



15800 Calvary Rd
Kansas City, MO 64147

Syllabus

COURSE:	BIOL 100D&DN Survey of Biological Science and BIOL 101D (lab)
CREDIT:	3 Semester Hours (class). 2 Semester Hours (lab).
SEMESTER:	Fall 2020, Cycle 2
INSTRUCTOR:	Chris Basel
CONTACT INFO:	Phone: 816-425-6201 E-mail: chris.basel@calvary.edu Office: Ed. 224
MEETING TIME:	Lecture (BIOL 100D): Wednesday 8:00 – 11:00 AM BIOL 100DN Online Lab (BIOL 101D): Wednesday 1:00 – 4:00 PM

It's an exciting time to study science! Scientific discoveries are made every day and our understanding of nature has increased incredibly. Some suggest that the Bible and science are inconsistent. However, on the contrary, science and the Bible are completely consistent and this should strengthen our faith as we discover more and more about the incredible, awesome nature of our Creator God! In addition, science can be a very useful apologetic tool to counter secular worldviews.

I. COURSE DESCRIPTION:

BIOL 100D&DN (3 hrs) A broad overview of fundamental biological concepts for the non-science major. Emphasis is placed on a conceptual understanding of the chemistry of life, cell biology, microbiology, and genetics from a biblical perspective. Concurrent enrollment in BIOL 101 is required.

BIOL 101D (2 hrs) This course is the lab component of BIOL 100 and must be taken concurrent with BIOL 100. (Fee: \$30, non-refundable)

BIOL 100D&DN are blended classes, meaning that both campus and online students take this class together. Campus students attend the classes in person, online students attend the classes via the online classroom. All interaction and assignments for campus and online students are done in the online classroom. The lab is on campus only.

II. COURSE OBJECTIVES:

The Student Will:

- 1) Demonstrate an understanding of the fundamental concepts of biology from a biblical worldview.
 - a. Program Objective 1.
 - b. Assessments – chapter review questions and exams.
- 2) Complete experiments, interpret data, and prepare reports associated with the biological principles (BIOL 101 only).
 - a. Program Objective 1.

Our Mission: "...to prepare Christians to live and serve in the church and in the world according to the Biblical worldview."

- b. Assessments – Lab investigations and reports.
 - 3) Read literature covering the biblical worldview of biological and demonstrate your understanding of these concepts by reporting on the literature clearly and concisely.
 - a. Program Objectives 2, 3, and 4.
 - b. Assessments – biblical worldview essays.

III. REQUIREMENTS

All students will be expected to:

- Complete reading assignments, listen to lectures, and complete homework, essays, quizzes, lab reports and tests on schedule. The schedule will be posted on Canvas.
- Be prepared for labs (read handouts, listen to lectures, and complete prelab assignments).
- Participate actively and safely during lab experiments. Complete lab reports on schedule. The schedule will be posted on Canvas. Use of cell phones for any purpose, including calls and texting during lab is not allowed.
- Attend class (on campus students) and lab regularly. Excessive absences may result in earning a lower grade or withdrawal from the lab for safety reasons. *See the attendance policies posted on Canvas.*
- Participate actively in lectures and lab experiments. Use of computers or cell phones during lectures and lab for any non-academic, non-class related purpose (non-class websites, texting, calls, etc.) is not allowed. Taking pictures for academic reasons is acceptable. Computers may be used for working problems, taking notes, collecting data (lab) or other reasons approved by the instructor.
- Work safely in the lab.

