

University of North Texas at Dallas

SYLLABUS Spring 2015

Course Abbreviation BIOL 1082.30 Biology for Educators/Semester Hrs 3 Laboratory Hrs 0

Department of Health and Life Sciences		Division of Liberal Arts & Life Sciences	
Instructor Name:	Dr. Lynda Folts		
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Email Address:	lynda.folts@untdallas.edu		
Office Hours:	Wednesday 10:30 - 12:30 pm; or by appointment		
Virtual Office Hours:	Lecture: Online Laboratory Online		
Class Meeting Days & Times:	Online TBD		
Course Catalog Description:	Develop a meaningful and functional command of key biological concepts; an understanding of the interrelationships among all living things; and a correlation between what pre-service teachers are required to learn and what they will be required to teach. Includes laboratory. BIOL 1082D is a general biology course with laboratory designated for elementary and middle school education majors for seeking teacher certification. Note: this course may not be used to satisfy the laboratory science requirement for majors in the College of Arts and Sciences		
Prerequisites:	None		
Co-requisites:	BIOL 1082 Online Laboratory		
Required Text:	Lecture: Audesirk T, Audesirk G, Byers BE. 2014. Biology: Life on Earth with Physiology. Tenth Edition. Pearson Education, Inc., Glenview, IL, United States of America. ISBN-13: 978-0-321-79426-0		
Recommended Text and References: Laboratory Manual: Janice Nath & John Ramsey: Preparing to Teach Texas Content Areas 2nd Ed. ISBN-13: 978-0-13-704028-5 Pearson Education, Inc. Glenview, IL, United States of America.			
Access to Learning Resources:	UNT Dallas Library: phone: (972) 338-1616; web: http://www.untdallas.edu/our-campus/library UNT Dallas Bookstore: phone: (972) 780-3652; e-mail: 1012mgr@fheg.follett.com		
Course Goals or Overview:			
The goal of this course is to provide the student with a broad background in biology that can be used in elementary and secondary education. This course will provide a brief overview of the major topics within the biological sciences			
Learning Objectives/Outcomes:			
BIOL 1082 Course Objectives- Lecture * (Bloom's Taxonomy Correlation)			
At the end of this course, the student will			
1. Students should be able to demonstrate understanding, illustration, and design of both the evolution of land plants and the evolution of vertebrates/tetrapods/amniotes providing several steps along the way in the process. *UNDERSTAND/ILLUSTRATE/CREATE			
2. Students should demonstrate understanding, design and illustration of general ecological concepts,			

including major biomes, ecosystems interactions, the carbon cycle, the greenhouse effect, and global climate change. *APPLYING/UNDERSTANDING/CREATE
3. Students should demonstrate understanding of the concept of a carbon footprint, and describe the science of conservation biology. *UNDERSTANDING/REMEMBERING
4. Students should demonstrate understanding of the scientific method, and apply associated terminology, such as hypothesis, theory, methods and conclusion. *UNDERSTANDING/APPLYING
5. Students should demonstrate understanding of evolution theory, apply the mechanisms of evolution (especially natural selection), the evolution of populations and species, and the underlying support for evolution. They should also understand the historical context in which this theory was originally formed. *UNDERSTANDING/APPLYING
6. Students should be able to illustrate working knowledge of the history of life on Earth and design research into the origin of life. Students should have a sense of geologic time and the fossil record and the roles of changing environmental conditions, mass extinctions, endosymbiosis, and the rise of eukaryotic cells play in the evolution of life on Earth. *APPLY/CREATE
7. Students should demonstrate understanding of how to interpret a phylogenetic tree, describe basic understanding of the mechanisms by which they are created, and demonstrate general understanding of the principles involved in grouping organisms on an evolutionary tree. *REMEMBER/UNDERSTAND
8. Students should be able to demonstrate, describe and interpret understanding of distinguished differences between organisms in all three domains of life, and to give identifying characteristics of each. *REMEMBER/UNDERSTAND
9. Students should be able to demonstrate and determine the distinguished differences between some groups of prokaryotes, some groups of protists, the 4 main groups of land plants, 5 clades of fungi, and both invertebrate and vertebrate animals. *ANALYZE/EVALUATE

BIOL 1082 Course Objectives- Lab

1. Students should be able to demonstrate, describe, interpret, and communicate appreciation of the diversity of life, both extant and extinct, including our local unique ecosystem. *UNDERSTAND/REMEMBER
2. Students should be able to demonstrate knowledge of distinguish and communicate basic laboratory and field skills, such as microscopy, anatomical dissection, quadrat plotting, etc. *ANALYZE
3. Students should be able to demonstrate knowledge of illustrate, determine, and communicate the components of a scientific lab report and be able to demonstrate writing a lab report, including data description, analysis, graphing, and drawing conclusions. *APPLY/EVALUATE
4. Students should be able to demonstrate, design and communicate identification and or creation of testable hypotheses, as well as communicate predictions based on those hypotheses. *CREATE

