



The University of Southern Queensland

## Course specification

<b>Description: Principles of Information Security</b>						
Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CIS	2005	54522	2, 2006	ONC	1.00	Toowoomba

<b>Academic group:</b>	FOBUS
<b>Academic org:</b>	FOB005
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	029901

### STAFFING

Examiner: Anita Ryle  
Moderator: Shelly Grist

### REQUISITES

Pre-requisite: CIS1000

### RATIONALE

The amount of data and information stored electronically is growing exponentially. At the individual organisational and societal level there is an increasing reliance on information systems to provide this information with the appropriate level of confidentiality, integrity and availability. Hence it is vitally important that business analysts recognise the need to ensure that corporate information and information systems are appropriately secure from unintentional and intentional threats from both authorised and unauthorised users while still maintaining a high level of service.

### SYNOPSIS

The increased reliance on technology to enhance business functions means students must have an understanding of the vulnerabilities and threats which systems face and the controls or countermeasures which can prevent or limit their effect. In this course students will be expected to apply structured risk analysis techniques to determine vulnerability, threat and control profiles for an organisation. Students will then need to develop an Information Security Management Plan which reflects the findings of risk analysis. The ongoing commitment to information systems security that organisations need to take is also stressed in this course.

### OBJECTIVES

The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parentheses after each objective. On successful completion of this course, students should be able to:

1. have a strong understanding of the vulnerabilities and threats relating to information systems, the controls which can be implemented to mitigate their effect, and relevant standards (Assignment, Examination)
2. understand the need for information systems security (Assignment, Examination)
3. relate the three security goals of confidentiality, integrity and availability and four key principles of computer security to business systems (Assignment, Examination)
4. demonstrate a good understanding of vulnerabilities, threats and related controls relating to physical security, software security, operating system security and database security (Assignment, Examination)
5. have a basic understanding of cryptography, including knowledge of DES, AES and public key encryption systems (Assignment, Examination)
6. discuss advantages and disadvantages of various methods of user authentication and recognise that a combination of methods is preferable (Assignment, Examination)
7. describe various network related threats and controls as covered in this course (Examination)
8. discuss specific e-commerce security issues as covered in this course (Examination)
9. recognise that legal and ethical issues can play a part in information systems security (Examination)
10. perform risk analysis techniques to determine vulnerability and threat profiles for an organisation (Assignment, Examination)
11. identify techniques for treating vulnerability and threat profiles to minimise their effect for an organisation (Assignment, Examination)
12. provide well written reports on the findings of risk analysis projects of various business computer systems in the form of an information security management plan (Assignment)
13. recognise the ongoing commitment to information systems security that is imperative for organisations to maintain reasonably secure information systems and understand the concept of continual improvement (Assignment, Examination).

## TOPICS

	Description	Weighting (%)
1.	Key concepts and physical security	10.00
2.	Cryptography	8.00
3.	Software security	8.00
4.	Operating system security and user authentication	8.00
5.	Information security management system	8.00
6.	Information security risk analysis	8.00
7.	Information security risk treatment	8.00
8.	Network security threats	8.00
9.	Network security controls	10.00
10.	Database security	8.00
11.	Electronic commerce security issues	8.00
12.	Legal and ethical issues	8.00

## **TEXT and MATERIALS required to be PURCHASED or ACCESSED**

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

All students will need access to a PC word processing and spreadsheet package. Any package will suffice.

CIS2005 study package available from the USQ Bookshop.

Students also need MS Windows to view multimedia materials.

Pfleeger, CP & Pfleeger, SL 2003, *Security in computing*, 3rd edn, Prentice-Hall, Upper Saddle River, New Jersey.

Summers, J & Smith, B 2006, *Communication skills handbook: how to succeed in written and oral communication*, 2nd edn, John Wiley & Sons, Milton, Queensland.

## **REFERENCE MATERIALS**

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Bragg, R, Rhodes-Ousley, M & Strassberg, K 2004, *Network security: the complete reference*, McGraw-Hill/Osborne, New York.

Campbell, P, Calvert, B & Boswell, S 2003, *Security+ guide to network security fundamentals*, Thomson Course Technology, Boston, Massachusetts.

Cheswick, WR, Bellovin, SM & Rubin, AD 2003, *Firewalls and Internet security: repelling the wily hacker*, 2nd edn, Addison-Wesley, Boston, Massachusetts.