IV. METHODS

- A. **LECTURES:** Lectures will consist of material from the book and additional material from a variety of sources. Students should take notes during lectures as the homework questions will be directly related to the lectures and not all the information can be obtained from the book.
- B. **READING:** The textbook provides a framework for the class. The text is **not required** as the information can be obtained from lectures or other online sources. However, most students will find the textbook very useful for studying. There will be a copy of the textbook on reserve in the library. Not every topic in the textbook will be addressed. Emphasis will be placed on the most important concepts and practical applications. The instructor will tell you which sections of each chapter will be covered.
- C. **HOMEWORK QUESTIONS:** Homework questions will be completed using the Mastering Biology software through Canvas. It is imperative that you complete the homework problems in order to understand the material and to do well on tests. Test questions will be taken directly from the homework, possibly with minor modifications.
- D. **BIBLICAL WORLDVIEW ESSAYS:** The purpose of this portion of the class is to develop your ability to analyze the complex issues associated with biology from the biblical worldview and to learn that you can defend your faith (1 Peter 3:15) using science. You will read articles or watch videos and then prepare essays that demonstrate your understanding of the topics.

Essays must follow the APA style according to the Publication Manual of the American

Psychological Association, 6th edition, except as noted in this paragraph. Essays should be around one-half page, single spaced, using Times New Roman 12 font. Essays should not be longer than one page. Do not include a title page or a reference page. Put a descriptive title and your name and date at the top of the page. Include the reference after the essay. You will be graded on content and understanding of the topics. Your writing should be clear and concise. Proper writing style including clarity, grammar, and punctuation will be considered during grading. Do not use first person. Discuss what the article or video said and means, not what you think about it. Make sure you use quotation marks as needed.

Plagiarism is defined as copying any part of a book or paper without identifying the author. This also includes taking another person's ideas and presenting them as your own.

- E. TESTS:** Questions used for the regular tests will be taken from the homework, possibly with minor modifications. All tests will be taken using the Mastering Biology software. Test questions for the comprehensive portion of the final will be taken from the regular tests. Lab final questions will be taken from the lab handouts.

Students not taking tests during the class period on campus will need to use the ProctorU test proctoring service. See the ProctorU addendum at the end of this syllabus.

- F. MISSED OR LATE HOMEWORK OR ESSAYS:** Grades on late homework and essays will be decreased for each day that they are late. Assignments that are more than one week late will not be accepted and will receive no credit.

- G. LAB PREPARATION AND REPORTS:** Lab handouts must be read before the lab period. Prelab assignments must be turned in on Canvas before participating in the lab. Lab reports should be completed and turned in on Canvas by the beginning of the next lab. Grades on late lab reports will be decreased for each day they are late. Lab reports that are turned in more than one week late will not be accepted and will receive no credit. Your laboratory final exam will include questions over these labs.

- H. LAB ATTENDANCE (BIOL 101):** Attendance at each laboratory is *required*. As labs are a hands-on activity, student lab skills accumulate during the cycle. Inconsistent attendance can result in a safety hazard as the student will not have the knowledge needed to use proper lab skills. Missing more than two labs (one week), even when excused by the university, may result in a lower grade. Excessive absences will result in the student will be withdrawn from the lab for safety reasons. *See the lab attendance policy posted on Canvas for details.*

- I. LAB SAFETY (BIOL 101):** Safety during lab activities must be observed at all times for your own safety, as well as the safety of others around you. Students performing lab experiments are responsible for planning and conducting experiments in accordance with the lab instructions and lab safety rules. Additional safety rules (when required) will be included in lab handouts. Lab safety will be discussed at the start of each lab so if you are late for lab you may not be allowed to attend. Each student who participates in a lab exercise must clean up their lab area when finished before leaving. **All students must take a lab safety quiz covering the safety rules and sign a safety contract before working in the lab.**

- J. HOW TO GET HELP:**

- Feel free to contact me via email or phone (see email address and phone number above).
- Office hours: Since I am an adjunct I do not have an office on campus and work during the

day. I am usually early for lab and am willing to help then or after the lab is over. Also, I am available for “chats” using Canvas by appointment.

The Clark Academic Center (learning@calvary.edu) is dedicated to providing free academic assistance for all CU students. Student tutors aid with all facets of the writing process, tutor in various subject areas, prepare students for exams and facilitate tests. Please take advantage of this service.

Students with disabilities have the responsibility of informing the DSS Director (dss@calvary.edu) of any disabling condition that may require support.

