BIOL 1406: Biology for Science Majors I Syllabus

General Information
College Name: North Lake College
Division: Mathematics and Natural Sciences
Semester/Term & Year: 2018 Spring

Instructor Information
Name: Amanda Mello, (Science Center Manager)
DCCCD E-mail Address: amello@dccc.edu (preferred method of communication)
Telephone: 972-273-3279
Office Number: P-33 (By appointment only)
Website(s): eCampus http://ecampus.dcccd.edu and North Lake College http://www.northlakecollege.edu

Course Information
Course Number: BIOL 1406
Section Number: 73445 & 73446
Credit Hours: 4
Class Meeting Time: This is a hybrid course.
  Lecture: Online with collaborate online sessions possible.
  Lab: Fridays 8:30am -11:45am
Course Title: Biology for Science Majors I
Course Description: Course Description: Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included. Laboratory activities will reinforce these concepts. (3 Lec. 3 Lab.)
Course Prerequisites: College level ready in Reading and Writing.
Program Level Objectives: Biology 1406 develops the following objectives from the Texas Higher Education Coordinating Board: Communications (written and visual), critical thinking, empirical and quantitative skills.

Measurable Student Learning Outcomes (SLOs)
Lecture Class Learning Outcomes:
  Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included.
  Upon successful completion of this course, students will:
  • Describe the characteristics of life.
  • Explain the methods of inquiry used by scientists.
  • Identify the basic requirements of life and the properties of the major molecules needed for life.
  • Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
  • Describe the structure of cell membranes and the movement of molecules across a membrane.
  • Identify the substrates, products, and important chemical pathways in metabolism.
  • Identify the principles of inheritance and solve classical genetic problems.
  • Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
  • Describe the unity and diversity of life and the evidence for evolution through natural selection.

Laboratory Class Learning Outcomes:
This laboratory-based course accompanies Biology 1306, Biology for Science Majors I. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and
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chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included.

Upon successful completion of this course, students will:

• Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
• Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
• Communicate effectively the results of scientific investigations.
• Describe the characteristics of life. Explain the methods of inquiry used by scientist.
• Identify the basic properties of substances needed for life.
• Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
• Describe the structure of cell membranes and the movement of molecules across a membrane.
• Identify the substrates, products, and important chemical pathways in metabolism.
• Identify the principles of inheritance and solve classical genetic problems.
• Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
• Describe the unity and diversity of life and the evidence for evolution through natural selection.

Course Outline

Exam 1
1. Introduction: Themes in the Study of Life
2. The Chemical Context of Water
3. Water and Life

Exam 2
4. Carbon and the Molecular Diversity of Life
5. The Structure and Function of Large Biomolecules
6. A Tour of the Cell

Exam 3
7. Membrane Structure and Function
8. An Introduction to Metabolism
9. Cellular Respiration and Fermentation

Exam 4
10. Photosynthesis
11. Cell Communication
12. The Cell Cycle

Exam 5
13. Meiosis and Sexual Life Cycles
14. Mendel and the Gene Idea
15. The Chromosomal Basis of Inheritance

Exam 6
16. The Molecular Basis of Inheritance
17. From Gene to Protein

Required or Recommended Materials

Lecture Materials
Text: Biology (North Lake College Custom Version) or you may purchase the entire book Biology (please see my note on this below).
Author: Campbell/Reece
Custom North Lake Only Book ISBN: 9781269871174
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Copyright Year: 2011
Publisher: Pearson Learning Solutions

*My personal note. Please consider using the larger edition of the book. It will assist you in future classes (anatomy and physiology, ecology, microbiology, and any upper division zoology or botany class). Campbell’s 11th edition is the latest version. The 9th or 10th would be adequate for your understanding. There will be no required work out of the text book. A copy has been made available to you in the library and the Science Center in P-333. If you plan on taking the next course in sequence, BIOL 1407, buying the larger version will actually be a savings on purchasing the two individual texts.

