University of Tasmania  
School of Computing  

KXA453 Advanced Computer Security  
Unit Outline  
Semester 1, 2003  

Prerequisites  
None  

Corequisites  
None  

Unit Weight  
12.5  

Unit Coordinator  
Jacky Hartnett  
Room V120  
(03) 6324 3392  
J.Hartnett@utas.edu.au  

Scheduled Teaching Sessions  

- Newnham, Launceston  
- Sandy Bay, Hobart  

Seminars: 3 hr/wk  

The Unit Timetable can be accessed from the Study Resources section of the School website. (http://www.comp.utas.edu.au/app/studyresources.jsp).  

All sessions are delivered via video conference. There will be 2 times 2 hour sessions in each of the weeks when student papers are read.  

Unit Website  

The unit website is accessed from http://webct.utas.edu.au:8900. You will need to use your email pop account username and password to log on to the WebCT system. Once authenticated by the system your personalised MyWebCT area will be displayed. It contains links to the websites that you have permission to access - including the website for this unit.  

This unit is Web Dependent: content. This means that you will need to use the Web for this unit. The unit website contains unit information and resources. You will be informed at the seminars when and if essential material is available only via this website.  

If you are not able to access the unit website, please contact the University IT help desk:  

- Level 2 Morris Miller Library, Sandy Bay Campus; Level 0 Building A, Newnham Campus.  
- Website: http://www.utas.edu.au/helpdesk  
- Telephone: 6226 1818  
- Fax: 6226 7669  
- Email: HelpDesk@utas.edu.au  

Prescribed Text  


Provider  

School of Computing - Faculty of Science, Engineering, and Technology. http://www.comp.utas.edu.au  

Useful University Web Links  

Information and Resources for 'Current Students' are available on the university website at: http://www.utas.edu.au/students/ It includes useful links such as:  


OVERVIEW  

Introduction  

Provides a detailed exploration of the techniques available to protect computer systems against possible threats and to investigate further methods of protecting computer systems. Topics include the use of cryptography to achieve security goals, operating system features, security packages and network security. Students have the opportunity to explore current issues in security and develop resources to enable them
to keep abreast of these as they change.

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

1. Understand and apply the principles which are used in cryptology
2. Discuss the concepts and models used in operating system security
3. Discuss the protocols and key management issues relevant to network security
4. Discuss the possible methods of making computer networks secure, including the use of firewalls
5. Discuss security problems related to the use of the Internet
6. Research and prepare papers on provided topics and discuss the issues these raise.

Unit Content

- Revision of Basics:
  - Encryption algorithms
  - Authentication
  - Operating system security
- Operating system security models
- Secure network protocols
- Internet security issues
- Other topics may include:
  - firewalls
  - Java security

For more information see the section titled 'Content' on the unit website.

Generic Skills

The university has defined a set of generic graduate attributes expected in its graduates, http://www.admin.utas.edu.au/academic/acservices/meetings/Senate/Appendix/3_01D1.doc Your course is designed to enable you to develop generic skills that are valued in, and expected of, graduates. These are skills that you will need to develop over time. Hence you are encouraged to look for opportunities, as you study each unit, to reflect on and improve these skills.

This unit will involve reading and writing academic papers.

LEARNING AND TEACHING

Approach to Learning

You are expected to spend about 130 hrs studying in this unit - this includes attendance at scheduled teaching sessions. (For a 13 week semester this is, on average, 10 hr/wk.) This is the amount of study time that the 'typical' student will need to reach the level of competence and understanding required to fulfil the unit objectives.

You are expected to:

- attend all scheduled seminars, unless otherwise notified by the unit coordinator
- prepare for, and actively participate in seminars
- complete the assigned learning tasks
- review what has been learnt
- complete assessment items and submit them on time
- access and be familiar with the information and resources available on the unit website
- seek help from teaching staff if you have any questions or difficulties in studying this unit

You are encouraged to read the university's Code of Conduct for Teaching and Learning. Part A describes the 'Responsibility of the University to Students' and part B describes the 'Responsibilities of Students to the University'. http://www.admin.utas.edu.au/HANDBOOKS/UTASHANDBOOKS/RULES/CTEA.html

Schedule

See the 'Schedule' section on the unit website for the timetable and associated resources.

Teaching and Support Staff

Teaching Staff

Unit Coordinator:

Lecturer: Jacky Hartnett
E-Mail: J.Hartnett@utas.edu.au
Phone: (03) 6324 3392
Room: V120
Contact the School Help Desk if you have any queries or problems with accessing, using, or printing from the computers in the School of Computing labs.

- **Hobart**: the Help Desk is located near the School's reception desk and is open in the morning from 9-11, and in the afternoon from 12-1 and 2-4, Monday-Friday. The phone number is 6226 2960.
- **Launceston**: the Help Desk is located near the entrance to the computing labs and is open in the morning from 10-12, and in the afternoon from 2-4:30, Monday-Thursday. On Fridays it is open from 10-12 in the morning and 2-4 in the afternoon. The phone number is 6324 3654.
- **Burnie**: the computer labs at the NWC are maintained by ITS. Please contact the University Help Desk for assistance. The 6 Macs are maintained by the School of Computing. If you have a query or problem that is specific to the School of Computing please phone the School of Computing Help Desk in Launceston.

