

**Biol 120 – Biological Concepts: Cells, Metabolism and Genetics**  
**Syllabus for Summer 2025**  
**On the web from June 2<sup>nd</sup> to July 3<sup>rd</sup> 2025**

Homepage: <http://blackboard.wku.edu> Login using your Net ID and Password

**Professor Info:**

Ajay Srivastava, Ph.D., MBA

**Office:** OCH1015

**Office Phone:** 270-745-6008

**Biology Dept. Office Phone:** 745-3696

**Office Hours:** Online by appointment

**e-mail:** [ajay.srivastava@wku.edu](mailto:ajay.srivastava@wku.edu) (best way to get in touch with me)

**Required Textbook:** **Freeman's Biological Science, 7<sup>th</sup> Edition.** Access comes with registration in this course. Please read the statement on textbooks in this syllabus for more information.

**Required Student Access Kit:** Mastering Biology, Access comes with registration in this course.

---

**GENERAL EDUCATION COURSE CONTENT AND GOALS:**

**Course content and goals:** This course is designed for Biology and science majors and will emphasize: cellular organization and processes, metabolism, DNA structure and replication, and Mendelian and population genetics. This course requires that Biol 121 be taken as a co-requisite.

After a student completes this course they will have a foundational knowledge in the fields of biochemistry, cell biology, molecular biology and genetics. Specifically, they will be able to:

- Recognize and describe the structure and function of biological molecules
- Outline and compare cellular energetics, cellular metabolism, and photosynthesis.
- Recognize and describe the structure and function of prokaryotic and eukaryotic cells, as whole entities and in terms of their subcellular organization and processes.
- Describe and explain the synthesis, structure, and function of nucleic acids and proteins in prokaryotes and eukaryotes.
- Understand and apply the principles of inheritance from molecular mechanisms to population consequences (diversity).
- Appraise and evaluate biological knowledge in an ethical and social context.

In addition, this course fulfills the D.1. (Science/Mathematics) general education requirement.

**Natural Science Explorations Category of Colonnade**

This course fulfills the Natural Science Explorations Category of Colonnade. Students will gain the ability to:

1. Demonstrate and understand the methods of scientific inquiry in biology
2. Explain basic concepts and principals in biology
3. Apply scientific principles to interpret and make predictions in biology
4. Explain how scientific principles relate to issues of personal and/or public importance

**COURSE OVERVIEW:**

This online summer term course covers all the same basic material and uses the same textbook that would be found in a regular semester Bio 120 course, only it does so in four weeks. As the lab for this course (Bio 121) is a co-requirement, you will be required to take Bio 121 in the summer or fall term if you have not already done so.

All of the assignments and exams will be done online. To keep up with the material, students will need to read approximately one chapter of the textbook (about 15-20 pages) per day (see suggested reading schedule in Blackboard). PowerPoint lecture notes will be provided as an outline of the most important points and to help you in your reading and studying. Assignments will be due almost daily and exams are due in blocks. That is, tests are due two at a time. This is to allow some flexibility in student's schedules. Assignments and exams can be done any time before their due dates and it is recommended that they are done early so that assignments/exams are not accidentally missed.

**SCHEDULE:**

A suggested reading schedule and the due dates for assignments and tests will be placed in the "Content" folder on the Blackboard course website.

**Tentative Lecture/Exam Schedule (06/02/25-07/03/25)**

**Class Hours: On the web, MTWRF**

<b>DAY</b>	<b>Tentative Topic</b>	<b>Text section</b>
<b>Section 1</b>	<b>The Chemistry of Life</b>	<b>Chapters 1-6.1</b>
Day 1	Cell Theory /The Tree of Life/ Doing Biology	
Day 2	Atoms / Chemical evolution	
Day 3	Carbon and Water	
Day 4	Proteins & Nucleic Acids	
Day 5	Carbohydrates & Lipids	
<b>Section 2</b>	<b>Cell – the fundamental unit of life</b>	<b>Chapters 6.2-7, 11-12</b>
Day 6	Prokaryotic and Eukaryotic Cells	
	Membrane structure and function	
Day 7	Cytoskeleton	
Day 8	Cell Adhesion / recognition/Cell Communication	
Day 9	Cell cycle – mitosis / cytokinesis	

Day 10	Cancer	
<b>June 16<sup>th</sup></b>	<b>Exams I &amp; II are due at 11:59PM on Blackboard</b>	
<b>Section 3</b>	<b>Energy – What Powers the Cell</b>	<b>Chapters 9-10</b>
Day 12	An Introduction to Metabolism, Glycolysis	
Day 13	Glycolysis II	
Day 14	Kreb's cycle	
Day 15	Electron transport chain	
	Fermentation	
Day 16	Photosynthesis	
<b>Section 4</b>	<b>Genetics – Information transfer</b>	<b>Chapters 13-17</b>
Day 17	Meiosis: Mechanism and Consequences	
	Meiosis: Why?	
Day 18	Mendel and the Gene	
Day 19	Chromosomal Basis of Heredity	
Day 20	The Molecular Basis of Heredity/ DNA Replication	
Day 21	Central Dogma	
	Transcription	
Day 22	Translation	
	DNA Technology/ Genomics	
<b>July 3<sup>rd</sup></b>	<b>Exams III &amp; IV are due at 11:59PM on Blackboard</b>	

## **COURSE POLICIES:**

### **STATEMENT ABOUT E-TEXTBOOK AND ONLINE ACCESS**

The Department of Biology at WKU has worked together to reduce the price of course materials for students. In order to save you money, maximize your effective use of your textbook, increase learning and evaluate the best ways of teaching you difficult topics, we have entered into a partnership with PEARSON.

