Griffith COLLEGE
Queensland, Australia

1. General Course Information

1.1 Course Details

Course Code:	**1007ICT**
Course Name:	**Introduction to Computer Systems and Networks**
Trimester:	**Trimester 3, 2019**
Program:	Diploma of Information Technology
	Mt Gravatt Campus
	In Person
Credit Points:	10
Course Coordinator:	Dr Rob Baltrusch
Document modified:	26th September 2019

Course Description

Introduction to Computer Systems Networks is a 10 credit point course within the Diploma of Information Technology. The course is situated within the second semester of the program. The Diploma of Information Technology is designed to provide students with a pathway to:

- further university study in Information Technology and related degrees, or
- employment opportunities within the IT industry.

This course introduces the underlying structures and mechanisms of modern computer systems and networks.

IT professionals, whether involved in software or hardware development, information systems development or management, need to have a fundamental understanding of the basic architecture and operation of a computer system. This course provides an overview of the hardware, software and network technologies that define modern computer systems. Knowledge developed in this course assists in the application of computing technologies to solve real world problems.

Assumed Knowledge

This course is not a prerequisite for any other Diploma courses.

1.2 Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.

Name	Email
Dr Rob Baltrusch	rob.baltrusch@staff.griffithcollege.edu.au

1.3 Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the “Support and Services/Teacher Consultation Times” link.

1.4 Timetable

Your timetable is available on the Griffith College Portal at Class Timetable in Student and Services.

1.5 Technical Specifications

All students must have access to a computer or suitable mobile device.

2. Aims, Outcomes & Generic Skills

2.1 Course Aims

Introduction to Computer Systems Networks aims to provide students with a working knowledge of how the hardware, software and networking components that define a computer work together.

The primary cognitive learning outcome is for you to be able to confidently answer, in some detail from a technical perspective, the question, "How does a computer system work?" A secondary outcome is for you to understand the range of modern computing architectures that are available and their application to computing problems.

A specific application based outcome is that of learning how to control computer hardware through software.

2.2 Learning Outcomes

Upon successful completion of this course you will be able to:

1. Apply knowledge of common computer hardware and software elements and explain how they interact with each other
2. Operate digital data and construct and evaluate digital logic components and processes
3. Demonstrate knowledge of the workings of the processor, storage, common hardware components, and basic operating system services
4. Understand the basic concepts of common networking models and the underlying networking hardware

5. Outline the basic concepts relating to security mechanisms and security policy

2.3 Generic skills

For further details on the Generic Skills please refer to the Graduate Generic Skills and Capabilities policy.

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

Generic Skills	Taught	Practised	Assessed
Written Communication		Yes	Yes
Oral Communication		Yes	
Information Literacy	Yes	Yes	Yes
Secondary Research			
Critical and Innovative Thinking	Yes	Yes	Yes
Academic Integrity	Yes	Yes	Yes
Self Directed Learning			
Team Work			
Cultural Intelligence			
English Language Proficiency			

3. Learning Resources

3.1 Required Resources

There are no required resources for this course.

3.2 Recommended Resources

1. Barry G. Blundel, "Computer Systems and Networks", 1st ed., Thomson Learning, 2007
2. Behrouz A. Forouzan and Firouz Mosharaff, "Foundations of Computer Science: From Data Manipulation to Theory of Computation", 2nd ed., Cengage Learning, 2007.
3. J. Glenn Brookshear, "Computer Science: An Overview" 10th ed, Addison-Wesley, 2007
4. Irv Englander, "The Architecture of Computer Hardware and Systems Software - An Information Technology Approach." 3rd ed, John Wiley and Sons, 2003.
5. Andrew S. Tanenbaum, "Structured Computer Organization." 4th ed., Prentice Hall, 1999.
6. Randal E. Bryant and David O'Hallaron, "Computer Systems: A Programmer's Perspective", Prentice Hall, 2003.
7. Carl Hamacher, Zvonko Varanesic, and Safwat Zaky, "Computer Organization", 5th ed, McGraw Hill, 2002.

3.3 College Support Services and Learning Resources

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

Digital Library – Databases to which Griffith College students have access to through the Griffith Library Databases.

