

**ROUTE SHEET**  
**PERMANENT COURSE CHANGE/APPROVAL**  
 (Attach course change request form)

Prefix & Number IS 589 Course Title Security Principles and Practices

Abbreviation for Schedule (20 characters): Secure Prin and Prac

Nature of course request (Mark all that apply)

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> Add a course   | <input type="checkbox"/> Prerequisite change         | <input type="checkbox"/> LACC course                |
| <input type="checkbox"/> Delete a course           | <input type="checkbox"/> Number/Prefix change        | <input type="checkbox"/> Undergraduate course       |
| <input type="checkbox"/> Title change              | <input type="checkbox"/> Description change          | <input checked="" type="checkbox"/> Graduate course |
| <input type="checkbox"/> Writing Intensive (WI)    | <input type="checkbox"/> Multicultural Diversity (D) | <input type="checkbox"/> 400/500 course             |
| <input type="checkbox"/> Quantitative Literacy (Q) | <input type="checkbox"/> Honors course (H)           | <input type="checkbox"/> Other: _____               |

1) Faculty Sponsor Signature [Signature] Date 3.7.14  
 2) Dept./Program Coordinator [Signature] Date 3/7/14  
 3) Division Chair [Signature] Date 3/7/14  
 Curriculum Chair [Signature] Date 3/7/17

4) Faculty Senate Committees: The Curriculum Committee reviews all course proposals except for honors and graduate courses, which are reviewed instead by the Honors Committee or Graduate Committee. All 400/500 "split" courses must be approved by both the Curriculum and Graduate Committees. All curriculum committee decisions are forwarded to the Senate Executive Committee.

a) Curriculum Committee Chair \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_ N/A \_\_\_ Approved \_\_\_ NOT Approved

b) Graduate Committee Chair \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_ N/A \_\_\_ Approved \_\_\_ NOT Approved

c) Honors Committee Chair \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_ N/A \_\_\_ Approved \_\_\_ NOT Approved

5) Faculty Senate President \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_ Approved by the Senate Executive Committee  
 \_\_\_ Approved by the Senate \_\_\_ NOT Approved (Return to sponsor)

6) Appropriate Dean \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_ Approved \_\_\_ NOT Approved (Return to Faculty Senate President)

7) Provost/VPAA \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_ Approved \_\_\_ NOT Approved (Return to Faculty Senate President)

# REQUEST FORM PERMANENT COURSE APPROVAL

Initiated by (print): Jie Liu Date: 3.6.2014

## **ADDING A COURSE**

Prefix/Number	Descriptive Title	Cr. Hours
IS589	Security Principles and Practices	4

### **Catalog Description:**

This course discusses broad topics that are related to information security, especially up-to-date topics and development, with emphasis on practical aspects. A sample of topics would be identity and access management, cryptography, secure communications and secure web applications. Students will learn about the newer security threats, software vulnerabilities and hacker attacks. Students will also conduct research for recent development on information security threats and solutions for defending from these threats.

### **Course Goals and Objectives:**

This course is a special topic course and will focus on the up-to-date topics in information security and related discussions. In particular, the course focuses on practical security mechanisms and solutions, such as identity and access management, cryptography, secure communications and secure web applications. Students will learn about the security threats, software vulnerabilities and hacker attacks that are commonly implemented against commercial applications. Students will also search for recent development on information security threats that interest them.

### **Justification for adding the course (e.g. alignment with other institutions, program revision, etc.):**

This is a course among a sequence of proposed security courses to the curriculum committee. The Computer Science Division is working on the creation of a sequence of security courses to meet the current need from the state and nation. Students who finish the sequence of courses will get a certification from WOU and write this skill on their resume.

### **Briefly describe other WOU faculty/programs consulted (attach additional sheet(s) if necessary).**

Faculty in the Computer Science Division has been consulted. No outside faculty or programs are affected by the addition of this course.