Erbschloe, M 2003, *Guide to disaster recovery*, Course Technology, Boston, Massachusetts.

Parker, DB 1998, *Fighting computer crime: a new framework for protecting information*, John Wiley & Sons, New York.

Schneier, B 2004, *Secrets and lies: digital security in a networked world*, 2nd edn, John Wiley & Sons, New York.

## **STUDENT WORKLOAD REQUIREMENTS**

ACTIVITY	HOURS
Laboratory or Practical Classes	26.00
Lectures	26.00
Private Study	110.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg(%)	Due date
ASSIGNMENT	100.00	30.00	18 Sep 2006
3 HOUR EXAMINATION	100.00	70.00	END S2 (see note 1)

### NOTES

1. The examination is scheduled to be held in the end-of-semester examination period. Students will be advised of the official examination date after the timetable has been finalised.

## IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:  
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:  
To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks. (Depending upon the requirements in Statement 4 below, students may not have to satisfactorily complete each assessment item to receive a passing grade in this course.)
- 3 Penalties for late submission of required work:  
If students submit assignments after the due date without prior approval then a penalty of 20% of the total marks available for the assignment may apply for each working day late.
- 4 Requirements for student to be awarded a passing grade in the course:  
To be assured of receiving a passing grade a student must achieve at least 40% for the assignment, achieve a mark of at least 50% for the examination, and at least 50% of the total weighted marks available for the course. Students who do not qualify for a passing grade may, at the discretion of the Examiner, be awarded a supplementary examination and/or assigned additional work to demonstrate to the Examiner that they have achieved the required standard. It is expected that such students will have gained at least 45% of the total marks available for all summative assessment items.
- 5 Method used to combine assessment results to attain final grade:  
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.
- 6 Examination information:  
This is a restricted examination. Candidates are allowed access to specific materials during the examination. The only materials that candidates may use in the examination for this course are (i) Writing materials: non-electronic and free from material which could give the student an unfair advantage in the examination; (ii) Translation dictionaries: with the Examiner's approval, candidates may, take an appropriate non-electronic translation dictionary into the examination. This will be subject to perusal and, if it is found to contain annotations or markings that could give the candidate an unfair advantage, it may be removed from the candidate's possession until the appropriate disciplinary action is completed.

- 7 Examination period when Deferred/Supplementary examinations will be held:  
Any Deferred or Supplementary examinations for this course will be held during the next examination period.
- 8 University Regulations:  
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm>. Students should also read the Faculty of Business Guide to Policies and Procedures of the Faculty which can be found at the URL <http://www.usq.edu.au/handbook/current/buspolproc.html>.

## **ASSESSMENT NOTES**

- 1 Assignments: (i) Assignments must be submitted in the drop box located at the Faculty of Business reception area on level 4 of L-Block by 5:00PM on the due date. (ii) Students must retain a copy of each assignment submitted for assessment. This must be produced within 24 hours if required by the Examiner. (iii) The Examiner may grant an extension of the due date of an assignment in extenuating circumstances. Students may apply for an extension before the due date or include an application with the submitted assignment after the due date. Such applications should be in writing and include supporting documentary evidence. The authority for granting extensions rests with the relevant Examiner. (iv) The Examiner will normally only accept assessments that have been written, typed or printed on paper-based media. (v) In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.
- 2 Course weightings: Course weightings of topics should not be interpreted as applying to the number of marks allocated to questions testing those topics in an examination paper.
- 3 Guidelines for assignments: Unless otherwise directed by the Examiner, all written and oral assignments submitted by students must conform to the guidelines laid out in the 'Communication skills handbook: How to succeed in written and oral communication'. Any work not prepared in accordance with these guidelines may be subject to penalty or requirement for resubmission.
- 4 Make-up work: Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the Examiner, a student will be able to achieve the remaining objectives of the course after a period of non-directed personal study.
- 5 Deferred work: Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded: IDS (Incomplete - Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).

## **OTHER REQUIREMENTS**

- 1 Learning resources: Prescribed texts and materials (see above); recommended reference materials (see above); printed Introductory Book\*, Study Book/s\*, and Book/s of Selected Readings\*; and course Website accessible via USQConnect. \*part of the study package available from the USQ Bookshop
  - 2 E-mail and Internet Access: Students will require access to e-mail and Internet access to USQConnect for this course.
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