Computer Requirements: Please have the Microsoft Office Suite. A free copy of Microsoft Office is available to you while you are a DCCCD Student. Please use the following link Click HERE to access that free resource. You should be able to view power point, author documents, hear audio and play MP4 video files. Also you should have a computer that is adequate to run basic blackboard functions. We may have collaborate sessions. While a webcam and mic will enhance your ability to participate, there is a very good chat client that will allow you to participate adequately without those tools.

Pearson Mastering Biology: You do not need the access code! There is a Mastering Course for you to access if you wish. The materials on the mastering site will help, and the e-book is pretty handy. However, it is not required.

Laboratory Materials
General Biology Laboratory Manual for Science Majors Biology 1406 Lab Custom Edition for North Lake College by BlueDoor publishing with contributing authors.*

Please see your laboratory instructor on the first day to confirm that she/he is using this text.

ISBN for Textbooks
LECTURE: Custom Book: 9781269871174 or Campbell’s 11th: 9780134093413
LABORATORY: 978-1-68135-558-0

Evaluation Procedures
Lecture Evaluation (70%): Your lecture is based on a combination of lecture exams, journals, quizzes, surveys etc. – in reality whatever I give you in lecture could be part of your grade configuration. The table below will outline how your grade is calculated. Some important notes:

- Lab is not weighted the same as lecture. This means that you cannot use the MY GRADES section of blackboard to calculate your grade. Do not use MY GRADES section to calculate grades, but it is a good source to see how you did on individual items.
- Pay attention to due dates for quizzes, journals, and all other assignments. When an item expires, it will no longer be available to take.
- Additional graded items may be assigned during the semester, however this is unlikely.
- Lecture exams will be given in the testing center at North Lake College (north, central, and south campus locations) and must be completed before the deadline expires.
- You may propose an alternate location for testing; however, that must be done with approval and may take up to two weeks to complete. The instructor reserves the right of approval in all non-North Lake testing centers.
- Lecture exams are computer based and you will not need additional testing materials.
- Please see the course calendar for due dates for the exams. There is flexibility built in to the course, but in order to promote the best learning experience, the dates for exams are final and non-negotiable. If you encounter a mitigating circumstance that prohibits you from completing your assignments on time you may appeal. First, you must have extreme
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circumstances. Secondly it must be extensively documented. Third, if extra time is warranted, the attempt will not be eligible for curve, bonus, or retaking.

- Exams and assignments are to be completed on-time, without exception. Should unusual circumstances arise, regardless of their nature, they must be well documented, subject for interpretation, and extreme.
- Any exams that are time-stamped as occurring during your regularly scheduled lecture or lab period will be lowered on letter grade (unless prior arrangements or permissions are granted).

Your lecture grade (70% of final grade) is calculated as follows.

Exam 1 = 100pts  Week 2 Thursday @5PM
Exam 2 = 100pts  Week 5 Thursday @5PM
Exam 3 = 100pts  Week 8 Thursday @5PM
Exam 4 = 100pts  Week 12 Thursday @5PM
Exam 5 = 100pts  Week 13 Thursday @5PM
Exam 6 = 100pts  Week 16 Thursday @5PM
Quizzes 1-6 & Intro Quiz 10pts each = 70pts (due before the corresponding exam)
Journals 1-4 10pts each = 40pts (due when subject appropriate)
SLO Quiz  20pts due Thursday before finals @ 5PM.
Total Lecture Points = 730pts

If you wish to calculate your lecture points, divide your points in lecture assignments by 730. Remember this will only give you your proficiency in lecture, your lab still accounts for 30% of your final grade.

Why are all these exams due on Thursdays at 5PM? Isn’t the testing center open on Fridays and Saturdays? Yes it is; however, on Friday and Saturday the testing center is prone to long lines and shorter hours. Ergo, students often spend HOURS in lines, and in some cases turned away from taking tests. Also waiting to the last minute of the closing of the testing center makes for high anxiety. So the deadline for all tests is on a Thursday at 5PM. If you need the weekend to take tests you will just have to take the exam five days earlier.

