculating engines and practical mechanical computation
- The end of Newton's world: 20th century science and mathematics
- The mechanisation of mathematical abstraction and the first electronic machines

Section 2: Theory and Architecture

In this section we give a brief overview of the theory of computation and explain how this theory is realised by introducing the basic concepts of computer architecture. Again, the emphasis of this material will depend on the particular perspective and expertise of the lecturer delivering this section, but will include a selection of the following topics:

- Defining computation
- Turing machines
- Languages and algorithms
- The von Neumann architecture
- Logic gates, registers, addressable memory
- Instruction set architecture

Section 3: Information Technology in the Modern World

This section looks at information technology in the broader context of its effects on society and on the individual. It is designed both to broaden students' knowledge of the implications of technological progress and to help develop an ethical perspective on the use of technology. Again, the emphasis of this material will depend on the particular perspective and expertise of the lecturer delivering this section, but will include a selection of the following topics:

- IT and the broader technological system
- Globalisation
- Costs and benefits
- Mass media, the internet and human communication
- Information: quantity vs. quality
- Cultural and psychological implications

Section 4: Computers and the Human Mind

In the final section we look at computation in relation to our understanding of human intelligence, while also casting an eye on some possible futures. Again, the emphasis of this material will depend on the particular perspective and expertise of the lecturer delivering this section, but will include a selection of the following topics:

- Artificial intelligence
- The computational theory of mind
- Cognitive technologies and the future of human intelligence
- Alternative perspectives

Tutorials

The tutorial material for the subject concentrates on the development of students' communication skills and is divided into two basic areas: 1) Development of writing skills, and 2) Development of oral communication skills via the court case presentations. Tutorials are connected to the lecture material via the topics of the court case and essay writing assessment items.

Tutorials	Topics
1- 6	<ul style="list-style-type: none">• Research and referencing• Reading strategies and critical analysis• Unpacking a question and developing an argument• Structuring and writing an essay
7-12	<ul style="list-style-type: none">• Introduction to oral communication• Student court case presentations
13	<ul style="list-style-type: none">• Exam preparation and time management

Rationale for Content

The content of the course is intended to give students a broad ranging and critical perspective on computing and information technology. Hence the first section of the course looks at the development of scientific culture, before examining the more recent history of computing. The course then examines the definitions of the core concepts of computer science: computation, architectures and languages. Given this background the students should then be able to critically examine the impact of information technology on the individual and contemporary society. These impacts are dealt with in the middle section of the course before covering the more advanced concepts of information and computation in relation to intelligence. These later topics point to future areas of interest for the students and are designed to give a critical perspective from which to view future developments in information technology.

ASSESSMENT

Summary of Assessment

Item	Assessment Task	Length	Weighting	Total Marks	Relevant Learning Outcomes	Due Date and Time
1.	Mini-Tests x 10		20%	20	1	(see below)
2.	Essay	1500 words	20%	20	1,2,3,4,6	Weeks 4 and 7
3.	Court Cases	30 mins 1000 words	20%	20	4,5,6,7	Weeks 8-12
4.	Final Exam	2 hours	40%	40	1,2,3,6,7	Exam week

Writing Skills Course (1113ICT): 5% Bonus

In addition to undertaking the above 4 assessment items, students are encouraged to undertake the *first* ICT on-line writing skills course 1113ICT. This OCP course is required for successful completion of the BIT degree and provides a grounding in the basic writing skills necessary for the essay and court case assessment items. Students successfully completing the writing skills course 1113ICT before the end of semester 1 2006 will gain a further 5% towards their overall mark for Foundations of Computing and Communication.

Assessment Details

Attendance of the lecture program and participation tutorial program is considered necessary for the successful completion of the course. Consequently attendance will be encouraged via the administration of 10 mini-tests, scheduled during the lecture and tutorial program. Each successfully completed mini-test has a 2% weighting. Each mini-test will comprise of 4 multiple choice questions based on the lecture material. Students are allowed to refer to unmarked copies of the course textbook during the tests but no other materials are allowed. As the tests are also measuring attendance, students not attending the classes where the tests are administered will not be eligible for the 2% mark (regardless of the reason for non-attendance). Please note the test administration dates will not be published in advance. Students missing mini-test marks can regain them via participation in the court case presentations described below.

