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. 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 threads. Each 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 (3 at 100 pts ea; 2 at 110 pts ea) | 520 |
| Quizzes (6 at 25 pts ea) | 150 |
| Midterm Exam (Modules 1–4) | 120 |
| Final Exam (Modules 5–8) | 120 |
| **Total** | 1010 |

B. Scale


C. Late Assignment Policy
If the student is unable to complete an assignment on time, then he or she must contact the instructor immediately by email.

Assignments that are submitted after the due date without prior approval from the instructor will receive the following deductions:

1. Late assignments submitted within one week of the due date will receive a 10% deduction.
2. Assignments submitted more than one week late will receive a 20% deduction.
3. Assignments submitted two weeks late or after the final date of the course will not be accepted.
4. Late Discussion Board threads or replies will not be accepted.

Special circumstances (e.g. death in the family, personal health issues) will be reviewed by the instructor on a case-by-case basis.

D. Disability Assistance

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

## CSCI 611


<table>
<thead>
<tr>
<th>Module/Week</th>
<th>Reading &amp; Study</th>
<th>Assignments</th>
<th>Points</th>
</tr>
</thead>
</table>
| 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: Limitations of Cryptography  
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: Databases and Least Privilege  
Midterm Exam | 110  
120 |
| 5           | Richardson & Thies: chs. 9–10  
2 presentations  
Lab 3 Worksheet  
1 website | Lab 3: Static Analysis  
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: Code Review  
Quiz 6 | 110  
25 |
| 8           | Richardson & Thies: chs. 14, 16  
2 presentations  
Lab 5 Worksheet  
1 website | Lab 5: Code Testing  
Final Exam | 100  
120 |

**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.