**University Services and Support**

The University has staff available to assist you, such as the:

- Learning Development Advisor
- Student Counselor
- Careers Advisor
- Disability Officer

For more information and contact details see the Services and Support section on the University 'Current Students' web page. [http://www.utas.edu.au/students/](http://www.utas.edu.au/students/)

**Resources**

**Unit Website**

The unit website contains unit information and resources. You will be informed at the seminars when and if essential material is available only via this website.

**Prescribed Text**


**Readings**


Information about other references and access to them will be discussed in the seminars.

**Software**

The software that you will need to access the unit website and to study this unit, including general purpose software such as word processors, is provided on the computers in the School's computing labs. If you intend to use software on other computers please check that the versions are compatible.

It is expected that all students will install PGP on their school machines and use it for their communications about the unit. PGP software is available on the 2003 School of Computing CD that may be borrowed or purchased from the Help Desk.

**Computing Facilities**

The School has PC labs (Windows 2000 Professional), Mac labs (Mac OS-X 10.2), Unix labs (linux / X-windows), and Networking labs at the Newnham and Sandy Bay campuses. It also maintains 6 Macs (Mac OS-X 10.2) at the NW Centre.

If you have not used these facilities before please contact the School Help Desk to organise you account details. If you would like to access the facilities at the Newnham and Sandy Bay campuses after hours please contact the School Help Desk.

Please contact the School Help Desk if you have difficulty accessing or using these facilities.

**Ethical Use of Facilities**

Use of computing facilities provided by the School is subject to the School's Ethics Guidelines - [http://www.comp.utas.edu.au/app/ethics.jsp](http://www.comp.utas.edu.au/app/ethics.jsp). Copies of the guidelines are also available in all School labs. The School's facilities may only be used for study-related purposes, and may not be used for personal gain. The playing of games is strictly prohibited in all labs at all times. Before being granted access to the School's facilities, you will be required to sign a declaration that you have read and understand these guidelines, and that you will abide by them. Disciplinary action may be taken against students who violate the guidelines.
Occupational Health and Safety

The university is committed to providing a safe and secure teaching and learning environment. For more information see http://www.admin.utas.edu.au/hr/ohs/pol_proc/ohs.pdf

ASSESSMENT

Assessment Items

Item 01

Title: Paper 1  
Type: In-Semester - individual assignment  
Weighting: 7.5%  
Due: week 3/4

Due dates will be negotiated in week 1

Item 02

Title: Paper or Task 2  
Type: In-Semester - individual assignment  
Weighting: 7.5%  
Due: week 7

Due dates will be negotiated in week 1

Item 03

Title: Paper or Task 3  
Type: In-Semester - individual assignment  
Weighting: 7.5%  
Due: Week 10

Due dates will be negotiated in week 1

Item 04

Title: Paper 4  
Type: In-Semester - individual assignment  
Weighting: 7.5%  
Due: week 13

Due dates will be negotiated in week 1

Item 05

Title:  
Type: Formal Examination  
Weighting: 70%  
Due: University Examination Period

See the 'Assessment' section in unit website for more detailed information about assessment items.

In-Semester Assessment

Unless specifically stated in the specification of the assessment item provided on the unit website, it is required that:

- work submitted by a student is the work of that student alone OR
- where the assessment item is to be completed by a group of students, the work submitted by the group of students is the work of that group of students alone.

Plagiarism

Plagiarism is taking and using someone else's thoughts, writings, or inventions and representing them as your own; for example downloading an essay from a cheat site, copying another student's work, or using an author's words or ideas without citing the source. Plagiarism is a form
of cheating. It is a University offence punishable by a range of penalties including a fine or deduction/cancellation of marks and, in the most serious of cases, exclusion from a unit, a course, or the University. When in doubt consult your lecturer or tutor. Details of penalties that can be imposed are available in the Ordinance of Student Discipline or at http://www.utas.edu.au/plagiarism.

Referencing

The university document on plagiarism contains information about referencing the work or ideas of others. The preferred text referencing systems for the School is the Harvard system (also referred to as the author-date system). For information on the Harvard system see http://www.utas.edu.au/library/assist/gposa/gposa2.html.

Submissions

All in-semester assignment submissions (including electronic submissions) are to include an Assignment Cover Sheet which includes a statement confirming that the submission is your own work. If this undertaking is not signed, the assignment will not be marked. The Assignment Cover Sheet is available from the School Help Desk in Launceston and Hobart, and on the School's web site http://www.comp.utas.edu.au/app/studyresources.jsp.

Extensions

Assessment items will not be accepted after the due date except under the conditions stated in the school policy on late assessment. http://www.comp.utas.edu.au/app/late_assess.jsp

Formal Examination

The formal examination is conducted by the University Registrar. The 'Current Students' section on the university website contains information about the conduct of, and timetable for, formal examinations.

Final Grade

Overall assessment will be based on the student's performance throughout the semester as well as in a formal examination. In order to achieve a pass (or better) result, a student must obtain:

1. at least 40% of the total mark for in-semester assessment items
2. at least 40% of the mark for the formal examination
3. at least 50% of the overall mark

Passing grades will be awarded based on the AVCC guidelines:

- PP at least 50% of the overall mark but less than 60%
- CR at least 60% of the overall mark but less than 70%
- DN at least 70% of the overall mark but less than 80%
- HD at least 80% of the overall mark

The maximum mark awarded to a student who fails the unit will be 44.

For more information, including other grades such as Supplementary and Terminating grades, see the School of Computing's guidelines for assessment - available at: http://www.comp.utas.edu.au/app/assess.jsp