The essay assessment gives students the opportunity to demonstrate their research, writing and referencing skills based on a topic covered in the lecture material and to receive detailed feedback from their tutors. Part one of the assignment is a pass/fail component designed to test students' research and referencing skills. Students successfully completing this part will be awarded a full 10%. However, students failing to demonstrate adequate referencing skills will be required to resubmit part one with the written essay. During this time, these students will be encouraged to seek further assistance from their tutor. Please note students failing to submit part one of the assignment by the due date on week 4 will not be eligible to resubmit them with the essay.

The court case presentations are designed to assess and improve student oral communication skills. Each presentation will involve a group of 4 students playing 4 different roles in a court case to debate and decide on particular issues raised by the lecture material. Student roles are divided into prosecution lawyer, prosecution witness, defence lawyer and defence witness. The tutor will act as judge and the remainder of the class will act as jury. The particular roles each student will play and the week of presentation will be decided by random selection. In the event that a particular participant does not attend the court case, students who have lost mini-test marks in the subject can regain 2% by playing in the missing role (if more than one student wishes to fill a missing role, selection will be random). In addition, each prosecution or defence team is required to hand in a 1000 word document that presents their argument in written form. This assessment is part of a workshop environment where students are encouraged to discuss and identify the features that make up a good presentation, the emphasis being that the whole class learns and improves on their presentation skills via the examination of individual performances.

The final examination will test students' specific understanding of the lecture material via a set of written short answer questions under restricted conditions. The final exam will be a "closed book" examination and students will **not** be allowed any written material.

Passing Criteria

Students must achieve a final examination mark of 40% or better and an overall 50% or better to achieve a Pass grade (or better) in this course. Students must also submit all major items of assessment (>= 10% weighting) to be eligible for a Pass grade. **Note:** Non-compliance with any assignment submission criteria may result in the assignment not being marked.

Return of Assessment Items

Assessment items will be returned during tutorial sessions.

Notification of Availability of Feedback on Assessment

Staff will make their best efforts to provide feedback on each assessment item within two weeks of the submission date.

GRADUATE SKILLS

Graduate Skills	Taught	Practised	Assessed
Effective communication (written)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Effective communication (oral)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Effective communication (interpersonal)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Information literacy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Problem solving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Critical evaluation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Work autonomously	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Work in teams	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Creativity and innovation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethical behaviour in social / professional / work environments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Responsible, effective citizenship	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TEACHING TEAM

Convenor Details	Overall and Gold Coast
Course and Campus Convenor	John Thornton
Email	j.thornton@griffith.edu.au
Office Location	G07 1.52
Phone	28730
Fax	28066
Consultation times	TBA

Co-Convenor Details	Nathan and Logan
Campus Convenor	David Tuffley
Email	d.tuffley@griffith.edu.au
Office Location	N44 2.22
Phone	55045
Fax	56719
Consultation times	TBA

Additional teaching team members

TBA

COURSE COMMUNICATIONS

Important course communications will be posted on the course web-site which can be accessed via learning@griffith. Further details will be provided in the introductory lecture.

TEXTS AND SUPPORTING MATERIALS

Course Textbook:

Thornton, J. (2007). *The Foundations of Computing and the Information Technology Age: A historical, sociological and philosophical enquiry*. Sydney: Pearson Education Australia (ISBN 0733988482).

Additional reference and support material will be available on the course web-site accessible via learning@griffith.

SECTION B – ADDITIONAL COURSE INFORMATION

To be eligible for pass grade (or better) for the course, students are required to complete ALL forms of assessment worth 10% or more and must demonstrate a reasonable degree of competence in the required course objectives as examined in each form of assessment. Students must also obtain at least 40% in the final examination.

