SCHOLÉ ACADEMY
CLASSICAL ACADEMIC PRESS

Biology

Exploring Creation with Biology

Yearlong 2019/20

ELIGIBLE STUDENTS:

Grades 9-11, 12th graders welcome: *who are able to type and have writing skills that will allow them to respond to questions regarding both class discussions and independent reading assignments. Students should also be prepared to participate in lab experiments, which will be conducted both during class time and independently.*

Please note: This course will include independent reading, which will provide a basis for in-class discussion. Students will be required to be prepared with lab materials in order to work through lab experiments, questions about labs, and discussion of results during scheduled dates for labs.

Class Dates: Begin Wednesday, September 4, 2019; running through Friday, May 22, 2020.
Class Times: **Monday, Wednesday, & Fridays: 2:00 — 3:15 pm** (EST)
Instructor: Sarabeth Borowiec
E-mail: sborowiec@scholeacademy.com

SCHEDULE FOR *BIOLOGY:*

CLASS SESSIONS DATES:

Classes will take place on Monday, Wednesday, & Fridays: 2:00 — 3:15 pm (EST) for 32 weeks and 95 classes on the following dates*

September (12): 4, 6, 9, 11, 13, 16, 18, 20, 23, 25, 27, 30
October (13): 2, 4, 7, 9, 11, 14, 16, 18, 21, 23, 25, 28, 30
November (10): 1, 4, 6, 8, 11, 13, 15, 18, 20, 22 **[Thanksgiving Break]**
December (6): 2, 4, 6, 9, 11, 13 **[Christmas Break]**
January (12): **[Christmas Break]** 6, 8, 10, 13, 15, 17, **[End 1st Semester]** 20, 22, 24, 27, 29, 31
February (9): 3, 5, 7, 10, 12, 14 **[Winter Break]** 24, 26, 28
March (13): 2, 4, 6, 9, 11, 13, 16, 18, 20, 23, 25, 27, 30
April (10): 1, 3 **[Holy Week]** 13, 15, 17, 20, 22, 24, 27, 29
May (10): 1, 4, 6, 8, 11, 13, 15, 18, 20, 22 **[End 2nd Semester]**

**Please note the above dates and times are the anticipated class sessions for this course. However, all dates are subject to change as the instructor's circumstances might dictate (e.g. illness, family emergency). Any classes canceled by the instructor will be made up at an alternate time designated by the instructor.*

BIOLOGY COURSE MAP:

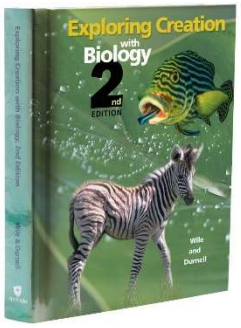
QUARTER 1
1. Biology: The Study of Life
2. The Chemistry of Life
3. The Cell

QUARTER 2
1. Cellular Reproduction and DNA
2. Mendelian Genetics
3. Kingdom Monera

QUARTER 3
1. Clear Terms for Origins
2. Ecology
3. Invertebrates
4. Phylum Arthropoda

QUARTER 4
1. Phylum Chordata
2. Plants: Anatomy & Classification
3. Plants: Physiology & Reproduction

OFFICE HOURS: In addition to scheduled class times, teachers will generally designate an optional weekly session as needed. During "Office Hours" students may raise questions, seek assistance, or review class material.



REQUIRED COURSE TEXTS:
Exploring Creation with Biology, 2nd Edition by Wile and Durnell
Apologia Biology Dissection Kit
A list of additional lab materials and supplies will be provided.

OPTIONAL COURSE MATERIALS:
Apologia Biology Lab Set with Microscope
Apologia Biology Lab Set

BIOLOGY COURSE DESCRIPTION:

What is the chief end of man? Man's chief end is to glorify God, and to enjoy him forever. In our Biology course students will study God's living creation. In looking deeply and broadly at the living world, our response should be to glorify our Creator. In glorifying God, we begin to enjoy him now. As we move through our course, we will rest with this end in mind.

Our time together as a class will include opportunities for students to both listen to further explanation of content included in their assigned reading, and to clearly present what they have learned from their independent study. Students will be given opportunities to write about currently debated topics in the field of biology. Students will write about biological ideas and concepts weekly in response to questions that require them to both think clearly and accurately apply what they are learning. Our class will remember and recall learning from earlier chapters through review on a regular basis to sustain a foundation for deeper study.

Students of Schole Academy's biology course will be expected to actively participate in learning through independent study, discussion, and laboratory experimentation. This course contains a substantial laboratory component in which students will learn basic microscopy and dissection, employ the scientific method, and learn to write a formal lab report. Most laboratory exercises will take place during classroom time and will be instructor-led. At times, for labs that require multiple days, students will need to complete some laboratory preparation at home prior to class.

