



<b>Title:</b>	Computer Security Principles <b>APPROVED</b>
<b>Long Title:</b>	Computer Security Principles
<b>Module Code:</b>	COMP6035
<b>Duration:</b>	1 Semester
<b>Credits:</b>	5
<b>NFQ Level:</b>	Fundamental
<b>Field of Study:</b>	Computer Science
<b>Valid From:</b>	Semester 1 - 2015/16 ( September 2015 )
<b>Module Delivered in</b>	<a href="#">6 programme(s)</a>
<b>Module Coordinator:</b>	Sean McSweeney
<b>Module Author:</b>	Sean McSweeney
<b>Module Description:</b>	This module introduces the student to security issues surrounding the use of a computing device. It concentrates on the threats associated with computer use and how to defend yourself against those threats.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Describe different types of security threats.
LO2	Recognise the issues involved in being a security aware computer user.
LO3	Compare and contrast common cryptographic protocols.
LO4	Identify threats and use security software to mitigate risk.
LO5	Analyse the issues involved in the secure usage of the Internet.
<b>Pre-requisite learning</b>	
<b>Incompatible Modules</b>	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b>	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
No requirements listed	
<b>Co-requisites</b>	
No Co Requisites listed	

**Module Content & Assessment**

**Indicative Content**

**Information Security Concepts**

The CIA triad, defense in depth, AAA, legal requirements for data protection.

**Malware and Threats**

Viruses, worms, spyware, ransomware, rootkits & backdoors, botnets, social engineering.

**Internet Security Principles**

Safe browsing habits, effective application of personal firewalls, secure and private use of a browser, browser settings and extensions to mitigate threats, cookies, using email securely, spam, privacy issues, effective usage of anti-virus and anti-spyware.

**Personal Device and Network Security**

Protecting privacy, anti-spam, anti-virus, security products, considerations for different device categories, wireless security issues, dangers of open access WiFi – man in the middle attacks, computer backups (on and offline), patch application, BIOS and HDD passwords, use of cloud storage.

**Introduction to Cryptography**

Symmetric, asymmetric, hashing, digital signatures, SSL/TLS, application of encryption to sensitive data, non-repudiation.

**Authentication Fundamentals**

Password selection and entropy, biometrics, multi-factor authentication, password managers and dangerous reuse of passwords, password sharing.

**Assessment Breakdown**

	%
Course Work	50.00%
End of Module Formal Examination	50.00%

**Course Work**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Lab Assessment on basic security principles.	2,4,5	25.0	Week 6
Practical/Skills Evaluation	Lab Assessment on security principles and threats.	1,2,4,5	25.0	Week 11

**End of Module Formal Examination**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	End of Semester Formal Examination	1,2,3,4,5	50.0	End-of-Semester

**Reassessment Requirement**

**Repeat examination**

Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

The institute reserves the right to alter the nature and timings of assessment

**Module Workload**

<b>Workload: Full Time</b>				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Lecture	2.0	Every Week	2.00
Lab	Lab	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Independent & directed learning	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

<b>Workload: Part Time</b>				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lab	Lab	2.0	Every Week	2.00
Lecture	Lecture	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Independent & directed learning	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

## Module Resources

### Supplementary Book Resources

- Dieter Gollmann 2011, *Computer Security* [ISBN: 9780470741115]

*This module does not have any article/paper resources*

### Other Resources

- website: *privacy online*  
<http://privacy.net/>
- website: *12 ways to protect your privacy online*  
<http://www.eff.org/wp/effs-top-12-ways-protect-your-online-privacy>
- website: *Bud logs in: choosing a secure password*  
<http://www.watchguard.com/info/budlogsin.asp>
- website: CERT Coordination Center *Before You Connect a New Computer to the Internet*  
[http://www.cert.org/tech\\_tips/before\\_you\\_plug\\_in.html](http://www.cert.org/tech_tips/before_you_plug_in.html)
- website: CERT Coordination Center *Securing Your Web Browser*  
[http://www.cert.org/tech\\_tips/securing\\_browser/index.html](http://www.cert.org/tech_tips/securing_browser/index.html)
- website: Microsoft *Strong passwords: How to create and use them*  
<http://www.microsoft.com/protect/yourself/password/create.aspx>

**Module Delivered in**

<b>Programme Code</b>	<b>Programme</b>	<b>Semester</b>	<b>Delivery</b>
CR_KSDEV_8	<a href="#"><u>Bachelor of Science (Honours) in Software Development</u></a>	1	Mandatory
CR_KDNET_8	<a href="#"><u>Bachelor of Science (Honours) in Computer Systems</u></a>	1	Mandatory
CR_KITMN_8	<a href="#"><u>Bachelor of Science (Honours) in IT Management</u></a>	1	Mandatory
CR_KITSP_7	<a href="#"><u>Bachelor of Science in Information Technology</u></a>	1	Mandatory
CR_KCOMP_7	<a href="#"><u>Bachelor of Science in Software Development</u></a>	1	Mandatory
CR_KCOME_6	<a href="#"><u>Higher Certificate in Science in Software Development</u></a>	1	Mandatory