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 <u>not</u> be used to purchase course materials.

LIBERTY UNIVERSITY

COURSE SYLLABUS

BIOM 503
HUMAN GENETICS

COURSE DESCRIPTION

A study of the molecular causes of human disease with an emphasis on the specific gene perturbations that influence human health. Specific modes of genetic assault (e.g. mutations, epigenetic mechanisms, nutritional factors, and viral infections) will be discussed.

RATIONALE

Genetic material, such as RNA or DNA, is a common feature of all living organisms. Understanding the structure, function, and transmission of these molecules is fundamental to an understanding of topics ranging from the propagation of life to the molecular basis of human diseases. This course adds to foundational concepts of genetics and focuses on the epigenetic contributions to human development and health.

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 molecular mechanisms of epigenetics.

B. Describe how epigenetic modifications are determined.

C. Describe biological processes affected by epigenetic mechanisms.

D. Explain the role of epigenetics in human disease.

E. Communicate research findings using poster presentations.

F. Interpret data from recent scientific publications.

G. Integrate a biblical worldview into the study of epigenetics.

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 Forum

Discussion boards are collaborative learning experiences. Therefore, the student is required to create a thread in response to the provided prompt for each forum. The thread must be at least 400 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 250 words.

D. Group Discussion Board Forum

For this collaborative discussion board, the student is required to submit his/her e-poster in the thread. In addition to the thread, the student is required to reply to 2 other classmates' threads. Each reply must critique 2 other classmates' presentations and must be at least 250 words.

E. Lecture Assignments (10)

The student will answer a set of questions based on the Reading & Study completed each module/week.

F. Poster Presentation

Article Check

The student will post his/her chosen epigenetic article to Blackboard for approval from the instructor.

e-Poster

The student will complete a PowerPoint presentation (e-poster) based on a published epigenetic article. The student will submit his/her e-poster for peer review via the Group Discussion Board Forum and in a submission link.

Oral

The student will complete his/her Poster Presentation by adding a 12-minute audio recording to the PowerPoint presentation (e-poster).

G. Exams (4)

The student will complete 4 exams based on the Reading & Study material for the modules/weeks in which it is assigned. Each exam will be open-book/open-notes. The exams will contain true/false, multiple-choice, multiple answer, matching, short answer/essay questions, and/or fill-in-the-blank questions. The exams will also have a 2-hour time limit.

VI. COURSE GRADING AND POLICIES

A. Points

Course Requirements Checklist		10
Discussion Board Forum		55
Group Discussion Board Forum		55
Lecture Assignments (10 at 20 pts ea)		200
Poster Presentation		
Article Check		0
E-Poster		100
Oral		100
Exams (1 at 115 pts; 3 at 125 pts ea)		490
	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 D+ = 740–759 D = 700–739
D- = 680–699 F = 0–679

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

BIOM 503

Textbook: Tollefsbol, *Handbook of Epigenetics* (2017).

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Tollefsbol: ch. 2 3 presentations 4 websites	Course Requirements Checklist Class Introductions Lecture Assignment 1 Lecture Assignment 2 Lecture Assignment 3	10 0 20 20 20
2	1 presentation 1 PDF 2 websites	DB Forum Lecture Assignment 4 Exam 1	55 20 115
3	Tollefsbol: chs. 6, 8, 15 Bible Readings 3 presentations 5 websites	Lecture Assignment 5 Lecture Assignment 6 Lecture Assignment 7	20 20 20
4	Tollefsbol: chs. 17, 36 2 presentations 4 websites	Exam 2 Lecture Assignment 8	125 20
5	2 presentations 7 websites	Lecture Assignment 9 Poster Presentation – Article Check Exam 3	20 0 125
6	1 presentation 2 websites	Lecture Assignment 10	20
7	1 presentation	Group DB Forum Poster Presentation – e-Poster	55 100
8	1 presentation	Poster Presentation – Oral Exam 4	100 125
		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**.