Course Outline

This schedule is subject to change by the instructor.
Any changes to this schedule will be communicated by Dr. Folts

Online Lecture Schedule		
Week/Date	Topic	Chapters/Assignments Due
1. Jan.. 20-25	Intro. to Biology/Atoms and Molecules	1-3 Assignment 1-ch.1-3- due 2/1
2 .Jan. 26-Feb. 1	Cells, Membranes, and Flow of Energy	4-6
3. Feb.. 2-8	Photosynthesis, Glycolysis, Cell reproduction	7-9 Research paper outline due 2/10
4. Feb. 9-15	Inheritance, Heredity, Gene Expression	10-12
5. Feb.16-22	Biotechnology, Evolution, Populations	13-15 Assignment 2-ch. 4-6 due 2/15
6. Feb.23-March 1	Origins, History, Systematics	16-18 Assignment 3-ch. 7-9 due 2/22
7. March 2-8	Prokaryotes, Protists, Plants	19-21 Assignment 4-ch.19-21 due 03/1
8. March 9-15	Fungi, Invertebrates, Vertebrates	22-24 Assignment 5-ch.22-24 due 03/8
9. March 23-29	Animal Behavior, Pop. Growth, Community	25-27 Research paper draft due 3/29
10.March 30-April 5	Nutrient Cycling, Ecosystems, Biodiversity	28-30 Assignment 6-ch.25-27 due 04/05
11. April 6-12	Homeostasis, Circulation, Respiration	31-33 Assignment 7-ch.31-33 due 04/12
12. April 13-19	Nutrition, Urinary System, Disease Defense	34-36 Assignment 8-ch.34-36 due 04/19
13. April 20-26	Endocrine System, Nervous, Senses	37-39 Assignment 9-ch.37-39 due 04/26
14. April 27- May 3	Muscles, Skeleton, Animal Reproduction/Dev.	40-42 Research paper peer reviews 04/27
15. May 4-10	Plant nutrients, Reproduction, Responses	43-45 Assignment 10-ch.43-45 due 05/10
16. May 11-14	Final Paper Final Exam	Due 5/10 Due All chapters 5/11

Online Discussion Boards, Research Paper, and Exams		
Due Date	Materials	Points
Feb. 8	Lecture D. Board 1	20
Feb. 10	Research Paper Outline Due	20
Feb. 15	Lab D. Board 1- Chapter 4	20
Feb. 22	Lecture D. Board 2	20
Feb 23	Exam 1	100
March 1	Lab D. Board 2- Chapter 15	20
March 8	Lecture D. Board 3	20
March 27	Exam 2	100
March 29	Research Paper Draft due	0
April 5	Lab D. Board 3- Chapter 27	20
April 12	Lecture D. Board 4	20
April 19	Lecture D. Board 5	20
April 26	Lab D. Board 4- Chapter 34	20
April 27	Research Paper Peer Reviews due	20
April 29	Exam 3	100
May 3	Lab D. Board 5- Chapter 40	20
May 10	Final Research Paper	60
May 11	Final Exam due	100

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

Lecture

Exams (400 points) – You will be given four class examinations. Each exam is worth 100 points, and will consist of a combination of multiple choice, true-make true, short answer, and essay items.

Attendance is required for all exams. Any student found cheating on any exam will receive a zero (0) for that exam and may face other disciplinary action(s). In addition, a final comprehensive exam is required and it is worth 100 points.

Final Research Paper (100 points)- Choose your topic.

Assignments (10@ 10points each=100)

Discussion Boards –Lecture (5 @ 10 points each=50 points)

Blackboard Quizzes (10@ 15points each =150 points)

Research Paper Requirements are provided below.

Laboratory

Discussion Boards –Lab (5 @ 20 points each=100 points) From Case Studies in the Textbook.

Lab Lesson plan blogs- You will have the opportunity to freely produce and share your lesson plans with the class on the Blog page. This will give you hands-on real-world applications of the lecture material and opportunity to produce and share possible lessons you might use in a future classroom setting.

You do not receive a separate grade for lab, so the points received for the laboratory (out of 100) will be added into the lecture grade calculation.

Note: The lab is worth 25% of your final overall grade for the course. However, you must receive a passing grade (70% or higher) in the laboratory to receive a passing grade in the class.

Students must pass both the lecture and the lab independently to pass the course (i.e. if you fail the lab, you automatically fail the entire course and if you fail the lecture, you automatically fail the entire course).

