

# ROUTE SHEET

## PERMANENT COURSE CHANGE/APPROVAL

(Attach course change request form)

Prefix & Number IS 585 Course Title Introduction to Computer Security

Abbreviation for Schedule (20 characters): Intro to Comp Sec

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 Janwei Wu by Srat Alvarado Date 2/20/14  
 2) Dept./Program Coordinator Sat M Date 2/20/14  
 3) Division Chair [Signature] Date 2/20/14  
 Curriculum Chair Sat M Date 2/20/14

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): Yanwei Wu Date: 12.10.13

## **ADDING A COURSE**

Prefix/Number	Descriptive Title	Cr. Hours
IS 585	Introduction to Computer Security	4

### **Catalog Description:**

An introduction to basic computer security. It introduces cryptography, malware and viruses, operating system security, and programming security. The students gain hands-on experiences via labs and projects.

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

Upon completion of the course, students will be able to:

- Explain the following terms: Plain text, Cipher text, Cipher, Cryptanalysis, Cryptographic Algorithm, and Cryptology;
- Evaluate security problems in various components of an operating system, including its file system and memory;
- Develop secure programs for the purposes of input validation and data sanitation;
- Implement a safe programming language;
- Determine the nature of viruses and malware;
- Examine database and data mining security;
- Organize and administrate a secure system.

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

This course is 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 as a 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. This is a CS major course, no outside faculty or programs are affected by the addition of this course.

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

1 Smart Classroom, 1 Instructor

Attach brief course outline

IS585: Introduction to Computer Security  
Instructor: Prof. Yanwei Wu  
CS Department, WOU

**Course Objectives:**

This course is an introduction to basic computer security. It introduces cryptography, malware, virus, operating system security, and programming security. The students will gain hands-on experiences via labs and projects. Topics in IS 585 include Database security, data mining security and how to ensure security as an administrator at the system level.

**Learning Outcomes:**

1. Students will be able to define the following terms: Plain text, Cipher text, Cipher, Cryptanalysis, Cryptographic Algorithm, and Cryptology in order to understand the main topics of cryptography.
2. Students will be able to evaluate the security issues in operation system: file system, memory, and others in order to protect the operation system and/or avoid malicious attacks.
3. Students will be able to develop secure programs by studying the input validation, data sanitization, and the safe programming language.
4. Students will be able to characterize the virus and malware in order to detect if the system or program is affected by it.
5. Students will be able to examine database and data mining security in order to design secure database system.
6. Students will be able to organize a secure system as an administrator in order to ensure a secure computing system.

**General Information:**

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

**Teaching Personnel:**

Instructor name: Yanwei Wu

Office: ITC 310-D

Phone: 89121(O)

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

**Textbook:**

TextBook:

*Introduction to Computer Security by Michael T. Goodrich and Roberto Tamassia*

Reference books:

*Security in Computing by Charles P. Peeger and Shari Lawrence Peeger*

*Secure Programming for Linux and Unix HOWTO by David A. wheeler*

Papers and handouts will be posted on the course website or distributed in class.

**Course Content:**

Week1: Introduction & Concepts	-----HW1&Lab1
Week2: Cryptography	-----Project
Week3: Cryptography (Cont.)	
Week4: FileSystem	-----HW2&Lab2
Week5: Memory Management	
Week6: Program Security	-----HW3&Lab3
Week7: Malware	-----Project
Week8: Database and Data Mining Security	-----HW4&Lab4
Week9: Administering 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 and there are enough students who are interested.

### **Grading:**

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

Homework(10%), Labs(10%), Projects (10%), Midterm Exam (30%), Final Exam (40%).

### **Final Grade:**

100%-92%	A	91%-90%	A-		
89%-88%	B+	87%-82%	B	81%-80%	B-
79%-78%	C+	77%-72%	C	71%-70%	C-
69%-68%	D+	67%-62%	D	61%-60%	D-
59%-0%	F				

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.

### **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

### **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 reschedulable.
6. Laptops or pads are not recommended to bring to the class since they are not necessary unless you present your work.