Study guide: COS 720 (Computer Security I)

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1 Overview

1.1 Description

This course focuses on state-of-the-art security topics that are current and relevant to industry. The curriculum for this course is determined annually.

1.2 Prerequisites

There are no formal prerequisites but it is recommended that students have a sound programming background for this course. Some knowledge of computer architecture and networking will be useful. The ability to independently explore and discover knowledge is essential.

Note that the same prescribed book is used for this course for students who completed the COS330 Computer Security course last year. If you did not take this course, it is strongly recommended that you read the applicable chapters in the prescribed textbook. Details for the prescribed textbook is given in a later section.

1.3 Related modules

Much of the background knowledge of this course was covered in the third-year course Computer Security (COS330). The content for COS330 covered selected chapters of the prescribed textbook.

1.4 Study units

Refer to the study units under section 1.5. The aim of the course is to equip students with a broad knowledge of concepts used within the Cybersecurity arena. This will equip students for any ICT career where new Cyber-, Computer and Information Security issues are explored on a continuous basis. Students will also be well equipped with a research background and broad spectrum of current research interests.

1.5 Course

Note that the teaching strategy used in this course requires independent study. We will therefore often not just teach 'from the book', but most of what we say will be discussed somewhere in the book supplemented by state-of-the-art research and publications. Be ready to search the book (and other sources) for information. Read as widely as possible. By the end of this course you should have a thorough understanding of many security concepts – much more than what we plan to teach you. This claim is based on the assumption that you will need additional material to appreciate the analyses and other activities conducted in class, and that you will find the relevant information and apply it.

This module formally covers the following security themes:

- Privacy and in particular in big data sets

- Framework for cybersecurity implementation in an organisation
- Cybersecurity services such as confidentiality
- The convergence of Big Data Science & Cybersecurity
- Software failure analysis
- Identity Deception on SMP
- Other current topics in Cybersecurity

2 Lecturers

- Prof J.H.P. Eloff, Eng 1 Level 6/7, (012) 420-6927, jan.eloff@up.ac.za

3 Plagiarism Policy

The Department of Computer Science considers plagiarism as a serious offense. Disciplinary action will be taken against students who commit plagiarism. Plagiarism includes copying someone else's work without consent, copying a friends' work (even with consent) and copying material (such as text or program code) from the Internet. Copying will not be tolerated in this course. For a formal definition of plagiarism, the student is referred to http://www.ais.up.ac.za/plagiarism/index.htm (or, from the main page of the University of Pretoria site, follow the Library quick link, and then click the Plagiarism link). If you have any form of question regarding this, please ask one of the lecturers to avoid any misunderstanding. Also note that the OOP principle of code re-use does not mean that you are necessarily allowed to copy and adapt code to suit your solution.

3.1 Interaction with the lecturers

An ideal opportunity to speak with the lecturers is immediately after classes. If you require a longer discussion, make an appointment.

Always make appointments via e-mail – please contact my secretary Mrs Shoba Govender shoba.govender@up.ac.za - When communicating via email, always provide the module code, your full name (including your first name and surname) and your student number. Your email address must have your full correct name displayed, not just your student number. Please be courteous and use clear language during all interactions.

When requesting an appointment do so well in advance (not the day before an important deadline). Often the waiting time for an appointment is more than one week. Make sure that you ask questions during the semester, and ensure your understanding of the work is up-to-date.

4 Study Material

You are advised to regularly monitor the COS720 website (at http://www.cs.up.ac.za/courses/COS720) for any updates and new announcements. Please refer to the website for the latest version of the study guide; the study guide might change at any time without prior notice; however, lecturers will inform you about changes by means of an

announcement on the course website. Class attendance is vital to maintain a good academic record. Additional material may also be discussed during lectures that are not in your textbook. Please ensure that you attend these forums so that you are aware of important announcements, additional discussions and material not covered in this study guide or on the course website.

4.1 Prescribed Textbook

- CP Pfleeger and SL Pfleeger, *Analyzing computer security*, Prentice Hall, 2012
  This book is available in the UP library under Safari -> Technical books
  We will focus on the chapters after chapter 11

4.2 Additional references

During the course I will prescribe a number of articles. A reference will be given and it is the responsibility of students to ensure that they obtain a copy. Note that this material is examinable.

5 Assessment

There will be one (1) assignment which makes up the semester mark and a written exam , each contributing 50 % of the final mark for the course.

6 Assignments

The specification for the assignment can be found on the course website in due course. Note that the assignment counts 100% of your semester mark.

The documentation that you have to compile counts a substantial part of the marks awarded. Please do not arrive at a demonstration session with only an implementation. Due dates for the assignment is published with the assignment. See the CS web for specific time uploads. Please upload your complete source code and documentation in the zip file compression format, named as your student number. Uploads will be available well in advance. Also make sure to book a slot for any demonstrations, if applicable. Demo times, if applicable, will be published on the CS Website and are the same as the booking slots.

7 Examination

The examination covers all the work / lectures provided and discussed during the semester. The exam is a written 3-hour closed book exam. Please make sure to check the course website for any updates towards the end of the semester. The exam date will be announced later and can be obtained directly from the Department Computer Science.

7.1 Final Mark Calculation

- Semester mark = Projects (100%).

- Final mark = Exam (50%) + Semester mark (50%).
- Subminima:
  - Semester mark of at least 40% to get access to the exam.
  - Exam mark of at least 40%
- Note that there is no opportunity for a re-examination. This holds true for all honours modules.

8 Lecturing Schedule (to be provided)

9 Conclusion

I hope that you will enjoy this course. I will endevor to make the course as interesting as possible. I wish you all the best in advance for your preparation of tests, assignments and the final exam.

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