Grading Matrix:

Instrument	Value (points)	Total
Exam1	100-11.1%	100
Exam 2	100-11.1%	100
Exam 3	100-11.1%	100
Final Exam	100- 11.1%	100
Blackboard Quizzes	50-5.6%	50
5 Discussion Boards (Lecture) 10pts.	50-5.6%	50
5 Discussion Boards (Laboratory) 20pts.	100-11.1%	100
Final Research Paper	100-11.1%	100
Assignments 10@20pts.	200-22.3%	200
Total	100%	900

Grade Determination:

A = 900 -810 pts.	90% or better
B = 780- 809 pts.	80 – 89 %
C = 630 -779 pts.	70 – 79 %
D = 540 -629 pts.	60 – 69 %
F = 539 pts. or below	less than 60%
I = Incomplete grade	

University Policies and Procedures

Students with Disabilities (ADA Compliance):

The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (ADA). Students with documented disabilities are responsible for informing faculty of their needs for reasonable accommodations and providing written authorized documentation. Grades assigned before an accommodation is provided will not be changed as accommodations are not retroactive. For more information, you may visit the Student Life Office, Suite 200, Building 2 or call Laura Smith at 972-780-3632.

Student Evaluation of Teaching Effectiveness Policy:

The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SETE to be an important part of your participation in this class.

Assignment Policy:

Assignments are intended to reinforce material covered in lecture, and prepare you for the exams. Collaborative efforts on completing the assignments are encouraged so long as all members of the collaboration contribute equally. As with all other graded assessments, cheating will not be tolerated. While collaborations are encouraged, each student must submit their own work, which cannot be identical to the work submitted by the other members of the collaboration. Assignments should be turned in on time. Late assignments will be graded, but with a penalty of 10% each day it is late.

Exam Policy:

Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook). Any student caught cheating will automatically receive a 0 on the exam, and the instructor may pursue further disciplinary action. After the first exam is turned in, no more exams will be distributed to students that arrive late to the exam period.

Academic Integrity:

Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Academic Integrity at http://www.unt.edu/unt-dallas/policies/Chapter%2007%20Student%20Affairs,%20Education,%20and%20Funding/7.002%20Code%20of%20Academic_Integrity.pdf for complete provisions of this code.

In addition, all academic work submitted for this class, including exams, papers, and written assignments should include the following statement:

On my honor, I have not given, nor received, nor witnessed any unauthorized assistance that violates the UNTD Academic Integrity Policy.

Bad Weather Policy:

On those days that present severe weather and driving conditions, a decision may be made to close the campus. In case of inclement weather, call UNT Dallas Campuses main voicemail number (972) 780-3600 or search postings on the campus website www.unt.edu/dallas. Students are encouraged to update their Eagle Alert contact information, so they will receive this information automatically.

Attendance and Participation Policy:

The University attendance policy is in effect for this course. Class attendance and participation is expected because the class is designed as a shared learning experience and because essential information not in the textbook will be discussed in class. The dynamic and intensive nature of this course makes it impossible for students to make-up or to receive credit for missed classes. Attendance and participation in all class meetings is essential to the integration of course material and your ability to demonstrate proficiency. Students are responsible to notify the instructor if they are missing class and for what reason. Students are also responsible to make up any work covered in class.

It is recommended that each student coordinate with a student colleague to obtain a copy of the class notes, if they are absent.

Diversity/Tolerance Policy:

Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Office of Student Life as the instructor deems appropriate.

Use of Electronic Gadgets in the Classroom

You are allowed to take notes using laptops/iPads/other electronic devices. You are allowed to record the lectures. The instructor reserves the right to ask you to discontinue use of an electronic device if it becomes disruptive to others in the classroom.

Food/Drink Policy

No food or drinks are allowed in the classroom or the laboratory, except for water.

Course Policies and Procedures

Late work and make-up exams

No late assignments will be accepted without obtaining prior authorization or proving validity of absence. In such a case, the assignment should be turned in at the beginning of the following lab session (no later than one week after the due date). Exams will only be administered on the dates provided in the syllabus. If you will be observing a religious holy day that is coincidental with an exam, make your instructor aware before its observance. Make-up exams will be administered online as needed aside from regular exam date.

Cell phone policy

Do not use your cell phone in class; this includes calling, texting, internet surfing, and gaming. If your cell phone must be on during class, apply its "silent" settings. If you keep your phone on during class time, do not keep it on top of the table you are sitting at, please keep it in your pocket, purse, or bag. If your phone rings during an exam, even if the silent setting has been applied, you must turn in your exam immediately.

