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

BIOL 103
PRINCIPLES OF BIOLOGY LABORATORY

COURSE DESCRIPTION
Laboratory exercises selected to demonstrate basic biological concepts. Emphasis is on plant and animal cell chemistry, composition and function, organismal structure and function, biological diversity and population ecology.

RATIONALE
Principles of Biology Laboratory allows students to review and apply principles and systems studied in Principles of Biology 101. It teaches the student basic chemical and microscopic techniques used to examine God's creation. It introduces students to the scientific method, which is then used to address specific biological questions.

I. PREREQUISITES
For information regarding prerequisites for this course, please refer to the Academic Course Catalog.

II. REQUIRED RESOURCE PURCHASES
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. Operating System: Windows XP/Vista/7; or Macintosh OS X 10.2.9 or later
C. Internet access (broadband recommended)
D. Web Browser: Firefox version 3.0 or higher
E. Adobe Flash Player, latest version
F. JavaScript enabled
G. Microsoft Word
H. The Bible

IV. MEASURABLE LEARNING OUTCOMES
Upon successful completion of this course, the student will be able to:
A. Apply the Scientific Method to conduct lab experiments on biological processes.
B. Generate Lab Reports on experimental data and lab observations.
C. Describe biological organisms, structures, and taxonomy.
D. Explain biological and ecological processes.
E. Evaluate biblical and materialist explanations for life’s diversity using course observations and biological principles.

V. **Course Requirements and Assignments**

A. **Background Readings and Introductions (12)**
   Ten “Background” readings are associated with 10 labs found on the Late Nite Lab website. Two “introductions” are found on the eScience Lab manual compact disc (CD) describing experiments to be carried out.

B. **Procedures (12)**
   Ten of these lead the student through simulations of work that is done in the laboratory. Two of them, found on the student’s eScience Lab Manual CD, lead the student through procedures he/she will actually perform. They are carried out as directed and provide data for subsequent analysis.

C. **Course Requirements Checklist**
   After reading the Syllabus and Student Expectations, the student will complete the related checklist found in Module/Week 1.

D. **Discussion Board Forum**
   Discussion boards are collaborative learning experiences. Therefore, the student will participate in 1 Discussion Board Forum. The student will post his/her thread of no more than 150 words. In the following module/week, the student will continue his/her participation in the Discussion Board Forums by replying to 2 peers’ threads in no more than 50 words.

E. **Lab Notes (6)**
   For Late Nite Labs involving experiments, the student will keep an on-line lab notebook where data from each experiment are recorded, as well as observations and structural identification. These are graded. For the eScience labs, the student must print the data pages from the CD and keep data there for quiz preparation.

F. **Post-Lab Assignments/Questions (8)**
   For most Late Nite Labs, lab notes and review of procedure (as needed) are used to respond to questions at the end of many of the experiments. These questions are read and responded to at the Late Nite Lab Site.

G. **Quizzes (4)**
   The Scientific Method lab is followed by a multiple choice question quiz taken at the LateNiteLab web site. For the 2 eScience Labs and the Late Nite Ecology Lab, lab manual data tables and post-lab questions are used to prepare for multiple-choice quizzes taken at the Blackboard site. These will be found in the Blackboard Course Content under the appropriate module/week.
VI. COURSE GRADING AND POLICIES

A. Points

<table>
<thead>
<tr>
<th>Course</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Course Requirements Checklist</td>
<td>10</td>
</tr>
<tr>
<td>Discussion Board Forum</td>
<td>80</td>
</tr>
<tr>
<td>Lab Notes (6; pts vary per assignment)</td>
<td>130</td>
</tr>
<tr>
<td>Post-Lab Assignments (8; pts vary per assignment)</td>
<td>610</td>
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<tr>
<td>Quizzes (1 at 60 pts; 3 at 40 pts ea)</td>
<td>180</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1010</strong></td>
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B. Scale

A = 900–1010  B = 800–899  C = 700–799  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.

VII. BIBLIOGRAPHY


# BIOL 103 Course Schedule

Liberty Custom Biology Kit 103.

<table>
<thead>
<tr>
<th>MODULE/WEEK</th>
<th>READING &amp; STUDY</th>
<th>ASSIGNMENTS</th>
<th>POINTS</th>
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<tr>
<td>1</td>
<td>LNL: Background/Introduction for Lab 1</td>
<td>Course Requirements Checklist</td>
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<td>LNL: Scientific Method – Experiment 1</td>
<td>Lab Notes 1 – Scientific Method</td>
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<td>Quiz 1</td>
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<td>LNL: Background/Introduction for Lab 2</td>
<td>Lab Notes 2 – Biological Molecules</td>
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<td>LNL: Biological Molecules Experiments 1–5</td>
<td>Post-Lab Assignment 2 – Biological Molecules</td>
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<td>Post-Lab Assignment 3 – Cell Structure and Function</td>
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<td>LNL: Cell Structure and Function Experiments 1–6</td>
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<td>LNL: Background/Introduction for Lab 4</td>
<td>Lab Notes 4 – Diffusion and Osmosis</td>
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<td>LNL: Diffusion and Osmosis Experiments 1–3</td>
<td>Post-Lab Assignment 4 – Diffusion and Osmosis</td>
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<td>Tables 1, 2a, and 2b – Fermentation and Respiration</td>
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<td>Experiments 1, 2, Post-Lab Questions</td>
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<td>Quiz 2</td>
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<td>LNL: Background/Introduction for Lab 6</td>
<td>Lab Notes 6 – Photosynthesis</td>
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<td>LNL: Photosynthesis Experiments 1–4</td>
<td>Post-Lab Assignment 6 – Photosynthesis</td>
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<td>Lab Notes 7 – Mitosis</td>
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<td>LNL: Mitosis Experiments 1–3</td>
<td>Post-Lab Assignment 7 – Mitosis</td>
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<td>MODULE/WEek</td>
<td>READING &amp; STUDY</td>
<td>ASSIGNMENTS</td>
<td>POINTS</td>
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| 8          | LNL: Background/Introduction for Lab 8  
LNL: Earthworm – Topics 1–2 | Post-Lab Assignment 8 – Earthworm | 0      |
| 9          | LNL: Earthworm – Topics 3–4 | Post-Lab Assignment 8 Section 2–Earthworm | 120    |
| 10         | 1 website | Table 2, Lab 1; Tables 1–3, Lab 2  
Experiment 1, Lab 1; Experiments 1, 2, Lab 2; Post-Lab Questions  
Quiz 3 | 0      |
| 11         | LNL: Background/Introduction for Lab 10  
LNL: Protists – Topics 1–3 | Post-Lab Assignment 10 – Protists | 0      |
| 12         | LNL: Protists – Topics 4–5 | Post-Lab Assignment 10 – Protists | 100    |
| 13         | LNL: Background/Introduction for Lab 11  
LNL: Fungi Parts 1–3 | Post-Lab Assignment 11 – Fungi | 60     |
| 14         | LNL: Background/Introduction for Lab 12  
LNL: Ecology Parts 1–2 | Lab Notes 12 – Ecology  
Quiz 4 | 10 40  |
| 15         | Genesis 1–3  
Introductions to Labs | DB Forum 1 Thread | 40     |
| 16         | None | DB Forum 1 Replies | 40     |

TOTAL 1010

DB = Discussion Board  
LNL = Late Night Labs

**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**.