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.

LIBERTY UNIVERSITY

COURSE SYLLABUS

CSCI605
APPLIED CRYPTOGRAPHY

COURSE DESCRIPTION

This course covers topics in modern cryptography with an emphasis on learning how to implement cryptographic protocols using mainstream cryptographic libraries such as OpenSSI.

RATIONALE

This course offers an introduction to the mathematical foundation and primary building blocks of the field of cryptography. In today's interconnected world, it is more important than ever to keep our data safe. The student will learn what techniques are used to keep information secure and confidential, as well as its limitations. Mathematical rigor is emphasized; however the primary thrust of the course is to enable the student to develop cryptographically secure code.

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. Identify the difference between public key and symmetric key cryptography.

B. Implement basic cryptographic protocols safely and securely.

C. Evaluate a cryptographic protocol.

D. Integrate biblical principles within the field of applied cryptography.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

A. Textbook readings and lecture presentations

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 (4)

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 at least 300 words and demonstrate course-related knowledge. In addition to the thread, the student is required to reply to 2 other classmates' threads. Each reply must be at least 150 words. All assertions in the thread and replies must be supported by Reading & Study materials, good examples, thoughtful analysis, and at least 2 scholarly resources.

D. Lab Assignments (3)

The student will complete the assigned lab report after completing the assigned labs.

E. Quizzes (2)

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 10 multiple-choice or 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 26 true/false, multiple choice, and short answer questions, and have a 2-hour time limit.

G. Final Exam

The Final Exam will cover all the Reading & Study material for the course. The Final Exam will be open-book/open-notes, contain 26 true/false, multiple choice, and 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 (4 at 50 pts ea)			200
Lab Assignments (3 at 100 pts)			300
Quizzes (2 at 50 pts ea)			100
Midterm Exam	(Modules 1–4)		200
Final Exam	(Modules 1–8)		200
		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.

LIBERTY UNIVERSITY

COURSE SCHEDULE

CSCI605

Textbooks: Stallings., *Cryptography and Network Security: Principles and Practice* (2017).

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Stallings.: chs. 1–3 1 presentation	Course Requirements Checklist Class Introductions DB Forum 1	10 0 50
2	Stallings: chs. 4–6 1 presentation	Quiz 1	50
3	Stallings: chs. 11–12 1 presentation	DB Forum 2 Decrypting Files With a Dictionary Attack Lab	50 100
4	Stallings: chs. 7–8 1 presentation	Midterm Exam	200
5	Stallings: chs. 9–10, 13 1 presentation	DB Forum 3 Forging Digital Signatures Lab	50 100
6	Stallings: chs. 14–15 1 presentation	Quiz 2	50
7	Stallings: chs. 16–17, 20 1 presentation	DB Forum 4 Steganography Lab	50 100
8	Stallings: chs. 18–19 1 presentation	Final Exam	200
		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**.