Laptop policy

You may use your laptop in class to take notes, but only to take notes. If it becomes apparent that laptops are being used by the student for activities other than lecture note taking, all laptop use will be prohibited during class time. Laptops are not to be used during exams. If you bring a laptop to an exam, it must remain in a bag and under the table.

Cheating and plagiarism

Cheating will not be tolerated in this course. If you are found cheating on an assignment or exam, you will not receive credit for the assignment/exam, and student services will be notified. Cheating includes using unauthorized material or devices on an exam, the work of another individual without proper citations, using larger portions of another's work, even with proper citations, and copying the work of a classmate. There are no exceptions to this policy.

BIOL 1082 Research Paper Guidelines and Dates

Term paper Write a review paper on one of the current research topics related to microbial ecology. Topic selection and outline paper is due by **February 10**, and the paper is due by **May 10**. Both outline paper and term paper need to be prepared in MS word (.doc or .docx) and uploaded to the corresponding link provided. Misplaced assignments will not be graded.

□ *Contents of the paper:* Discuss a focused “hot topic”, with sufficient discussion of background information to allow anyone taking the class to understand the significance. Research approaches and future directions should also be briefly discussed. The length of the paper is **minimum 8 pages of double spaced text (font size no bigger than 12)**. You can provide figures. Write with your classmates as the targeted readers. You should not “reuse” a topic used from other courses.

□ *Sources and their use:* In recent years there has been a tendency to rely more heavily on web pages as sources. Students are warned that plagiarizing any source is a serious violation of academic standards—credit and use your sources properly. A definition of plagiarism can be found in the section of University Statement. ****Note:** I allow the use of some figures downloaded from the web, but you should cite the reference or give the website. Figure legends should be your own with succinct and clear information.

□ *Style:* Papers will be judged on their organization and the clarity of writing. Papers that have numerous misspellings or grammatical errors will be rated poorly and this rating will seriously impact the grade. Proofread carefully. Use spelling checkers. Have others read the paper both for clarity and content.

The paper should follow **APA 6th Edition writing style 12 point font- citation systems of Name-Year**.

Categories of term paper topics you can choose from;

Animals

Caenorhabditis elegans: a model organism

Drosophila melanogaster

Invertebrates

Monotremes

Vertebrates

Zebrafish

Behavior

Innate Behavior

Circadian Rhythms in Drosophila and Mammals

Honeybee Navigation

Learned Behavior

Magnetoreceptors

Avoiding Predation

Pheromones

Taxes

Cancer

Cancer: fighting it with inhibitors of angiogenesis

Cancer Cells in Culture

Cancer Immunotherapy

Chronic Myelogenous Leukemia (CML): its molecular basis

Estimating cancer risks

Immunotherapy of cancer

Mutations: causes and significance

Mutations: testing for mutagenic chemicals in bacteria and in mice

Oncogenes: genes whose dysregulation leads to cancer

Radiation

Screening for carcinogens using mice

Tumor Suppressor Genes

Cell Biology

Active transport

Animal cells (with links to the various organelles)

Animal tissues

Apoptosis

Chromatophores
Chromosomes
Cilia
Culture media for growing cells
Photosynthesis
 Light reactions
 Calvin cycle ("dark reactions")
 Energy relationships
 How its details were discovered
Plant cells
The Proteasome
Protein Kinesis: How freshly-synthesized proteins are sent to their proper destinations in the cell
Stem cells
Pyrosequencing
Development
Aging
Cleavage
Embryonic Development: the mechanisms at work in first steps followed by links to descriptions of the mechanisms at work during the later phases
Embryonic Stem Cells
Extraembryonic membranes
Frog Embryology
Diversity of Life
Fungi
Neurospora crassa
Plants
Protists
DNA and RNA
Antisense Oligodeoxynucleotides and their therapeutic potential
Endoreplication
Epigenetics

Student may further develop and use a specific sub-topic from each category.

You have to provide **1- page outline** of your term paper outline along with minimum 3 references (full-text scientific research papers in PDF format) covering your term paper topic (**Due: February 10th**).

Peer-review You will upload your working draft of term paper by **March 29** and start to receive comments and suggestions from your class mates. You will incorporate those suggestions and recommendations in your finalized term paper. You will review the papers of at least 3 class mates using Microsoft Word Review Tools. You will complete the review then upload it to the Group link provided using the following format: **last name_**

Review_Authors last name_ date This process allows the student to improve the paper with suggestions from peers before the final submission. **To receive full credit:**

i) you have to upload your draft by March 29th,

ii) read and provide feedback on minimum 3 drafts of your classmates (due by April 27)

iii) submit your Final paper by May 10 midnight to the link provided.