

This course is available for student registration only after the approval process has been completed.

SUBJECT CSE Alpha Prefix (e.g., CSE) COURSE NO. 4272 Number Choice (e.g., 1301) CREDIT HOURS 3 TERM TO BE ADDED TO THE FILE Fall 2010 (e.g., Fall 2006)

CLASS HOURS 45 LECTURE HOURS LAB HOURS CONTACT HOURS (CEU ONLY)

DEPARTMENT Computer Sciences (e.g., Computer Sciences) SCHEDULE TYPE Lecture (A) (e.g., Lecture, Lab or Special Project)

- COLLEGE OF AERONAUTICS-23 COLLEGE OF PSYCHOLOGY AND LIBERAL ARTS-25
COLLEGE OF BUSINESS-24 COLLEGE OF SCIENCE-26
COLLEGE OF ENGINEERING-01 UNIVERSITY COLLEGE EXTENDED STUDIES-27

COMPUTER TITLE Restricted to 25 characters, including spaces Comp and Info Security

CATALOG TITLE Computer and Information Security

CATALOG DESCRIPTION OF COURSE Limited to 350 characters, including spaces

Introduces the fundamentals of computer security. Includes vulnerability analysis, threat modeling and risk assessment, and techniques for asset protection. Discusses economic, legal and ethical issues in computer security. Focuses on a system-wide view of security and discusses trends in current literature.

In addition, you may attach a course syllabus and/or more detailed description.

RESTRICTIONS Prerequisite CSE 2010 or Corequisite
Prerequisite ECE 2552 Corequisite
Prerequisite Corequisite

GRADES TO BE ISSUED

- A, B, C, D, F
A, B, C, D, F, CEU
CEU
S, U
P, F
Other

ADDITIONAL RESTRICTION (e.g., Major, Class Level, Department Head Approval)

If this course replaces a course currently offered in BANNER, please indicate old course information

SUBJECT Alpha Prefix (e.g., CSE) COURSE NO. (e.g., 1301)

APPROVALS: Upon completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee for approval below and forward to Catalog Director.

Originator Date Chair, Graduate Council Date

Department Head/Program Chair OR

Dean or Associate Dean Date Chair, Undergraduate Curriculum Committee Date

CATALOG DIRECTOR

These changes/additions have been made for the University/Extended Studies Catalog and entered into the BANNER term named above.
Catalog Director Date

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**To:** Dr. William Shoaff, Department Head, Computer Sciences  
**From:** Dr. William H. Allen *wahl*  
**Date:** April 14, 2009  
**Subject:** Addition of CSE 4272

The field of computer security has grown in the past decade and both students and employers are interested in security education. The Computer Sciences Department offers several graduate-level courses in computer security but does not currently offer an undergraduate course in this area.

To address this need, we propose the creation of a new undergraduate course, CSE 4272 Computer and Information Security, which provides broad coverage of security concepts, as well as related social, economic and legal issues.

#### **Catalog Description for CSE 4272**

Introduces the fundamentals of computer security. Includes vulnerability analysis, threat modeling and risk assessment, and techniques for asset protection. Discusses economic, legal and ethical issues in computer security. Focuses on a system-wide view of security and discusses trends in current literature.

# CSE 4272 Computer and Information Security

## Tentative Syllabus

### Catalog Description:

**CSE 4272 Computer and Information Security** (3 credits). Introduces the fundamentals of computer security. Includes vulnerability analysis, threat modeling and risk assessment, and techniques for asset protection. Discusses economic, legal and ethical issues in computer security. Focuses on a system-wide view of security and discusses trends in current literature.

### Prerequisites:

- CSE 2010 or ECE 2552

### Textbook:

*Security in Computing*, 4<sup>th</sup> Ed., Charles P. Pfleeger and Shari Lawrence Pfleeger, Prentice Hall, 2007

### Topics:

- Attacks, Vulnerabilities and Defenses
- Program Protection
- Protection of Operating Systems
- Network Security
- Database Security
- Elementary Cryptography
- Threat Modeling and Risk Assessment
- The Economics of Cybersecurity
- Legal, Ethical and Privacy Issues

### Evaluation based on:

- Two progress tests (25% each)
- Cumulative final exam (25%)
- Written and programming assignments (20% total)
- Quizzes and in-class participation (5% total)

### Assignments:

Assignments for this course will vary by chapter and topic to reflect the ever-changing nature of computer and information security. For example, when we discuss cryptography, students may be given an assignment to implement a simple cryptographic algorithm or may read a paper on a recent advance in cryptography. For topics such as network or database security, students may be asked to analyze a recent system compromise to determine appropriate preventative measures or may write a program to evaluate the security of an existing system. In other cases, students will be asked to find and review research papers on a specific topic. As a final project, students will perform a security review for a selected case study.