

Note:

Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should not be used to purchase course materials.

COURSE SYLLABUS

CSCI 611

SECURE SOFTWARE ENGINEERING

COURSE DESCRIPTION

This course is primarily concerned with how to write secure software, including common pitfalls in major languages.

RATIONALE

From social interaction, education, and communication to business, transportation, and government and everything in between, society depends on complex software systems. The consequences of a failure in a software system can be severe, and reliable functionality and security are critical. A course in secure software engineering will equip the students with the knowledge and skills necessary to develop and operate dependable and secure software systems.

I. PREREQUISITE

For information regarding prerequisites for this course, please refer to the [Academic Course Catalog](#).

II. REQUIRED RESOURCE PURCHASE

Click on the following link to view the required resource(s) for the term in which you are registered: <http://bookstore.mbsdirect.net/liberty.htm>

III. ADDITIONAL MATERIALS FOR LEARNING

- A. Computer with basic audio/video output equipment
- B. Internet access (broadband recommended)
- C. Blackboard [recommended browsers](#)
- D. Microsoft Office

IV. MEASURABLE LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

- A. Explain why security is a software issue.
- B. Detail the principles and practices of secure software design.
- C. Describe the principles and practices of secure software coding and testing.
- D. Integrate biblical principles within the field of secure software engineering.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

- A. Textbook readings and lecture presentations/notes
- B. Course Requirements Checklist

After reading the Course Syllabus and [Student Expectations](#), the student will complete the related checklist found in Module/Week 1.

- C. Discussion Board Forums (3)

Discussion boards are collaborative learning experiences. Therefore, the student is required to provide a thread in response to the provided prompt for each forum. Each thread must be 350–400 words and demonstrate course-related knowledge. In addition to the thread, the student is required to reply to 1 other classmate's thread. The reply must be 250 words.

- D. Labs (5)

The student will complete labs associated with the course material. Each lab will have specific instructions for tasks, along with deliverables, to be completed in the virtual lab environment.

- E. Quizzes (6)

Each quiz will cover the Reading & Study material for the module/week in which it is assigned. Each quiz will be open-book/open-notes, contain 6 multiple-choice, 6 true/false, and 1 short answer questions, and have a 1-hour time limit.

- F. Midterm Exam

The Midterm Exam will cover the Reading & Study material for Modules/Weeks 1–4. The Midterm Exam will be open-book/open-notes, contain 15 true/false and multiple choice questions and 5 short answer questions, and have a 2-hour time limit.

- G. Final Exam

The Final Exam will cover all of the Reading & Study material for the course. The Final Exam will be open-book/open-notes, contain 20 true/false and multiple choice questions and 7 short answer questions, and have a 2-hour and 45-minute time limit.

VI. COURSE GRADING AND POLICIES

A. Points

Course Requirements Checklist		10
Discussion Board Forums	(3 at 30 pts ea)	90
Labs	(5 at 100 pts ea)	500
Quizzes	(6 at 25 pts ea)	150
Midterm Exam	(Modules 1–4)	130
Final Exam	(Modules 5–8)	130
	Total	1010

B. Scale

A = 940–1010 A- = 920–939 B+ = 900–919 B = 860–899 B- = 840–859
 C+ = 820–839 C = 780–819 C- = 760–779 F = 0–759

C. Disability Assistance

Students with a documented disability may contact Liberty University Online’s Office of Disability Accommodation Support (ODAS) at LUOODAS@liberty.edu to make arrangements for academic accommodations. Further information can be found at www.liberty.edu/disabilitysupport.

If you have a complaint related to disability discrimination or an accommodation that was not provided, you may contact ODAS or the Office of Equity and Compliance by phone at (434) 592-4999 or by email at equityandcompliance@liberty.edu. Click to see a full copy of Liberty’s [Discrimination, Harassment, and Sexual Misconduct Policy](#) or the [Student Disability Grievance Policy and Procedures](#).

COURSE SCHEDULE

CSCI 611

Textbook: Richardson & Thies, *Secure Software Design* (2013).

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Richardson & Thies: chs. 1–2 2 presentations 1 website	Course Requirements Checklist Class Introductions DB Forum 1 Quiz 1	10 0 30 25
2	Richardson & Thies: chs. 3–4 2 presentations Lab 1 Worksheet 1 website	Lab 1: PHP - Path Traversal and LFI Quiz 2	100 25
3	Richardson & Thies: chs. 5, 15 2 presentations 1 website	DB Forum 2 Quiz 3	30 25
4	Richardson & Thies: chs. 7–8 2 presentations Lab 2 Worksheet 1 website	Lab 2: PHP – OS Command Injection Midterm Exam	100 130
5	Richardson & Thies: chs. 9–10 2 presentations Lab 3 Worksheet 1 website	Lab 3: PHP – Broken Access Control Quiz 4	100 25
6	Richardson & Thies: chs. 6, 11 2 presentations 1 website	DB Forum 3 Quiz 5	30 25
7	Richardson & Thies: chs. 12–13 2 presentations Lab 4 Worksheet 1 website	Lab 4: PHP – Password Hashing Quiz 6	100 25
8	Richardson & Thies: chs. 14, 16 2 presentations Lab 5 Worksheet 1 website	Lab 5: PHP – Broken Authentication Final Exam	100 130
TOTAL			1010

DB = Discussion Board

NOTE: Each course module/week begins on Monday morning at 12:00 a.m. (ET) and ends on Sunday night at 11:59 p.m. (ET). The final module/week ends at 11:59 p.m. (ET) on **Friday**.