### **Faculty and Facilities Needed:**

1 Instructor, 1 Smart Classroom

### **Attach brief course outline**

Week1: Core information security principles of success	----HW1\&Lab1
Week2: Governance and risk management practices	
Week3: Security architecture and design	
Week4: Physical security	----HW2\&Lab2
Week5: Operations security	----Project
Week6: Access control systems and methodology	----HW3\&Lab3
Week7: Cryptography	
Week8: Telecommunications, network, and internet security	----HW4\&Lab4
Week9: Software development security	
Week10: Student Presentation	
Week11: (Final)	

# IS589: Security Principles and Practices

Instructor: Prof. Jie Liu

CS Department, WOU

## Course Objectives:

This course is a special topic course and will focus on the up-to-date topics in information security and related discussions. In particular, the course focuses on practical security mechanisms and solutions, such as identity and access management, cryptography, secure communications and secure web applications. Students will learn about the security threats, software vulnerabilities and hacker attacks that are commonly implemented against commercial applications. Students will also search for recent development on information security threats that interest them.

Prerequisite: CS260 or CS600

## Outcomes:

1. Students will be able to classify a given threat and compile common approaches that mitigate the threat. In addition, student will be able to distinguish new approaches from the conventional ones and evaluate the effectiveness of the new approaches.
2. Students will be able to select cryptographic techniques in software and system design.
3. Students will be able to apply methods for authentication, access control, intrusion detection and possibly prevention.
4. Students will be able to evaluate common security risks of systems and suggest tools for security audits.
5. Students will be able to detect the security issues and cloud attacks.

## General Information:

All handouts and important information will be posted or announced in class.

## Teaching Personnel:

Instructor name: Jie Liu

Office: ITC 302-B

Phone: 88989(O)

Email: [liuj@wou.edu](mailto:liuj@wou.edu)

## Textbook:

TextBook: *Information Security: Principles and Practices (2nd Edition)* by Mark S. Merkow and Jim Breithaupt

## Course Content:

Week1: Core information security principles of success	-----HW1\&Lab1
Week2: Governance and risk management practices	
Week3: Security architecture and design	
Week4: Physical security	-----HW2\&Lab2

Week5: Operations security	-----Project
Week6: Access control systems and methodology	-----HW3\&Lab3
Week7: Cryptography	
Week8: Telecommunications, network, and internet security	-----HW4\&Lab4
Week9: Software development security	
Week10: Student Presentation	
Week11: (Final)	

We will mainly cover the topics listed above. And we will try to cover some other topics if time permits.

### **Grading:**

There will be homework/labs, one project, and two exams. They will count toward the grade as follows:

Homework/Labs(20%), Project (10%), Quizzes (10%), Midterm Exam (20%), and Final Exam (40%).

Final Grade:

The cut off for letter grades are: A 90%, B 80%, C 70%, D 60%

The instructor reserves the right for some small changes of grading. Any variation will be made for the benefit of students. Contact the instructor if there is still a disagreement.

### **Labs and Exercises:**

Labs and exercises have to be done individually although discussions are strong encouraged. We may have additional reading and research assignments. However, we will do most of the hands on exercises in the book.

### **Quizzes and Exam:**

There will be four quizzes. The lowest quiz score will be discarded. As a result, students do not need to make up a missed quiz. Midterm will be given on MM/DD/YYYY Final is comprehensive. You may bring one sheet of notes to the midterm and two sheets of notes to the final. Otherwise, the exams are close book and notes.

### **Project:**

More to come!

### **Class Philosophy:**

I would like very much for students to contribute to the overall learning process. If a student has a question, an idea, an answer to a question, a good article to share, or a suggestion, please let us all hear it. Hopefully, others may learn something from it.

### **Plagiarism:**

In this course you are encouraged to discuss the problems with your classmates. However, you are not allowed to work together on the final solution of the problems except in a group project. If we find similar solutions, it will be treated as cheating! You get zero on the cheated assignment if you are caught once in any form of the cheating. In addition, the violation will also be reported to the division and the university.

### **Disability:**

Please contact the Office of Disability Service if you need further help. The information of ODS is following:

<http://www.wou.edu/student/disability/>

Phone: 503-838-8250

Email: [ods@wou.edu](mailto:ods@wou.edu)

**NOTES:**

1. The instructor reserves the right to adjust the class schedule and grading policy according to the class progress.
2. It is the policy of the computer science department that you must receive a passing grade on the final exam (60% or higher) in order to pass the class.
3. If you are going to miss the class, please ask the student affairs office to send me an email. Otherwise, no excuse is accepted.
4. Exams or quizzes must be taken at the times and dates scheduled unless you make other arrangements with me at least 24 hours prior to the exam or the quiz. There are NO makeup exams or quizzes!!
5. The final is NOT re-schedulable.