MyStudy – there is a dedicated website for this course via MyStudy on the Griffith College Portal.

Academic Integrity Tutorial - this tutorial helps students to understand what academic integrity is and why it matters. You will be able to identify types of breaches of academic integrity, understand what skills you will need in order to maintain academic integrity, and learn about the processes of referencing styles.

Services and Support provides a range of services to support students throughout their studies including personal support such as Counselling; Academic support; and Welfare support.

Jobs and Employment in the Student Hub can assist students with career direction, resume and interview preparation, job search tips, and more.

IT Support provides details of accessing support, information on s numbers and internet access and computer lab rules.

3.4 Other Learning Information

Attendance

You are expected to attend all lectures and tutorials and to actively engage in learning during these sessions. You are expected to bring all necessary learning resources to class such as the required textbook and /or Workbook. In addition, you may BYOD (bring your own device) to class such as a laptop or tablet. This is not a requirement as computer lab facilities are available on campus, however, the use of such devices in the classroom is encouraged with appropriate and considerate use principles being a priority.

Preparation and Participation in Class

In order to enhance learning, prepare before lectures and tutorials. Read the relevant section of your text book before a lecture, and for a tutorial read both the textbook and the relevant lecture notes. If you have been given tutorial exercises, make sure you complete them. Active participation in lectures and tutorials will improve your learning. Ask questions when something is unclear or when you want to bring some issue to your lecturer or tutor's attention; respond to questions to test your knowledge and engage in discussion to help yourself and others learn.

Consultation Sessions

Teachers offer extra time each week to assist students outside the classroom. This is known as 'consultation time.' You may seek assistance from your teacher on email or in person according to how the teacher has explained this to the class. Attendance during consultation time is optional but you are encouraged to use this extra help to improve your learning outcomes.

Course Materials

Lecture notes will be made available to you in MyStudy on the Griffith College Portal and you are advised to either print these out and bring them to each class so that extra notes can be added or BYOD (bring your own device) and add extra notes digitally.

Self-Directed Learning

You will be expected to learn independently. This means you must organise and learn the course content even when you are not specifically asked to do so by your lecturer or tutor. This involves revising the weekly course material. It also means you will need to find additional information for some assessment items beyond that given to you in textbooks and lecture notes, and to construct your own response to a question or topic. All of this requires careful planning of your time. Expect to spend, on average, at least 10 hours per week including class time for each of your courses.

Program Progression

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, and that GPA is maintained at equal to or greater than 3.5 [please see Griffith College Policy Library - Program Progression Policy - for more information].

Teacher and course Evaluation

Your feedback is respected and valued by your lecturers and tutors. You are encouraged to provide your thoughts on the course and teaching, both positive and critical, directly to your lecturer and tutor or by completing course and lecturer evaluations via Griffith College's evaluation tool whenever these are available.

4. Learning and Teaching Activities

4.1 Weekly Learning Activities

Week	Topic	Activity	Readings	Learning Outcomes
1	Introduction	Refer to lesson plan 1 on the portal	Recommended reading: Blundel (2007), Chapter 1	1
2	Data representations	Refer to lesson plan 2 on the portal	Recommended reading: Blundel (2007), Chapter 4	1, 2
3	Digital logic	Refer to lesson plan 3 on the portal	Recommended reading: Blundel (2007), Chapter 2	1, 2
4	Processors & memory organisation	Refer to lesson plan 4 on the portal	Recommended reading: Blundel (2007), Chapter 3	1, 2, 3
5	Instruction sets	Refer to lesson plan 5 on the portal	Recommended reading: Blundel (2007), Chapter 3	2, 3
6	Assembly language	Refer to lesson plan 6 on the portal	Recommended reading: Blundel (2007), Chapter 7	2, 3
7	Assembly language	Refer to lesson plan 7 on the portal	Recommended reading: Blundel (2007), Chapter 7	2, 3
8	Operating systems and applications	Refer to lesson plan 8 on the portal	Recommended reading: Blundel (2007), Chapter 8	1, 3
9	Computer networks	Refer to lesson plan 9 on the portal	Recommended reading: Blundel (2007), Chapter 9	1, 4
10	Packet transmission	Refer to lesson plan 10 on the portal	Recommended reading: Blundel (2007), Chapter 10	1, 4
11	Cryptography, hashing, and digital certificates	Refer to lesson plan 11 on the portal	Recommended reading: Blundel (2007), Chapter 12	1, 4, 5
12	Course review	Refer to lesson plan 12 on the portal		1, 2, 3, 4, 5