By enrolling in this course, you agree to purchase the digital materials associated with this course. These materials include a 6 to 24 month (depending on the course) access to Freeman's Biological Science, 6<sup>th</sup> edition and Mastering Biology (for assignments), where appropriate, a downloadable e-copy of the textbook, and the option to purchase a loose leaf copy of your textbook at a greatly reduced cost. The cost per text is about 35% to 50% the cost of purchasing a new textbook, even before purchasing online materials. If you would like to purchase a printed copy at a reduced price, you must order it through The WKU Store during the first week of class.

In order to make these savings available to you, we have partnered with The WKU Store to streamline the delivery process. As a result, after drop/add period, you will be billed the cost of materials for the course. Each student will have access to all course materials from day one. If you choose to drop the course during the regular add-drop period you will not be charged for the online portion of the material. You should note that for this course, you WILL BE CHARGED for the digital materials. Please DO NOT buy a copy of the book from online or local vendors. ONLY the digital format is required for use in this course.

**EXAM FORMAT:** Exams will be administered online on Blackboard and may include true/false, multiple choice, matching, diagrams, and other types of questions. The final exam is comprehensive.

The first three exams will have ~40 questions and the final exam will have ~80 questions. You will be given 60 minutes to take each of the exams. You will be given a score as soon as you complete each exam and **you will have a single opportunity to take the exam.**

**GRADING:** There will be a total of approximately 740 points possible in this course, consisting of some variation of.....

- 240 pts. - Twelve 20-point Assignments
- 300 pts. - Three 100-point Exams
- 200 pts. - One 200-point Cumulative Final Exam (100 pts. material SINCE Exam III + 100 pts. on Exam I-III material)
- **Total = ~740 pts.**

Final letter grades will be determined based on the following percentage scale. To determine your final grade (%) use the formula: (your raw score/740) X 100

Grading Scale :		
90-100%	<b>A</b>	Outstanding
80-89%	<b>B</b>	Above average
70-79%	<b>C</b>	Average
60-69%	<b>D</b>	Below Average
Below 60%	<b>F</b>	Failing

**Withdrawal by the deadline will get you a grade of "W"**

#### **FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT:**

Due to the Family Educational Rights and Privacy Act ([FERPA](#)), if you are 18 years old or older, I cannot discuss your grades, etc. with your parents.

**ACADEMIC INTEGRITY:** Students are expected to do their own work throughout this course and demonstrate academic integrity. Academic dishonesty in the form of cheating or plagiarism will not be tolerated. Please refer to the WKU Student handbook for policies and definitions regarding academic integrity at: [http://wku.edu/judicialaffairs/?page\\_id=70](http://wku.edu/judicialaffairs/?page_id=70)

**ACADEMIC MISCONDUCT:** Dishonesty on quizzes, exams, or written assignments (see WKU's plagiarism statement below) will result in a failing grade for the class. Cheating (completing an assignment for someone else, allowing someone else to copy your assignment, copying and pasting from internet sources or elsewhere when you have not been instructed that this is acceptable, etc.) on online assignments will be tracked by computer. Cheating will not be tolerated.

**WKU'S PLAGIARISM DEFINITION:** "To represent written work taken from another source as one's own is plagiarism. Plagiarism is a serious offense. The academic work of a student must be his/her own. Once must give any author credit for source material borrowed from him/her. To

lift content directly from a source without giving credit is a flagrant act. To present a borrowed passage without reference to the source after having changed a few words is also plagiarism."

**WITHDRAWALS AND AUDITS:** If you wish to audit or withdraw from the course you should do so by the dates mandated by the University. Be sure you are aware of these dates because credit for the course will not be changed to an audit after the university designated time. You also cannot drop the class or change to Audit or Withdraw after the designated time. Be aware that **IT IS YOUR RESPONSIBILITY TO DROP THE CLASS**. Do not assume that I will do this for you. University policy states, "Students who, without previous arrangement with the instructor or department, fail to attend the first two class meetings of a course meeting multiple times per week or the first meeting of a class that meets one time per week MAY be dropped from the course; however, students are responsible for officially dropping any course for which they have enrolled." You must submit the appropriate forms for each by the published deadlines to end your enrollment in this class. Failure to complete the appropriate forms may result in a failing grade for this course.

**DISABILITY ACCOMODATIONS:** In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, room 1074 of the Student Success Center. The phone number is 270-745-5004 or email at [sarc.connect@wku.edu](mailto:sarc.connect@wku.edu)

Please do not request accommodations directly from the professor or instructor without a letter of accommodation from The Student Accessibility Resource Center.

Note that if you require accommodations, you may be required to take exams at another location. You will need to make arrangements with me at the beginning of the semester to take your exams at a location in order to receive your accommodations. If at any time during the semester you want to change your testing arrangements, you must see me at least 3 days prior to the upcoming exam date.

If you need extra time on assignments, you must make arrangements with me PRIOR TO THE DUE DATE of the assignment.

For Title IX, ADA and other university policies, helpful links, copy and paste the link provided below in your browser.

<https://www.wku.edu/syllabusinfo/index.php>

**THIS SYLLABUS IS SUBJECT TO CHANGE AT MY DISCRETION.  
HOWEVER I WILL NOTIFY YOU WHEN I MAKE A CHANGE. PLEASE  
CHECK THE DATE THIS SYLLABUS WAS LAST UPDATED TO ENSURE  
THAT YOU HAVE THE LATEST VERSION**