



MONASH University
Information Technology

FIT3105
Security and identity management

Unit Guide

Semester 1, 2011

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

Last updated: 27 Feb 2011

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FIT3105 Security and identity management - Semester 1, 2011

Introduces students to current theory and practice of authentication and identity management. This includes authentication and identity management of system components (software, hardware, data and users); Biometric based Identification systems; Smart card based Identification systems; Crypto-based Identification systems; Kerberos authentication systems; Large population ID management and security; Privacy, security, and efficiency of identification systems.

Mode of Delivery

Caulfield (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

Students will be expected to spend a total of 12 hours per week during semester on this unit.

This will include:

Lectures: 2 hours per week

Tutorials/Lab Sessions: 2 hours per week

and an additional 8 hours for completing lab and project work, private study and revision.

Unit Relationships

Prerequisites

FIT1019 or equivalent

Chief Examiner

Phu Dung Le

Campus Lecturer

Caulfield

Phu Dung Le

Tutors

Caulfield

Harry Ngo and Parisa Mahjoubi

Contact hours: TBA

Learning Objectives

At the completion of this unit students will:

- understand the importance of authentication of system components: data, software, hardware, users and subsystems;
- understand the implementation of different techniques for authentication and identification;
- understand the significance of authentication and identity management in IT security
- understand different authentication and identity management systems;
- understand the role of biometric, smartcards, crypto-based techniques and their issues when applied to authentication process;
- understand existing networked authentication models and protocols for distributed systems, such as kerberos;
- appreciate the role of distributed authentication models and protocols in securing electronic transactions;
- practically gain the experience of system applications identification and authentication;
- practically gain the experience of users identification and authentication;
- practically gain the experience of crypto-based authentication and identification techniques for users, system software and applications;
- practically gain the experience of identifying and authenticating network and system components.

Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:

- a. engage in an internationalised world
- b. exhibit cross-cultural competence
- c. demonstrate ethical values

critical and creative scholars who:

- a. produce innovative solutions to problems
- b. apply research skills to a range of challenges
- c. communicate perceptively and effectively

Assessment Summary

Examination (3 hours): 50%; In-semester assessment: 50%

Assessment Task	Value	Due Date
Assignment 1 - Identifying computer system components and evaluating	20%	Week 8, Monday, 4pm

authentication methods

Assignment 2 - Design a digital ID system 20% Week 12, Friday, 4pm

Laboratory work 10% You are expected to complete your work each lab session however it depends on the condition of the lab (e.g computers or devices may not work).

Examination 1 50% To be advised

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach provides facilitated learning, practical exploration and peer learning.

Feedback

Our feedback to You

Types of feedback you can expect to receive in this unit are:

- Graded assignments with comments
- Interviews

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through SETU, Student Evaluation of Teacher and Unit. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, and on student evaluations, see:

<http://www.monash.edu.au/about/monash-directions/directions.html>

<http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html>

Previous Student Evaluations of this unit

If you wish to view how previous students rated this unit, please go to

<https://emuapps.monash.edu.au/unitevaluations/index.jsp>

Unit Schedule

Week	Date*	Activities	Assessment
0	21/02/11		No formal assessment or activities are undertaken in week 0
1	28/02/11	Introduction to authentication and identity management	

2	07/03/11	Cryptography for authentication and identification	
3	14/03/11	Cryptography for authentication and identification (continued)	
4	21/03/11	Smart card based authentication and identity systems	
5	28/03/11	Biometric technology for authentication and identification	
6	04/04/11	Crypto-based identity management systems	
7	11/04/11	Strong authentication for computer system components and mobile users	
8	18/04/11	Authentication and identity systems: design and implementation	Assignment 1 due Week 8, Monday, 4pm
Mid semester break			
9	02/05/11	Authentication and identity systems: design and implementation (continued)	
10	09/05/11	Large scale identity systems: security, privacy and efficiency	
11	16/05/11	Large scale identity systems: security, privacy and efficiency (continued)	
12	23/05/11	Research in authentication and identity management technologies	Assignment 2 due Week 12, Friday, 4pm
	30/05/11	SWOT VAC	No formal assessment is undertaken in SWOT VAC

*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

Assessment Policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit

Assessment Tasks

Participation

Lab/tutorial sessions are compulsory.