5. Assessment Plan

5.1 Assessment Summary

Item	Assessment Task	Weighting	Learning Outcomes	Due Date
1	Lab 1: Binary arithmetic	2%	1, 2	Week 3
2	Lab 2: data representation & logical operations	2%	1, 2	Week 4
3	Lab 3: memory addressing	2%	1, 2	Week 5
4	Lab 4: error detection and correction	2%	1, 2	Week 6
5	Lab 5: assembly language	3%	1, 2, 3	Week 7
6	Lab 6: assembly language	3%	1, 2, 3	Week 8
7	Lab 7: operating systems	3%	3	Week 9
8	Lab 8: networking	3%	4	Week 11
9	Mini Test 1: data representation, digital logic, memory addressing	5%	1, 2, 3	Week 4
10	Mini Test 2: subnetworking	5%	4	Week 11
11	Project: fetch-decode-execute cycle	20%	1, 2, 3	Week 12
12	Final Exam: all topics	50%	1, 2, 3, 4, 5	Exam Week

5.2 Assessment Detail

All assessment in this course is individual assessment.

Labs

Title: Learning Activities/ Laboratory Exercises

Type: Academic development holistic assessment
Learning Outcomes Assessed: 1, 2, 3, 4, 5
Due Date:
In Laboratory class weeks 3, 4, 5, 6, 7, 8, 9, 11
Weight: 20%
Marked out of: 20
Task Description:

(Length = 1hr)

The assessed labs are incremental assessment items that are performed during tutorials. The rationale behind these labs is to incremental assessment that is performed during workshop/ laboratory times. The rationale behind this assessment item is to provide students with practice in good study habits and to reinforce understanding of the lecture and workshop material. This is a formative item of assessment. Unless at least 5 of the weekly lab exercises are performed, this assessment item will be considered not to have been submitted and

no mark will be recorded. The assessed labs will be held weekly as per the schedule above. This is a formative type of assessment.

Criteria & Marking:

Accuracy: Correct answer
Communication of methods and steps: Satisfactory communication of correct methods and steps.
Learning Activities will be evaluated in the workshop time each of the weeks mentioned above (total of 8 weeks for 20 marks in total).
20% weighting.

This assessment item:

- is a school based activity
- is an individual activity
- does not include a self assessment activity

Mini Tests

Title: Mini Test 1

Type: Test or quiz
Learning Outcomes Assessed: 1, 2
Due Date:
Week 4
Weight: 5%
Marked out of: 10
Task Description:
The Mini Test 1 will be conducted during Week 4. It will cover lecture material from Weeks 1 to 3.
Criteria & Marking:
Accuracy: Correct answer
5% weighting.
Submission: written test

This assessment item:

- is a school based activity
- is an individual activity
- does not include a self assessment activity
- does not have a re-attempt provision

Title: Mini Test 2
Type: Test or quiz
Learning Outcomes Assessed: 1, 2, 3
Due Date:
Week 11
Weight: 5%
Marked out of: 10
Task Description:
The Mini Test 2 will be conducted during Week 11. It will cover material from Weeks 4 to 10.
Criteria & Marking:
Accuracy: Correct answer
5% weighting.
Submission: written test

This assessment item:

- is a school based activity
- is an individual activity
- does not include a self assessment activity
- does not have a re-attempt provision