Exams and assignments are to be completed on-time, without exception. Should unusual circumstances arise, regardless of their nature, they must be well documented, subject for interpretation, and extreme.

SOME ADDITIONAL GRADING NOTES:

- Each exam may be taken twice, with your grade the average of those two attempts. If you score lower on the 2nd attempt, it will lower your grade.
- Each unit quiz has unlimited attempts. Your grade will be the average all attempts.
- Quizzes, journals, etc. are due at the same due date of corresponding exams.
- Journals will be strictly graded according to the rubric provided. Please follow those instructions carefully. Plagiarism will be severely punished.

Bonus opportunities may be possible. Check announcements or ask about opportunities.
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Laboratory Evaluation (30%): Your lab grade is based on lab exams and a combination of lab reports, pre quizzes and post quizzes may be given during the semester. Additional graded activities may be assigned during the semester. Your grade in lab is based on an instructor determined percentile of all graded exams, quizzes, reports and other projects as may be assigned during the semester. Your lab grade is 30% of your total grade in Biology 1406. There is no makeup for lab activities. Your lab instructor has the right to modify this formula. Please attend lab regularly and communicate with your laboratory instructor to determine your academic performance in that facet of the class.

Calculating your final grade: Your final class average will be calculated using your lecture grade and your lab grade. You may use the following formula to help you calculate your grade: (points you earned in lecture divided by total points available in lecture) x 0.7 + (points you earned lab divided by the total points available in lab) x 0.3 = your percentage. Please observe the order of operations when calculating your grade.

Grading Scale
Lecture 70% + Lab 30% using the following scale.
90-100=A
80-89=B
70-79=C
60-69=D
59 and below=F
*Rounding to the nearest whole number using 0.5.

Exams and Assignments
Lecture:
Exams – as outlined above there are six lecture exams that correspond to chapter content.
Quizzes – all units will have quizzes that correspond to the exam material. Taking them will help you prepare for the exams.
Journals – there will be four journals. Please complete them when you have enough information to do so. Except for the genetics journal, do not attach a document! Note: Please keep up with the work in a timely manner. You may be prompted during the semester if you are not keeping up.

Laboratory:
Please see your lab instructor for a calendar and complete list of assignments.

Lecture and Laboratory Attendance:
While lecture is not attended in person, students should login and check e-campus at least once a week. This will be monitored and assessed. Laboratory attendance is required. If attendance in lab or on e-campus is not meeting expectations the instructor may modify the syllabus to include a point value for attendance.

The last day to drop this class with a “W” is April 12th.

Institutional Policies
Institutional Policies Link
North Lake College Institutional Policies
Please read this section carefully. These policies are important to me!

E-mail Policy:
E-mail will be checked on Monday mornings and you can expect about a 24hr turn around on all emails during the work week. I check my email for the last time Friday at noon, and you can expect all weekend emails to be answered the following Monday. Knowing that I will not check my email over the weekend, please consolidate your ideas. I would cringe to see an inbox with multiple emails from a single user. Hardly something to laugh about, but I once had 30 emails from a single student over a weekend. Certain e-mail subjects will be ignored. Per FERPA guidelines I cannot discuss your grades over email. I will also not respond to any emails that ask for an “extra day” or “extra time.” The district has a very tight SPAM filter, and if you do not feel like your email is being addressed in a timely manner, call me.

Please keep all communications respectful and classy.

Most likely, students will not send unsolicited email espousing a cause, religion, or activity to other class participants and will not add other class participants to any listserves or other entity which distributes unwanted email or material.

Office Hours Policy:
My day job, even though it is on-campus, needs to be considered as an unavailable time for me. Please email me for an appointment. I am often in and out of the office all day long so emailing me for an appointment is also the best way to ensure I'm available to meet with you.

End of Class Procedures:
When this class ends, it ends. When the final exam deadline passes, I will take down the entire course. I do this so I can configure the grades properly. This means that if you wish to preserve anything from the course, you should make sure that you have downloaded your gradebook or any materials before that day.

