

**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***

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### **CSIS 463**

#### **MODERN CRYPTOGRAPHY**

#### **COURSE DESCRIPTION**

Study of modern cryptographic techniques. Covers basic cryptographic concepts, including symmetric key, public key, hash functions, digital signatures, and message authentication codes.

#### **RATIONALE**

The purpose of this course is to prepare students with the necessary server-side programming skills needed for use in the internet industry.

#### **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 the difference between public key and symmetric key cryptography.
- B. Implement basic cryptographic protocols.
- C. Evaluate a cryptographic protocol.
- D. Discuss professional, ethical, legal, security and social issues and responsibilities.
- E. Integrate the relevance of course material into a biblical worldview.

## 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 (8)

Discussion boards are collaborative learning experiences. Therefore, for the first Discussion Board Forum, the student must post a thread and then reply to 2 other students' threads. For the remaining 7 forums, the student will post a thread in response to the module/week's discussion topic and then reply to at least 1 classmate's thread. Each forum must follow current APA format.

Threads are required to be at least 300 words, professional in content and delivery, and written in proper English. Threads must use support from at least 2 scholarly references and 2 Bible verses, and replies must use support from at least 1 scholarly reference and 1 Bible verse. Replies must be at least 150 words except for Discussion Board Forum 1, which will require a minimum of 100 words for each reply. Replies must likewise be professional and written in proper English.

D. Labs (5)

Each Lab submission should include a detailed lab report, with screenshots, to describe what was done in the lab and what was observed. In addition to a detailed explanation to the observations that are interesting or surprising. Please also list the important code snippets followed by explanation. Each lab report should be at least 5 pages long and includes at least 5 sources to support the explanations.

E. Course Projects (2)

Each Course Project Assignment must be 2,000–2,500 words. The paper should demonstrate thoughtful consideration of the ideas and concepts that are presented in the course, provide new thoughts and insights relating directly to this topic, and express a biblical worldview, supported by Scripture. A minimum of 7 scholarly sources are required. The response should reflect scholarly writing and current APA standards.

F. Exams (2)

The exams consist of 25 multiple-choice questions covering the Reading & Study for the preceding modules/weeks. Each exam is open-book/open-notes, open-resources and will have a 1 hour time limit.

**II. COURSE GRADING AND POLICIES**

A. Points

Course Requirements Checklist		10
Discussion Board Forums	(8 at 25 pts ea)	200
Labs	(5 at 80 pts ea)	400
Course Projects	(2 at 100 pts ea)	200
Midterm Exam	(Modules 1–4)	100
Final Exam	(Modules 1–8)	100
	<b>Total</b>	1010

B. Scale

A = 900–1010 B = 800–899 C = 700–799 D = 600–699 F = 0–599

C. Disability Assistance

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

### **CSIS 463**

Textbook: Oriyano, *Cryptography InfoSec Pro Guide* (2014).

<b>MODULE/ WEEK</b>	<b>READING &amp; STUDY</b>	<b>ASSIGNMENTS</b>	<b>POINTS</b>
<b>1</b>	Oriyano: chs. 1–2 4 presentation	Course Requirements Checklist Class Introductions DB Forum 1 Lab Environment Setup	10 0 25 0
<b>2</b>	Oriyano: chs. 3–4 1 presentation	DB Forum 2 Lab – MD5 Collision Attack Lab Course Project 1	25 80 100
<b>3</b>	Oriyano: chs. 5–6 4 presentation	DB Forum 3 Lab – RSA Public-Key Encryption and Signature Lab	25 80
<b>4</b>	Oriyano: ch. 7 1 presentation	DB Forum 4 Midterm Exam	25 100
<b>5</b>	Oriyano: ch. 8 1 presentation	DB Forum 5 Lab – Secret-Key Encryption	25 80
<b>6</b>	Oriyano: chs. 9–10 1 presentation	DB Forum 6 Lab – One-way Hash Function Course Project 2	25 80 100
<b>7</b>	Oriyano: ch. 11 2 presentations	DB Forum 7 Lab – Public-Key Cryptography and PKI	25 80
<b>8</b>	Oriyano: ch. 12 6 presentation	DB Forum 8 Final Exam	25 100
<b>TOTAL</b>			<b>1010</b>

DB = Discussion Board

**NOTE:** Each course module/week (except Module/Week 1) begins on Tuesday morning at 12:00 a.m. (ET) and ends on Monday night at 11:59 p.m. (ET). The final module/week ends at 11:59 p.m. (ET) on **Friday**.