One week of class time will be given to exploring terms used to describe a variety of Christian views on the origin of life and the origin of human life. These views will include young earth creationism, old earth creationism, intelligent design, and theistic evolution. The goal of these conversations will be to inform students about these terms, to present reasons for these positions in the debate, and to note questions that might be asked of each view. Students will be given the opportunity to write to clarify their point of view, or to support a view separate from what they hold to in an effort to more fully examine that view. Students will <u>not be required</u> to accept one view over another, and they will be encouraged to seek the counsel of the Lord, their church, their family, and their own study to grow in their understanding of the long history of this debate. Ephesians 1:4-5 reminds us that ***Christ chose us in him before the creation of the world*** to be holy and blameless in his sight. In love we were predestined for adoption to sonship through Jesus Christ, in accordance with his pleasure and will. Even in questioning the science of how and when life and humanity began, we may rest in knowing how and when and through Whom we are called to be holy and blameless.

At Schole Academy, we have carefully considered how we should engage our contemporary culture as those who believe that Christ is the Truth (John 14:6), and that all truth has its source in him. We think it is important to provide our upper school students (in grades 7-12) with tools and opportunities for critically examining various cultural trends, issues and more through the lens of orthodox, Christian beliefs. Being confident in the truth revealed

to us in creation, the Scriptures, and the tradition of the church, we are not afraid to follow the truth and its implications nor to address error and falsehood. Read more about our Faith & Culture here.

STUDENT EXPECTATIONS: EXECUTIVE FUNCTION SKILLS

Students enrolling in Scholé Academy's Biology will be expected to show development of Executive Function Skills throughout the year. Executive Function Skills speaks to a set of qualities and skill sets students can develop and hone to better approach the courses, lectures, readings, and teachers they will face in their future academic coursework.

Each teacher will invariably have his own set of requirements and skills he requires students to bring to their studies. *Generally* speaking, I believe there are five such qualities that are necessary for my students in various subjects; and I believe they would be accepted as "good" by many other teachers as well.

1. An Engaged Student: One who is willing to step into the arena of class discussion, ask questions, supply answers, generate the internal dialogue necessary to determine if what's being discussed is important and necessary to himself.

2. Note Taking: A student who during and after being engaged with the class has been trained to note important and relevant content in an organized fashion (Cornell Notes would be a great option). His notes would then be consulted, independently, for application in assignments and assessments.

3. Attention to Detail & Preparedness: These students are ones who consistently adhere to deadlines, submission requirements, adhering to style guides and codes, confirm technology is working prior to the start of class, be responsible to determine how to proceed after an absence, be responsible for consulting his course syllabus and adjusting as the class proceeds, etc.

4. Employ Critiques: These students are ones who receive feedback to one of their submissions, and then are sure to apply that feedback to future assignments rather than repeating mistakes. These students also glean information from the live class critiques of fellow students and note mistakes to avoid by learning from others.

5. Initiative/Maturity: This student would hear the teacher comments and be able to assess whether or not the teacher was describing his work, and then take the initiative to schedule office hours with his teacher if necessary.

STUDENT EXPECTATIONS IN ACTION

Students will be studying Biological topics and concepts found in Exploring Creation with Biology (2nd Edition). The ultimate goal for the student will be to understand the scope and nature of the field of Biology and to acquire knowledge and skills to allow them to think well about this rapidly changing field throughout their lives. Students will be assigned reading assignments, writing assignments, and assignments that cause them to review content studied previously. Students will participate in labs during class time as well as independently (especially when labs require many days for observations). Students will learn to write a formal lab report, and will be required to submit lab reports for each lab (excluding demonstration style labs). Students will have an opportunity to share independent research on topics of interest related to selected topics of study. A writing prompt will be provided for students to write an essay in which they defend a particular Christian viewpoint on the origin of life and human life.

Students will be tested at the close of each unit listed in the syllabus (excluding "Clear Terms for Origins").

In this class, students will be expected to listen attentively, and participate actively in class discussions and practices. Students are expected to arrive to class on time and with all assigned material completed. The instructor will facilitate learning for the student, but the responsibility for staying up-to-date with classwork and assignments ultimately falls to the student.

Students who have not submitted their homework to the appropriate Schoology assignment folder prior to the start of class will not be permitted to join the live class session. Those students will be invited into a separate Zoom breakout room to work privately until they have completed the day's assignment. After they have completed their homework submission, they will be permitted to rejoin the class in session. A day spent in a breakout room will constitute an absence from class.

