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

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. 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

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Requirements Checklist</td>
<td>10</td>
</tr>
<tr>
<td>Discussion Board Forum</td>
<td>55</td>
</tr>
<tr>
<td>Group Discussion Board Forum</td>
<td>55</td>
</tr>
<tr>
<td>Lecture Assignments (10 at 20 pts ea)</td>
<td>200</td>
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<tr>
<td>Poster Presentation</td>
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<tr>
<td>Article Check</td>
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</tr>
<tr>
<td>E-Poster</td>
<td>100</td>
</tr>
<tr>
<td>Oral</td>
<td>100</td>
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<tr>
<td>Exams (1 at 115 pts; 3 at 125 pts ea)</td>
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<td><strong>Total</strong></td>
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</table>

B. Scale

C+ = 770–799  C = 730–769  C- = 700–729  D = 600–699  F = 0–599

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**

**BIOM 503**


<table>
<thead>
<tr>
<th>Module/Week</th>
<th>Reading &amp; Study</th>
<th>Assignments</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tollefsbol: ch. 2 3 presentations 4 websites</td>
<td>Course Requirements Checklist Class Introductions Lecture Assignment 1 Lecture Assignment 2 Lecture Assignment 3</td>
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<tr>
<td>2</td>
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<td>DB Forum Lecture Assignment 4 Exam 1</td>
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<tr>
<td>3</td>
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<td>5</td>
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<td>Poster Presentation – Article Check Exam 3</td>
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<td>6</td>
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<td>7</td>
<td>1 presentation</td>
<td>Group DB Forum Poster Presentation – e-Poster</td>
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<td>8</td>
<td>1 presentation</td>
<td>Poster Presentation – Oral Exam 4</td>
<td>100 125</td>
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</table>

**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.