

INTRODUCTORY BIOLOGY 1 (BIOLOGY 101): LECTURE (061N) SYLLABUS

Instructor: Dr. Tupper

Office: [CS 120](#)

Phone & email: 703-764-7767; ttupper@nvcc.edu

Website: <http://blogs.nvcc.edu/ttupper/>

Facebook: <https://www.facebook.com/nvcczoology/>

Office hours: By appointment



Course description: Focuses on foundations in cellular structure, metabolism, and genetics

in an evolutionary context. Explores the core concepts of evolution; structure and function; information storage and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approaches, and relevance of biology to society. Part I of a two-course sequence. Lecture: 3 hours. Recitation and laboratory: 3 hours. Total: 6 hours per week. Our class meets Tuesday and Thursday at 12:45 pm in CS 119.

General course purpose: This course provides students with an opportunity to acquire fundamental knowledge of the principles of living systems and their applications to everyday life. The course is designed for both science and non-science majors. It may serve as a prerequisite for advanced biology courses, a laboratory science graduation requirement, or as transfer credit for a four-year institution. Please note that if you are planning on transferring to [GMU for biology](#) then it is in your best interest to take Biology 110 (botany) and Biology 120 (Zoology) to fulfill your biodiversity requirement.

Course prerequisites/corequisites: [Pre/corequisites](#) are: Competency in Math Essentials Units MTT 1-3 as demonstrated through placement and diagnostic tests, or by completion through unit 3 in an MTT course. Competency in Math Essentials Units MTT 1-5 or equivalent is desirable. A student who provides official evidence of a minimum mathematics score of 520 on the SAT or a minimum score of 22 on the ACT taken within the last two years.

Textbooks: You need the General Biology 1 (bio-101) lab manual called “Investigating Life” by Ilya Temkin. This is in digital format and is administered through tophat. This is digital, the code for which can be purchased at [the NVCC Annandale Campus bookstore](#). Please ask your lab instructor, [Dr. Gayek](#), about this. “Biology in Focus” is the official textbook for lecture. Please note that all of your exam content comes from my lectures. The textbook is a great peer-reviewed reference.

Evaluation: The lecture component of this course (totaling 75% of your final grade) will be based on 5 in-class exams and eMind assignments. Exams consist of multiple choice, true/false, and short answer questions. Your lecture grade = points received/points possible x 100. Your lab grade = points received/points possible x 100. Your overall course grade = (0.75 x Lecture %) + (0.25 x Lab %). There are no unexcused make-up exams, the final exam is cumulative, and your lowest exam grade is dropped. Late eMind assignments are not accepted, and you must score 100% on each eMind assignment to receive full credit (you have up to 9 attempts per assignment). Exams are taken on campus with canvas on a laptop in class. You will need to download [respondus lockdown](#) browser before you take exams. If you need a laptop, nova may provide one to you (explained later).

Student needs: Students who may require accommodations are encouraged to contact the [college center for accommodations and accessibility services](#). If you have an accommodation, please present that to me via email (or a hard copy). We can then discuss how I can best help you. [NOVA can help with food, bills, rent, childcare, and mental health needs](#). If you need other financial advice, please click [here](#). If you need a Sign Language interpreter or CART Captioning, contact Interpreter Services at: interpreters@nvcc.edu. If you need academic assistance or need college services but cannot make it to campus, please review NOVA’s [remote student support services](#) to receive virtual assistance. Click on the following hyperlink if you are in the [military or are a veteran](#) and need assistance. If international students have specific questions, [click here](#). Complaints of sex-based discrimination, sexual violence, domestic violence, dating violence, and sexual or gender-based harassment can be [reported here](#). The campus police information is [here](#).

Academic honesty and conduct: At Northern Virginia Community College, we expect the highest standards of academic honesty. Academic dishonesty is prohibited in accordance with the Student Conduct, Rights and Responsibilities described in the [student handbook](#). NVCC’s [policy](#) prohibits cheating on examinations, unauthorized access to examinations or course materials, plagiarism, and other proscribed activities. Students that violate plagiarism and academic honesty codes will be

[reported](#). If a student behaves in a hostile or disruptive manner or presents any indication that they are a harm to themselves or others, a formal request for assistance to the [office of wellness and mental health](#) will be submitted, and the police may be contacted. Regarding covid: if you are feeling sick, please do not come to class. I will be unmasked while lecturing so that students can hear me. If I get sick and am out for an extended period, that will be problematic for all of us. [Click here for covid-19 updates](#).

Cancellation dates: In the event of class [cancellation](#), we will resume where we left off during the next meeting. For example, if we were to have an exam scheduled on September 1st, and there was a nationwide internet blackout, the exam would take place on our next scheduled meeting on September 7th. Since the college is not requiring covid vaccines for students, there is a chance we would have to transition to remote learning—at least temporarily. It would be best if you were ready to transition to that format beforehand. I will proctor all remote exams, so you will need access to a computer with a webcam, and you will need to download [respondus lockdown](#). [Please click here for emergency alerts](#).