V. **GRADING** See grading scale in the university catalog.

BIOL 100

Chapter Review Questions	20%
Regular Exams	45%
Biblical Worldview Essays	25%
Final Examination (comprehensive)	10%

BIOL 101

Lab Investigations and Reports	100%
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VI. **MATERIALS – Required**

- A. **The Bible:** The Bible is a required textbook in every course at Calvary University. To facilitate academic level study, students are required to use for assignments and research an English translation or version of the Bible based on formal equivalence (meaning that the translation is generally word-for-word from the original languages), including any of the following: New American Standard (NASB, English Standard Version (ESV), New King James (NKJV), or King James (KJV). Other translations and versions based on dynamic equivalence (paraphrases, and thought-for-thought translations like NLT and NIV) may be used as supplemental sources. Please ask the professor if you have questions about a particular translation or version.
- B. **Mastering Biology Software:** It is required that you purchase access to the *Modified Mastering Biology* software. This is required to complete the homework and tests. The cost is approximately \$65. It will also allow access to many on-line helps that are useful for learning this material. **I will post detailed instructions on how to purchase access to the software on Canvas. Do not purchase the software without first reading this!** Access to Mastering Biology expires when the course is over. **Make sure you purchase the software associated with the textbook**, which is described below in the optional materials section.

VII. MATERIALS - Optional

A. Textbook

Campbell Biology: Concepts & Connections (8th Edition)

Authors: Jane B. Reece, Martha R. Taylor, Eric J. Simon, Jean L. Dickey and Kelly A. Hogan.

ISBN-10: 0321885325 ISBN-13: 978-0321885326

San Francisco, CA: Benjamin Cummings, 2014

The textbook is optional. There will be a reserve copy in the library. If you want a hard copy of your own, consider purchasing a used version on the internet (typically around \$50). New versions are around \$150.

VIII. BIBLIOGRAPHY

Some **supplementary** books that would be very useful for understanding the creation/evolution topics are:

- 1) *Creation: Facts of Life* by Gary Parker (1994).
- 2) *Evolution Exposed: Biology* by Roger Patterson (2007).
- 3) *The New Answers Book 1, 2, 3, and 4* by Ken Ham, et al. (2007-2013).
- 4) *One Race One Blood* by Ken Ham and A. Charles Ware. (2010).
- 5) *In Six Days* by multiple authors. (2011) (See the biology-related chapters).

All of these books (and several others) are **FREE** at <https://answersingenesis.org/answers/books/>

VIII. TENTATIVE CLASS SCHEDULE:

Any changes to the schedule will be announced in class and posted on the student portal.

LECTURE TOPIC(S)	CHAPTER(S)	LAB
Introduction to science, biology and the foundations of creation science.	1	<ul style="list-style-type: none"> • Lab Safety • Introduction to the scientific method
The Chemical Basis of Life	2	Acids, bases and pH
The Molecules of Cells	3	Food analysis
The Cell	4	Microscopy
The Working Cell	5	Diffusion and osmosis
How Cells Harvest Chemical Energy	6	Enzyme activity
Photosynthesis	7	<ul style="list-style-type: none"> • Production of cheese • Leaf chromatography
The Cellular Basis of Reproduction and Inheritance	8	Genetics simulation
Patterns of Inheritance	9	<ul style="list-style-type: none"> • Inherited traits • Pedigrees
Molecular Biology and the Gene	10	Extracting DNA
Genes/DNA Technology	Parts of 11 and 12	DNA profiling and forensics
Creation and Evolution	<ul style="list-style-type: none"> • Parts of 13 to 15 • Material from AIG, CMI, and ICR 	
Microbiology	Parts of 16 and 24	<ul style="list-style-type: none"> • Microbes in the environment • Antibiotic sensitivity testing
Physiology	Parts of 20, 21, 22, 23, 25	Heart function

ProctorU Addendum

Calvary University uses ProctorU test proctoring service. ProctorU is a live online proctoring service that allows you to take your exam from the comfort of your home. ProctorU is available 24/7, however, **you will need to schedule your proctoring session at least 72 hours in advance to avoid any on-demand scheduling fees.** Creating a ProctorU account is simple. You can do so by going to <https://go.proctoru.com/students/users/new?institution=2045>.