Students may work together in researching their assignments but final submission must reflect the work and original contribution of each individual student.

Full and detailed acknowledgment (e.g. notation, and/or bibliography) must be provided if contributions are drawn from the literature in preparation of reports and assignments. Material copied from any source (including the internet) must be properly referenced. This means a copied excerpt must be clearly indicated by quotes or special indentation from the rest of an assignment so that there is no doubt about authorship, i.e. students must clearly distinguish their own writing from sources that are copied. *Inserting a copied section into an assignment and then providing a reference is not enough and will be treated as plagiarism.*

Any dishonest assignments will be dealt with under the rules applying in “The Process of Assessment, Grading and Dissemination of Results” and Statute 8.2 - Student Good Order as defined in the University Handbook.

Dishonest assignment includes:

- deliberate copying or attempting to copy the work of other students;
- use of or attempting to use information prohibited from use in that form of assessment;
- submitting the work or another as your own; or
- plagiarism (i.e. taking and using as your own the thoughts and writings of another with the intent to claim the work as your own).

All documentation for assessment must be word processed.

Students must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

Electronic assignment submissions must contain only files relating to that assignment. Submissions containing irrelevant files and / or viruses may NOT be assessed. Files must be named as advised by the course convenor. Files must have accurate date and time labels attached to them.

Assignment MUST be submitted by the due date and time. Extensions may be granted in exceptional circumstances by "Application for Extension" and MUST be made BEFORE the due date. Extension Application Forms are available from the Administration Office of the Faculty. Before an extension will be granted, a review of the work completed to date MUST be undertaken with the course convenor.

An assessment item submitted after the due date and time, without an authorised extension, will be penalised. The standard penalty is the reduction of the mark allocated to the assessment item by 10% of the maximum mark applicable for the assessment item, for each day or part day that the item is late. Weekends count as one day in determining the penalty. Assessment items submitted more than five days after the due date are awarded zero marks.

Assignments submitted without clear student name, course, tutorial group number and tutor identification will not be assessed.

Students are expected to spend time outside supervised tutorial periods developing skills and knowledge.

Assignments received by fax will NOT be accepted.

Any failure to submit an assessment item will only be excused by a comprehensive medical certificate covering the majority of the period over which the work was due. Otherwise an extension may be granted only at the convenor or Head of School's discretion.

Any electronic submission of an assessment item which contains a virus detectable by the school's virus scanning facilities may be deemed to be a non submission. This includes all types of viruses such as the word processing macro types.

All students will have an opportunity to provide the members of the teaching team for this course with feedback at the end of the semester in the form of the Course Evaluation questionnaire. The Course Evaluation plays a valuable and important role for the teaching team in both continually improving this course as well as reinforcing the successful aspects of it. However, during the semester, any minor issues regarding the teaching of the course that you consider worthy of attention are welcomed and should be spoken of with the relevant individual from the teaching team. Should you have more serious concerns, then you should forward your considerations in writing to either the Course Convenor or to the Head of School. Sign your letter, as anonymous material will be treated as vexatious and will be discarded from further consideration. Should you require further information, the university policy on such issues can be viewed at: <http://www.gu.edu.au/equity/>

SECTION C – KEY UNIVERSITY INFORMATION

ACADEMIC MISCONDUCT

Students must conduct their studies at the University honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is academic misconduct and is unacceptable.

Some students engage deliberately in academic misconduct, with intent to deceive. This conscious, pre-mediated form of cheating is one of the worst forms of fraudulent academic behaviour, for which the University has zero tolerance and for which penalties, including exclusion from the University, will be applied.

However the University recognises many students commit academic misconduct without intent to deceive. These students may be required to undertake additional educational activities to remediate their behaviour.

