



Computer Security (SSI)

DEPARTMENT OF COMPUTER ENGINEERING (DISCA)

Instructors: Jose Ismael Ripoll Ripoll

Subject offered in the following degrees: ITIG, ITIS

Type of subject: Core

Classroom credits: 3 Laboratory credits: 3 Total: 6

Coordinator/Course Tutor/Lecturer: Ismael Ripoll

Term: Year 2, Semester B

E.C.T.S. Credits: 3/3

Aims

The aim of the course is to understand the threads (security flaws, attacks, configuration fails, etc.) of a computer system; to know how to secure the system to prevent attacks; and also, how to quickly identify, contain, and respond to critical security threats, once the system has been breached.

Computer security is a very wide topic that comprises many different areas: operating systems, networking, social engineering, programming, databases, etc. Since it is not possible to cover all these topics in one semester, we will try focus on operating systems issues, but the other topics will also be introduced.

Syllabus

Theory:

1. Basic Concepts
2. Introduction to Unix Administration
3. Pluggable Authentication Modules
4. Secure Network Configuration
5. Remote Execution
6. Network File System (NFS)
7. Secure Programming
8. System Logs
9. Secure Shell
10. Using SSL tools
11. Intrusion detection
12. Scanners and sniffers
13. Contingency plans

Practice.

1. Linux installation



2. Understanding the system processes
3. The File system hierarchy
4. Rlogin (remote login)
5. Network File System.
6. Secure Shell
7. Hacking tools

Evaluation

There will be a final exam with two parts with the following score:

- 1) written exam that will cover the lectures: 80%
- 2) written exam about the laboratory activities: 20%

It is possible to get the 20% of the final score (therefore it will not be necessary to answer the second part of the written exam) by attending to the laboratory and answering the questions of the teacher of each session. Since there are seven sessions, each passed session will score 2/7 points.

Recommended Bibliography

- "Practical UNIX & Internet Security", Simon Gafinkel & Gene Spafford. Publisher: O'Reilly. ISBN 13: 9781565921481
- "Linux Companion for System Administrators", Jochen Hein. Hein, Jochen. Publisher: Addison-Wesley Pub. ISBN-13: 978-0201360448
- "Maximum Linux Security", John Ray, Publisher: Sams; 2nd Bk&Cdr edition (June 21, 2001) ISBN-13: 978-0672321344