• Assessment task 1

Title:

Assignment 1 - Identifying computer system components and evaluating authentication methods

Description:

Part 1 - Describe in detail the existing methods of identifying all computer components, find problems with them and make suggestions for better methods.

Part 2 - Study existing authentication methods, find problems with them and make suggestions for better methods.

Weighting:

20%

Criteria for assessment:

You need to be able to understand the theory and demonstrate your practical work to your tutor.

If you fail to understand what you have done you will get a ZERO for the assignment.

If you can demonstrate your practical work, but understand only a bit of the theory, you will get a Pass at the most.

If you can demonstrate your practical work, but understand only 25% of the theory, you will get a Credit at the most.

If you can demonstrate your practical work, but understand only 50% of the theory, you will get a Distinction at the most.

If you can demonstrate your practical work, and understand the theory well, you will get a High Distinction.

Due date:

Week 8, Monday, 4pm

Remarks:

You are required to read the assignment specification for full details. The Unit Guide only gives brief descriptions of the assignments.

• **Assessment task 2**

Title:

Assignment 2 - Design a digital ID system

Description:

You are required to study existing technologies for authentication and identification, and design a digital ID system using smart cards, biometrics and cryptographic methods.

Weighting:

20%

Criteria for assessment:

You need to be able to understand your work.

If you fail to explain what you have done you will get a ZERO for the assignment.

Due date:

Week 12, Friday, 4pm

Remarks:

You are required to read the assignment specification for full details. The Unit Guide only gives brief descriptions of the assignments.

• **Assessment task 3**

Title:

Laboratory work

Description:

You are required to:

1. Understand computer system components and the methods to identify those components in practice in both Unix and Windows environments.
2. Understand and practically know how crypto and biometrics are used with smart cards.
3. Understand and practically know how private and public key systems can be used for authentication and identification.

Weighting:

10%

Criteria for assessment:

You need to be able to understand the theory and demonstrate your practical work to your tutor.

If you fail to understand what you have done you will get a ZERO for the assignment.

If you can demonstrate your practical work, but understand only a bit of the theory, you will get a Pass at the most.

If you can demonstrate your practical work, but understand only 25% of the theory, you will get a Credit at the most.

If you can demonstrate your practical work, but understand only 50% of the theory, you will get a Distinction at the most.

If you can demonstrate your practical work, and understand the theory well, you will get a High Distinction.

Due date:

You are expected to complete your work each lab session however it depends on the condition of the lab (e.g computers or devices may not work).

Examinations

• **Examination 1**

Weighting:

50%

Length:

3 hours

Type (open/closed book):

Closed book

Electronic devices allowed in the exam:

None

Assignment submission

Assignment coversheets are available via "Student Forms" on the Faculty website:

<http://www.infotech.monash.edu.au/resources/student/forms/>

You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process:

<http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html>.

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:

<http://policy.monash.edu.au/policy-bank/academic/education/index.html>

Key educational policies include:

- Plagiarism
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html>)
- Assessment
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-p>)
- Special Consideration
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h>)
- Grading Scale
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html>)
- Discipline: Student Policy
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html>)
- Academic Calendar and Semesters (<http://www.monash.edu.au/students/key-dates/>);
- Orientation and Transition (<http://www.infotech.monash.edu.au/resources/student/orientation/>);
and
- Academic and Administrative Complaints and Grievances Policy
(<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy>)

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at www.monash.edu.au/students The Monash University Library provides a range of services and resources that enable you to save time and be more effective in your learning and research. Go to <http://www.lib.monash.edu.au> or the library tab in my.monash portal

for more information. Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis

- Website: <http://adm.monash.edu/sss/equity-diversity/disability-liaison/index.html>;
- Telephone: 03 9905 5704 to book an appointment with a DLO;
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus.

Other Information

Recommended books, articles, and Internet resources will be advised.