UNIVERSITY OF LONDON | INTERNATIONAL PROGRAMMES

Royal Holloway University of London

University of London International Academy
MSc/PG Dip in Information Security
Lead College – Royal Holloway

Secure E Commerce and Other Applications
IYM005 (Option)

Aims
This module aims to put the role of security into perspective and demonstrate how it forms part of a security system within an application. The aim is to illustrate, usually by the use of case studies, how a particular situation may make certain aspects of security important and how an entire system might fit together.

Pre-requisites
None

Essential Reading
- Principles of Information Systems Security: Texts and Cases (Dhillon)

Included as study material once registered on the course.

Assessment
This module is assessed by a two hour unseen written examination.

Learning Outcomes
On completion of the module the students should be able to:
- recognise the security issues that arise in a variety of applications
- appreciate how and why particular applications can address various security concerns
- review how the various security issues in a particular application relate to one another
- analyse how the security aims are met in a particular application.

Syllabus

This module is split into three parts. Each part is broken down into general security objectives, underlying technologies and architectures, example applications and case studies.

Part 1 **- Security management models for application security**
In this part we look at the principles of security management that we learned in IC1 and consider security management processes in the context of application security. We consider how the processes of risk assessment, audit and incident management are implemented at the level of application security and we identify how we can evaluate the effectiveness of security management models at the technical level. In this section we also consider assurance, what it means and how it can be measured in the context

of application and business security. The final unit in this part describes the public access mobile radio application, TETRA and we use this application as a case study for the risk assessment methodologies that we cover in unit two**.**

Part 2 **- Identity management and web application security**

In this next part we explore the subject of identity management and identify how it relates to application security. We begin by discussing what identity means and why it is important to certain types of applications and business processes. We review the requirements of identity management from various perspectives of business, user and government. We extend the discussion by looking at identity management initiatives such as single sign-on. Next we take a look at web applications, an area to which identity management systems are ideally suited. We look at the security issues that impact web applications, revisit the security techniques that we learned in the core modules and then extend them by examining current security initiatives and implementations for web applications, including WS-security, XML security, SOAP and SAML. We use the audio lecture on 'How Much Should We Pay For Information Security' by Mark Stirland as the case study for this part of the module.

Part 3 - **Electronic Payment Systems**

In this final part we work through three lectures that relate directly to payment and e-commerce applications. The section starts with a lecture on smart cards, then moves on to electronic and mobile payment systems and trust services. Following on from this we look at EMV security, payment systems and trust services in the Colin Whittaker lecture. The module closes with an EMV case study in which through a structured activities, the student is tasked with reviewing the material in the module and applying it to the Chip and PIN programme**.**