



15800 Calvary Rd  
Kansas City, MO 64147

# Syllabus

<b>COURSE:</b>	BIOL100T&N-T Survey of Biological Science (class) BIOL101T&N (lab)
<b>CREDIT:</b>	3 Semester Hours (class). 2 Semester Hours (lab).
<b>SEMESTER:</b>	Fall 2022
<b>INSTRUCTOR:</b>	Chris Basel
<b>CONTACT INFO:</b>	Phone: 816-425-6201 E-mail: <a href="mailto:chris.basel@calvary.edu">chris.basel@calvary.edu</a> Office: Ed. 224
<b>MEETING TIME:</b>	Lecture (BIOL100T): Tuesday 8:00 – 11:00 AM BIOL100 N-T Online BIOL101 T: Tuesday 8:00 – 11:00 AM BIOL101 N Online
<b>LOCATION:</b>	BIOL100T – Ed. 118 BIOL100 N-T – Online BIOL101T – Ed. 118 BIOL101 N – Online

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:

BIOL100 TN-T (3 hours) 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 BIOL101 is required.

*This course is offered in two formats: in-person and online. Students registered for in-person attend the classes in person, online students attend the classes via the online classroom. For both in-person and online students, assignments and interaction outside of the class period are done in the learning management system.*

You must choose one of the following lab options:

BIOL101T (2 hours) This course is the lab component of BIOL100 and must be taken concurrent with BIOL100. (Fee: \$30)

BIOL101N (2 hours) Survey of Biological Science Lab (Online only)  
This course is a second option for the lab component of BIOL100. If BIOL101N is taken, it must be concurrent with BIOL100. (Fee: approximately \$250)

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

## 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.
  - 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. 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. Most of the 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. *For details about how to write the essays, see the Essay Guidelines in Canvas.*

*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:** Most of the 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.

All online students and on-campus students not taking tests during the class period must use the ProctorU test proctoring service. *The Exam Policy in Canvas gives more details. Also 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 three days late will not be accepted and will receive no credit.

**G. LAB PREPARATION AND REPORTS:**

**Students taking BIOL101T:** Lab instructions must be read before completing each lab. Lab reports should be completed and turned in via Canvas by the due date given in Canvas. Grades on late lab reports will be decreased for each day they are late. Lab reports that are turned in more than three days late will not be accepted and will receive no credit.

**Students taking BIOL101N:** Prepare lab reports as instructed by the software. Grades on late lab reports will be decreased for each day they are late. Lab reports that are turned in more than three days late will not be accepted and will receive no credit.

**H. LAB ATTENDANCE:**

**BIOL101 T:** Lab attendance is required except for absences officially excused by the university, or for extenuating circumstances such as illness or death in the family. Labs missed for any reason must be made up at a later date, typically the next week. Missing more than two labs, even when excused by the university, may result in a lower grade. *See the lab attendance policy in Canvas for details.*

**BIOL101 N:** Lab is conducted remotely and attendance at a specific time is not required.

**I. LAB SAFETY:**

**Students taking BIOL101 T:** 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. Safety will be discussed at the start of each lab, so if you are late, 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.**

**Students taking BIOL101 N:** Safety during lab activities must be observed at all times. 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) may be included with each lab. **All students must take a lab safety quiz covering the safety rules and sign a safety contract before completing any labs.**

**J. HOW TO GET HELP:**

- Feel free to contact me via email or phone (see email address and phone number above).
- Office hours: See the office hours posted on my office door. I will share these the first day of class too.
- Virtual office hours: Teams meetings can be set up with individuals upon request.

*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 Accommodations Support Coordinator (aso@calvary.edu) of any disabling condition that may require support.*

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

**BIOL100 T&N-T**

Chapter Review Questions	15%
Exams	65%
Biblical Worldview Essays	20%

**BIOL101 T**

Lab Investigations and Reports	85%
Midterm	5%
Final	10%

**BIOL101 N**

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. See comments below about purchasing it with the eText, which is an option. **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.
- C. Lab kit (*only for students taking BIOL101 N*): It is required that you purchase the lab kit prepared for this class to complete the lab experiments for BIOL101 N. The cost is approximately \$250. Detailed instructions will be given on the class website in Canvas.

## VII. MATERIALS - Optional

### A. Textbook

Campbell Biology: Concepts & Connections (8<sup>th</sup> 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; **however, it is strongly recommended**. 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. You can buy the eText bundled with the Mastering software at a discount but be aware that you only have access for the semester.

## 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.

<b>LECTURE TOPIC(S)</b>	<b>CHAPTER(S)</b>	<b>LAB</b>
Introduction to science, biology and the foundations of creation science.	1	<ul style="list-style-type: none"> <li>• Lab Safety</li> <li>• Introduction to the scientific method</li> </ul>
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"> <li>• Production of cheese</li> <li>• Leaf chromatography</li> </ul>
The Cellular Basis of Reproduction and Inheritance	8	Genetics simulation
Patterns of Inheritance	9	<ul style="list-style-type: none"> <li>• Inherited traits</li> <li>• Pedigrees</li> </ul>
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"> <li>• Parts of 13 to 15</li> <li>• Material from AIG, CMI, and ICR</li> </ul>	
Microbiology	Parts of 16 and 24	<ul style="list-style-type: none"> <li>• Microbes in the environment</li> <li>• Antibiotic sensitivity testing</li> </ul>
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 Sierra	same
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](http://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.