My Academic Dishonesty Policy:
I will not tolerate cheating. If you are caught plagiarizing your journals, cheating in the testing center, or other manners or cheating, my penalty is failure in the entire course. Not just an F on the assignment, you will fail the course.

Quiz Policy:
I get a lot of questions about my quizzes and I would like to address it here. When you take a quiz, it does not tell you what you got right and what you got wrong. This is intentional. Like a good science experiment, we run the process and then we get results. Interpreting the results is the cornerstone of the scientific process. We often don't know what went right and what went wrong. The science, is sorting this out. You will get the hang of it. With the quizzes I encourage you to collaborate with others, talk through the answers, and learn. When you reaffirm you got something right, you have taken the guesswork out of future responses. When you research something you thought you got right, but in-fact got wrong, you truly learn. Lastly, when you research a question you got completely wrong, you are uncovering areas you may need to study further.

Certification of Attendance Policy:
You have three assignments to complete in the first week. You must (a) to post in the discussion board, (2) complete the first journal, and (3) take the intro quiz. The discussion board post is imperative because this is what I use to certify your attendance. Which means if you skip this or post late, it may impact your financial aid status in the class! If you click on the START HERE link in e-campus more information is available. (use the navigation on the left and look for "Discussions" – post in GET TO KNOW YOUR CLASSMATES).

Computer Glitch Policy:
You may encounter a computer glitch while you are taking a quiz. This happens. I empathize, it happens to me all the time. So here is what you do. Make sure you have documented the glitch. Secondly, save your documentation. Please do not ask for quiz resets as I will not be resetting quizzes over the semester. Usually I can see that the glitch has occurred because it looks like the quiz was abandoned – I will delete two glitch quizzes per student over the semester. If you think somehow quiz glitches have altered your final grade, you may present your documentation for consideration of a grade recalculation. I can tell you that in the history of teaching this class, that has never occurred, but I am willing to accept the discussion. Systemic and habitual computer failure will be considered a student’s responsibility.

Items for your consideration
I would like you to look at the following items for your consideration.

- Science Center Tutoring
- The Summer Hawaiian Field Studies
- SAGE Scholars

Science Center Tutoring

The Science Center (SC) provides student services in the following subjects (majors and non-majors): biology, botany, microbiology, anatomy and physiology, chemistry, organic chemistry, geology, physics, nutrition and ecology. The center is located in P-333, P-334 and P-340; offering various resources all of which are free to the students. The SC features tutors, software, videos, CDROM’s, internet, models, places to study quietly, places for group work, and other materials to assist in science classes. In order to access resources of the SC a North Lake College ID Card is required. The subject specific schedule of tutors is updated every semester and is located at the front of the SC.

When students attend SC we ask that they sign in and out. These data help us keep the center stocked, running, and most of all, free of charge! We have been known to award bonus points for attendance. If your grade is on the bubble – we will examine your participation in the SC and determine how hard you have worked! They also have online tutors available.

Hours of operation:
Spring/Fall semester: M - R 9 am to 7 pm, F & Sa 9 am – 3 pm
Maymester and Wintermester: M – R 2pm – 6 pm
Summer I & II: M – R 2 pm – 7 pm

Center Phone: 972-273-3273
Center Email: sciencecenter333@gmail.com
Manager: Amanda Mello and Coordinator: George Eluvathingal

Summer Hawaiian Field Studies
The Hawaiian Islands are a paradise rich with magnificent hotels, sandy beaches, brilliant sunsets and some of the best recreational and relaxation spots on earth. Beyond the tourist attractions, though sometimes one and the same, lies a natural wonder of botanical rarities, explosive geological features and themes of evolution, adaptation, conservation and extinction. Born from the sea floor in a continuous chain of volcanoes, the Hawaiian Islands exist today as a window into biological and geological processes that tell the story of life on earth.