All assignments will be due into the appropriate Schoology Assignment folder prior to the start of class each day. Students turning in late work will earn a 10% penalty for each day the assignment is late. Students will submit their work by scanning their homework pages and uploading it into the Schoology assignment window. Photographs of completed assignments will not be accepted as they are incredibly difficult to read.

STUDENT EVALUATION: GRADING

While pursing Biology through Scholé Academy will be "restful", we also recognize the need to provide grades for students who will be using this course as part of their prepared college transcript. It's a delicate balance to achieve both restful learning and excellent academic performance. Earning a specific grade should not overshadow achievement goals for mastery of this discipline.

I can assign the following grades to your student's level of achievement: *magna cum laude* (with great praise); *cum laude* (with praise); *satis* (sufficient, satisfactory) and *non satis* (not sufficient).

Ideally, every average student working diligently should do praiseworthy work (cum laude). Those who excel beyond this expectation will be the *magna cum laude* students. Students who do adequate but not praiseworthy work be designated *satis*. *Non satis* means lacking sufficiency or adequacy.

Inasmuch as you might be fully on board with this grading method in theory, there will undoubtedly be the need to complete a college transcript with either a numeric or traditional letter grade. Traditional percentage grades will be provided and will be readily accessed on the *Biology* Schoology page. Additionally, Mrs. Borowiec will provide a transcript of that grade to the requesting parent at the end of the year.

STUDENT EVALUATION: MASTERY PORTRAIT

Mastery portrait: Students in the Biology class should master the following skills, ideas, and knowledge taught:

- Understand the importance of classification in the field of biology.
- Master vocabulary and central concepts in the field of biology.
- Practice proper and safe laboratory technique and procedures.
- Interpret results and analyze scientific data.
- Apply the scientific method to the study of life sciences.
- Learn to orally present independent research on a topic in the field of Biology.
- Document and draw observations of nature in a journal.
- Be able to clearly define terms which are important for navigating the ongoing debate concerning the origins of life and human life.
- Students should grow in the student virtue of humility as they encounter the vast, complex, and beautiful field of Biology. Growth in perseverance, constancy, and patience should also occur organically as students steadily attend to and complete the work that is before them.

STUDENT EVALUATION: ASSIGNMENTS, TYPES & WEIGHTS

Mrs. Borowiec will communicate with students regarding assignment feedback and grading through the free online grading system, Schoology. The teacher will provide students with more detailed information and access to the Biology course page.

Student's grades will be comprised of:

1. Exams: 35% of the grade
2. Class Participation (Discussion & Notes): 20% of the grade
3. Homework & Response Papers: 25% of the grade.
4. Lab Reports: 20% of the grade

STUDENT EVALUATION: ACADEMIC DISHONESTY

Students will often take assessment tests and/or quizzes privately at home. Students are on their honor to abide by Scholé Academy's Learning Philosophy which assumes the personal cultivation of Student-Virtues described in the Student-Parent Handbook.

Additionally, plagiarism is a serious and punishable offense. Proper citation of all sources is essential to the academic endeavor. Remember to cite any source if the information is not common knowledge or is an opinion obtained through any source. A plagiarized assignment will result in a failing grade. Students should consult their chosen style manual for specific direction on obtaining, quoting and paraphrasing sources.

THE VIRTUAL CLASSROOM:

We will be using the free online "virtual classroom" software provided by Zoom, one of the leading companies that provides such software. The virtual classroom will provide students with interactive audio, text chat and an interactive whiteboard in which texts, diagrams, video and other media can be displayed and analyzed. We will provide students with a link (via email) that will enable students to join the virtual classroom.

Specific information regarding the technology used by Scholé Academy (including required technology) can be found by visiting the Technology in the Classroom section of the Student Parent Handbook.

Students will submit documents by scanning and uploading them to their personal computer. They will submit their work to the *Biology* Schoology assignment page (access granted after enrollment is secured).

ABOUT THE INSTRUCTOR:

Sarabeth Borowiec graduated from Grove City College with a B.S. in Molecular Biology. At Grove City College, she participated in research involving sequencing mitochondrial DNA. During an internship at the University of Pittsburgh, she studied the impact of select heavy metals on cellular and molecular mechanisms of cells in the respiratory system. She has classically educated her daughters at home for the past five years, and has taught a variety of classes for homeschooled students including writing, knitting, and Latin. She is excited to share her love of the intricacies found in the context of biology with the students of Scholé Academy. Her desire is that her students will not only deepen their knowledge and understanding of the world around them, but also that they will integrate that learning throughout their lives that they might act justly, love mercy, and walk humbly with God.