Project

Title: Project

Type: Assignment - Practice-based Assignment
Learning Outcomes Assessed: 1, 2, 3

Due Date:
5pm of Friday Week 12
Weight: 20%
Marked out of: 100
Task Description:
The project tests the students' ability to apply and synthesise the knowledge and skills obtained in the lecture and laboratory sessions. You are required to perform the fetch-decocde-execute cycle on a stored program in memory using the CPU registers and provided memory addresses and values. This is a summative item of assessment. You will be required to explain your submission to teaching staff as part of the assessment process.
Criteria & Marking:
Accuracy: Correct answer
Communication of methods and steps: Satisfactory communication of correct methods and steps.
20% weighting.
Submission: online submission and in-person interview

This assessment item:
- is a school based activity
- is an individual activity
- does not include a self assessment activity
- does not have a re-attempt provision

Final Exam

Title: Final Exam

Type: Exam - constructed response
Learning Outcomes Assessed: 1, 2, 3, 4, 5
Due Date:
Examination Period
Weight: 50%
Marked out of: 50
Perusal: 10 minutes
Duration: 180 minutes
Format: Closed Book
Task Description:
The final exam is a summative assessment item that tests the student's grasp of the theoretical aspects of
the course.
Criteria & Marking:
Accuracy: Correct answer
Communication of methods and steps: Satisfactory communication of correct methods and steps.

This assessment item:
- is a centrally organised activity
- is an individual activity
- does not include a self assessment activity

You are responsible for submitting all assessment on time and in the correct format as specified by the lecturer.

You are responsible for maintaining copies of assessment drafts prior to submission (including electronic backups). No extensions or special consideration will be given if you are unable to submit an assessment because of data loss or corruption. No extensions or special consideration will be given if you are unaware of assessment deadlines.

5.3 Late Submission

An assessment item submitted after the due date, without an approved extension from the Course Coordinator, will be penalised. The standard penalty is the reduction of the mark allocated to the assessment item by 5% of the maximum mark applicable for the assessment item, for each working day or part working day that the item is late. Assessment items submitted more than five working days after the due date are awarded zero marks.

Please refer to the Griffith College website - Policy Library > Assessment Policy for guidelines and penalties for late submission.

5.4 Other Assessment Information

Retention of Originals

You 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.

Requests for extension

To apply for an extension of time for an assignment, you must submit an Application for Extension of Assignment form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. Griffith College Student Medical Certificate]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

Return of Assessment Items

1. Marks awarded for in-trimester assessment items, except those being moderated externally with Griffith University, will be available on the Student Portal within fourteen [14] days of the due date. This does not apply to the final assessment item in this course (marks for this item will be provided with the final course result).

2. Students will be advised of their final grade through the Student Portal. Students can review their exam papers after student grades have been published (see relevant Griffith College Fact Sheet for allocated times at Support> Factsheets). Review of exam papers will not be permitted after the final date to enrol.

3. Marks for **all** assessment items including the final exam (if applicable) will be recorded in the Moodle Course Site and made available to students through the Moodle Course Site.

The sum of your marks overall assessment items in this course does not necessarily imply your final grade for the course. Standard grade cut off scores can be varied for particular courses, so you need to wait for the official release of grades to be sure of your grade for this course.

6. Policies & Guidelines

Griffith College assessment-related policies can be found in the Griffith College Policy Library which include the following policies:

Assessment Policy, Special Consideration, Deferred Assessment, Alternate Exam Sitting, Medical Certificates, Academic Integrity, Finalisation of Results, Review of Marks, Moderation of Assessment, Turn-it-in Software Use. These policies can be accessed using the 'Document Search' feature within the Policy Library

Academic Integrity Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-

meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

In the case of an allegation of a breach of academic integrity being made against a student he or she may request the guidance and support of a Griffith College Student Learning Advisor or Student Counsellor.

Please ensure that you are familiar with the Griffith College Academic Integrity Policy; this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Griffith College website - Policy Library > Academic Integrity Policy

Reasonable Adjustments for Assessment – The Disability Services policy

The Disability Services policy (accessed using the Document Search' feature with the Policy Library) outlines the principles and processes that guide the College in making reasonable adjustments to assessment for students with disabilities while maintaining academic robustness of its programs.

Risk Assessment Statement

There are no out of the ordinary risks associated with this course.

Note: For all Diploma level programs, Griffith College acknowledges content derived from Griffith University.