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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Requirements Checklist</td>
<td>10</td>
</tr>
<tr>
<td>Discussion Board Forums (3 at 30 pts ea)</td>
<td>90</td>
</tr>
<tr>
<td>Labs (5 at 100 pts ea)</td>
<td>500</td>
</tr>
<tr>
<td>Quizzes (6 at 25 pts ea)</td>
<td>150</td>
</tr>
<tr>
<td>Midterm Exam (Modules 1–4)</td>
<td>130</td>
</tr>
<tr>
<td>Final Exam (Modules 5–8)</td>
<td>130</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1010</td>
</tr>
</tbody>
</table>

B. Scale

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**


<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: 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.