Students must read all information and comply with all directions below to be successful for their proctored exam experience. Calvary University hopes that students will have a smooth experience, and to decrease student anxiety and increase success, please use this guide to help you plan for your test. Please note that, per ProctorU, there will be penalties for students who miss their testing window. Technical trouble will not be an excuse for missing the window. Therefore, pay attention to all details within this guide, and all links included.

System Requirements: Please see the information below supplied by ProctorU for system requirements. If your computer does not have these capabilities, please consider borrowing a computer as you will still be required to complete the exam using the live proctor system with ProctorU. Please note that you will not be able to take your exam(s) in the Calvary University Library due to the activity that will be picked up in a public place.

In order to use ProctorU, you will need a high-speed internet connection, a webcam (internal or external), a Windows or Apple Operating System, and a government issued photo ID. ProctorU recommends that you visit <https://test-it-out.proctoru.com/> prior to your proctoring session to test your equipment. They recommend you click on the button that says “connect to a live person” to fully test out your equipment. If using Firefox, please make sure that you are using the current version of your Firefox browser and have downloaded the ProctorU extension available at <https://www.proctoru.com/firefox>.

Type	Minimum	Recommended	Calvary University Minimum
Web Camera	640×480 resolution	1280×720 resolution	1280×720 resolution
PC Users	Windows Vista	Windows 10 (10 S is not supported)	same
Mac Users	OS X 10.5 or higher	OS X 10.13 High	same

		Sierra	
Internet Download Speed	.768 Mbps	1.5 Mbps	3 Mbps
Internet Upload Speed	.384 Mbps	1 Mbps	2 Mbps
RAM	1024 MB	2 GB	same
Ports	1935, 843, 80, 443, 61613, UDP/TCP	1935, 843, 80, 443, 61613, UDP/TCP	same

- Desktop computer or laptop (not a tablet, Chromebook or cell phone).
- Webcam and microphone (built-in or external) – test your webcam at <https://test.webrtc.org/>
- Connection to network with sufficient internet speed: at least 3 Mbps download speed and 2 Mbps upload – test internet speed at www.speedtest.net
- Operating systems: Windows Vista or newer, Mac OS X 10.5 – or newer
- Browser with pop-up blocker disabled: Google Chrome v39 or later, Mozilla Firefox v34 or later.

Additionally, please visit and review the test-taker resource center by going to <https://www.proctoru.com/proctoru-live-resource-center>. You should expect the startup process with the proctor to take about 10-15 minutes. However, this time will not affect your exam time. Please feel free to direct any questions to the student support team via the live chat within your account.

******If you have any questions or concerns, contact Proctor U’s technical support team 24/7 via their live chat support at <https://www.proctoru.com/contact-us>**

Costs for ProctorU exams are listed below and are payable to ProctorU at the time of the test. These costs assume that a student will schedule their exam at least 72 hours in advance of the exam start time:

- 60 minutes or less - \$8
- 61 – 120 minutes - \$10
- 121 – 180 minutes - \$12

For those not scheduling an exam at least 72 hours in advance, late scheduling charges are added in addition to the above fee structure. There are two options for late scheduling:

- “Take It Soon” allows a test to be scheduled less than 72 hours but more than 24 hours before the desired start time. This option includes an additional fee of \$8.00. (Total cost for a 60 minute exam scheduled as “Take It Soon” would be \$16.)
- “Take It Now” allows a test to be taken on-demand with no appointment needed. This option includes an additional fee of \$12.00. (Total cost for a 60 minute exam scheduled as “Take It Now” would be \$20.)

These options are for the convenience of the examinee. Any charges applicable to the examinee must be paid with a credit or debit card. The test taker will be required to enter payment information on a secure page connected to a third-party card processor. The page is encrypted and secure and ProctorU does not see or store any credit card data.

Examinees will be required to re-enter payment information each time new charges are incurred.