Specifically it is academic misconduct for a student to:

- **Cheat in examinations and tests** by communicating, or attempting to communicate, with a fellow individual who is neither an invigilator or member of staff; by copying, or attempting to copy from a fellow candidate; attempting to introduce or consult during the examination, any unauthorised printed or written material, or electronic calculating or information storage device; or mobile phones or other communication device, or impersonates another.
- **Fabricate results** by claiming to have carried out tests, experiments or observations that have not taken place or by presenting results not supported by the evidence with the object of obtaining an unfair advantage.
- **Misrepresent themselves** by presenting an untrue statement or not disclosing where there is a duty to disclose in order to create a false appearance or identity.
- **Plagiarise** by representing the work of another as their own original work, without appropriate acknowledgement of the author or the source. This category of cheating includes the following:
 1. collusion, where a piece of work prepared by a group is represented as if it were the student's own;
 2. acquiring or commissioning a piece of work, which is not his/her own and representing it as if it were, by
 - purchasing a paper from a commercial service, including internet sites, whether pre-written or specially prepared for the student concerned
 - submitting a paper written by another person, either by a fellow student or a person who is not a member of the University;
 3. duplication of the same or almost identical work for more than one assessment item;
 4. copying ideas, concepts, research data, images, sounds or text;
 5. paraphrasing a paper from a source text, whether in manuscript, printed or electronic form, without appropriate acknowledgement;
 6. cutting or pasting statements from multiple sources or piecing together work of others and representing them as original work;
 7. submitting, as one own work, all or part of another student's work, even with the student's knowledge or consent.

A student who willingly assists another student to plagiarise (for example by willingly giving them their own work to copy from) is also breaching academic integrity, and may be subject to disciplinary action.

Visit the University's Institutional Framework for Promoting Academic Integrity Among Students for further details.

PLAGIARISM DETECTION SOFTWARE

From semester 2, 2007 the University has been piloting the use of plagiarism detection software. Students should be aware that your Course Convenor may use this software to check submitted assignments. If this course is included in the pilot your Course Convenor will provide more detailed information about how the detection software will be used.

HEALTH AND SAFETY

Griffith University is committed to providing a safe work and study environment, however all students, staff and visitors have an obligation to ensure the safety of themselves and those whose safety may be affected by their actions. Staff in control of learning activities will ensure as far as reasonably practical, that those activities are safe and that all safety obligations are being met. Students are required to comply with all safety instructions and are requested to report safety concerns to the University.

General health and safety information can be obtained from http://www.griffith.edu.au/hrm/health_and_safety/

Information about Laboratory safety can be obtained from http://www.griffith.edu.au/ots/secure/health/content_labsafety.html

KEY STUDENT-RELATED POLICIES

All University policy documents are accessible to students via the University's Policy Library website at: www.griffith.edu.au/policylibrary. Links to key policy documents are included below for easy reference:

[Student Charter](#)

[Academic Standing, Progression and Exclusion Policy](#)

[Student Administration Policy](#)

[Policy on Student Grievances and Appeals](#)

[Assessment Policy](#)

[Examinations Timetabling Policy and Procedures](#)

[Academic Calendar](#)

[Guideline on Student E-Mail](#)

[Health and Safety Policy](#)

UNIVERSITY SUPPORT RESOURCES

The University provides many facilities and support services to assist students in their studies. Links to information about University support resources available to students are included below for easy reference:

[Learning Centres](#) - the University provides access to common use computing facilities for educational purposes. For details visit www.griffith.edu.au/cuse

[Learning@Griffith](#) - there is a dedicated website for this course via the Learning@Griffith student portal.

[Student Services](#) facilitate student access to and success at their academic studies. Student Services includes: Careers and Employment Service; Chaplaincy; Counselling Service; Health Service; Student Equity Services (incorporating the Disabilities Service); and the Welfare Office.

[Learning Services](#) within the Division of Information Services provides learning support in three skill areas: computing skills; library skills; and academic skills. The study skills resources on the website include self-help tasks focusing on critical thinking, exam skills, note taking, preparing presentations, referencing, writing, proof reading, and time management.