Join us in the Hawaiian islands with the opportunity to study in this unique environment and earn 16 college credit hours!

Mahalo nui loa (thank you)

If you are interested in taking science to the next level, hands-on, join me and the rest of the Hawaiian Field Studies crew this summer. Program basic information is as follows:

**2019 SUMMER HAWAII PROGRAM INFORMATION**

*this trip is still in the district approval process*

**BASIC INFORMATION**

16 College Credit Hours
Travel to the Kona side and Hilo sides of the Big Island of Hawaii
Travel Dates for the 2019 trip: estimated 6/18 – 6/28  (Updated as of 8/3/2018)

**PERKS (Besides 16 credit hours and two weeks in Hawaii)**

4hrs of the SAGE Scholars – Society
8hrs of the SAGE Scholars – Environment
Service Learning Certificates: 15 hrs. of ecological restoration and community service
Free use of a SLR Digital Camera prior to and during the field studies.
Custom field guide and yearbook video.

**STEPS TO JOIN**

1. E-mail the program to be added to the list hawaii@dcccd.edu
2. Submit a $750 deposit (check, mail, or credit card) Deposit is refundable until classes fill or when the program begins in March 22nd.

**PRE-TRIP SESSIONS:**

Orientation Night (friends and family welcome) – Friday March 22nd  7PM at North Lake
Weekend 1:
Saturday 3/23 @ North Lake College
Sunday 3/24 @ The Friends of Coppell Nature Park

Weekend 2:
April TBA

Weekend 3:
May TBA

Weekend 4:
June TBA

More detailed information regarding orientation and final pre-trip class schedule will be given in email announcements. Blackboard collaborate sessions will take place to support the courses.

PAYMENT INFORMATION
All fees due by May 1st, 2019.
Student Fee $TBD, Approximately $1500 (the $750 + the appropriate balance
Hawaii Flight - $900 to $1100*  DFW to HNL – Rates vary – Student’s book
Tuition - $944* for in county residents. (Out of county may be eligible for in-district rates)
For complete fee explanations, due dates and up to date information, email or call.

*Subject to change. The approximate amount for the trip should run approximately $2,500. Please note that only the student fee deposit and tuition are refundable (up until the first day of class). All other fees are NOT refundable. More detailed information will be added as it becomes available.

COURSES
BIOL 1411 4hrs - Intro Botany – Dempsey
BIOL 2406 4hrs - Environmental Biology – Dempsey
GEOL 1401 3hrs - Earth Science – Kubicek
ARTS 2356 - Digital Photography - Jenkins
PHED 1164 - Walking for Fitness - Sommers
Total - 16 Credit Hours**.

**Students must enroll in all courses to participate in the program.
Accepting deposits now, until the trip fills. After filling the first three vans, a waiting list will be established and new students added six at a time. 24 Students MAX.

CONTACT INFORMATION
E-Mail: hawaii@dcccd.edu
Phone: 972-273-3279
Twitter: @nlchfs
Facebook: www.facebook.com/nlchfs
Instagram: @nlchfs
Also note that this program is subject to cancellation if enrollment does not meet a specific quota or other circumstances arise.
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SAGE SCHOLARS
This class is being taught as part of the SAGE Scholars Program. This does not entail any additional work on your behalf. Upon successful completion of this course.

The SAGE (Sustainability Awareness & Global Education) Scholars Program is a college-wide program to globalize and green any associate degree at North Lake College. The SAGE Scholars Program recognizes students who have completed volunteer service activities and coursework with assignments focused on real world issues in the global society, world economy, and physical environment. SAGE Scholar Graduates receive an Honorary Green Cord for graduation regalia.

SAGE Scholar Requirements:
- Any Associate Degree available at North Lake College
- Earn a 'C' or better in 12.0 credit hours of approved SAGE courses and instructors
- At least 3.0 credits in each of the four areas: Global Citizenship, Sustainable Economy, Sustainable Environment, Sustainable Society
- 20 volunteer hours by the time of graduation (Service Learning volunteer options)