Important dates, audit policy and incompletes: For critical dates regarding refunds, withdraw, holidays, etc., click [here](#). Auditing this course requires instructor permission. Incompletes are only granted if the student's circumstances are dire (e.g., health issues, family issues, documented work conflict) and if [certain criteria](#) are met. Incompletes must be approved by the division dean and provost. Health claims must be documented by medical professionals. Final exam times are different than your normal class meeting time. They are posted below.

Comments on submitting written work: I will not be assigning research papers this semester. Much of the lab work, however, is written. You can ask the [writing center staff](#) for help with written lab assignments and for other classes.

Email policy and canvas discussions: Please use proper English when composing emails and posting discussions. Please keep writing somewhat formal, free of slang, and as grammatically correct as possible. Please address me in the emails as Dr. or Professor Tupper, not as 'hey.'" It is fine to call me by my first name if you are no longer taking courses with me. I will reply to your emails within 24-48 business hours from its sent time. There are times when I miss an email, or it gets sent to my junkbox. If you do not hear from me within 48 business hours, please just email me again. That said, I may not reply to your emails unless you ask me a specific question. Here are some course email guidelines:

1. Email me if you have questions about the course content or if you want to set up a time to meet and discuss some of the course content. I am more than happy to help you learn the material.
2. Email me if there are serious circumstances that are beyond your control that may need my attention (i.e., health or job-related issues or conflicts that may result in a prolonged absence from class). Smaller and less serious questions can be answered by emailing a classmate, or by using canvas discussions.
3. You don't have to email me if you are going to be late to class.
4. You don't have to email me if you are going to miss a class, or if you have missed class.
5. Please first ask your classmates or use canvas discussions to find out about any logistics/instructions that I have explained in a previous class that you did not attend. Then email me if there still is a concern.
6. Please do not email me asking for extensions on labs and other assignments.
7. Please do not email me asking for extra credit.
8. Please only use your official vccs email account

General comments on success in this course, and miscellaneous rules: Doing well in this course requires a substantial commitment. This course covers evolutionary biology, DNA structure and function, and cell biology and genetics. By nature, these topics are challenging. You need to set aside time for reviewing lecture notes, reading, and studying after and before every lecture (probably an additional 9 hours per week). Please make use of canvas discussions and become friendly with other students in the class. Peer support is very helpful. Please be on time to class. Lectures are not recorded. Recording devices will only be permitted for students with accommodations. Please note that I like interactive courses. I ask students a lot of questions. I do this because when a student explains a concept to other students (rather than just me), it can be quite helpful for learning. There's no penalty for getting a question wrong, and once you get used to my lecture style, you will see that I create a judgement free zone where everyone is welcome to participate. That said, if you have serious social anxiety and would prefer not to be called on, just let me know. I understand.

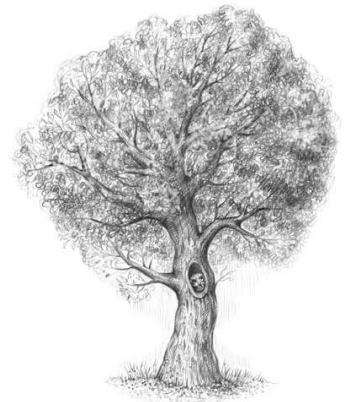
Tentative Lecture Schedule: Please note that the lecture and exam dates are not fixed (except the final). Sometimes we take longer to get through the material than other times. The exam dates may change, but the material covered on each exam will not. I will let you know well in advance of each exam. Please note that the final exam meeting time is different from your normal class session. The final exam schedule is hyperlinked below.

Unit 1 Topics

- Introduction to Biology, Science, and the Scientific Method—8/23, 8/25
- Characteristics and Organization of Life—8/30, 9/1 (eMind Classification)
- Life's Origins and Diversity—9/6, 9/8
- Chemical Highlights—9/13, 9/15 (eMind Biomolecules and Metabolic Processes)
- Review—9/20
- **Exam 1—9/22 (100 points)**
(For exam 1 you will have a review and a review sheet)

Unit 2 Topics

- Intro to Cells, and Transport, Diffusion, and Osmosis—9/27, 9/29 (eMind Membranes and Transport)
- Cellular Respiration—10/4, 10/6
- Photosynthesis—10/13
- Additional Cell Structure and Function—10/18 (eMind Cells and Organelles)
- Review—10/20
- **Exam 2—10/22 (100 points)**
(For exam 2 you will have a review session only; time permitting)



Unit 3 Topics

- Somatic Cell Division—10/25 (eMind Chromosomes and Mitosis)
- Gamete Formation—10/27 (eMind Meiosis)
- DNA Structure and Replication—11/1 (eMind DNA Basics)
- Genes, Transcription, Translation and Mutation—11/3 (eMind DNA Technology)
- Review—11/10 (eMind Mendelian Genetics and Patterns of Inheritance)
- **Exam 3—11/15 (100 points)**
(For exam 3 we will have a review only; time permitting)

Unit 4 Topics

- History of Evolutionary Ideas and Selected Evidence of Evolution—11/17 (eMind Evolution)
- Evolution and Gene Frequencies, and Mechanisms of Speciation—11/29 ([PBS All in the Family](#) and [PBS Evolution Lab](#))
- Review—12/1
- **Exam 4—12/6**
- **[Cumulative Final Exam](#)—/ Dec 13 (100 points)**
(For exam 4 and the cumulative final, we will not have a review)