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Biology 141 Principles of Biology I Spring 2015

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Biology 141

Principles of Biology I

(Spring 2015)

Required Materials:

- Raven, et al. *Biology 10th* edition. McGraw Hill, 2014.
- Access code for MHHE Connect (<http://connect.mcgraw-hill.com>). Packaged with the Raven text.
- Modules and Laboratory Packet for Principles of Biology I.

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The mission of Parkland College is to engage the community in learning.

Modules

Module	Topic	Lecture Dates	LearnSmart/ Vocabulary Quiz	Wrap-Up Quiz
1	The Science of Biology	1/12-16	N/A	1/16
2	The Nature of Molecules	1/20-23	1/20	1/23
3	Chemical Building Blocks of Life	1/26-30	1/26	1/30
4	Cell Structure	2/2-6	2/2	
Hour Exam I February 6 covering modules 1-4				
5	Membranes	2/9-13	2/9	2/13
6	Energy & Metabolism	2/16-20	2/16	2/20
7	How Cells Harvest Energy	2/23-27	2/23	2/27
8	Photosynthesis	3/2-6	3/2	
Hour Exam II March 6 covering modules 5-8				
9	How Cells Divide	3/9-13	3/9	3/13
10	Patterns of Inheritance	3/16-20	3/16	3/20
11	DNA: The Genetic Material	3/30-4/3	3/30	
Hour Exam III April 3 covering modules 9-11				
12	Genes & How they Work I	4/6-10	4/6	4/10
13	Genes & How they Work II	4/13-17	4/13	4/17
14	Control of Gene Expression	4/20-24	4/20	4/24
15	Biotechnology	4/27-5/1	4/27	
Hour Exam IV May 7 covering modules 12-15				

LearnSmart Assignments

It is expected in this course that you prepare for each module by completing an activity before the first day of lecture on that week's material. This is meant to introduce you to the new vocabulary and concepts pertaining to that week's topics.

So you will be completing weekly LearnSmart/SmartBook assignments due by the beginning of Monday's class that will be available on McGraw-Hill's Connect site. Connect can be accessed from the "Course Resources" module of the Content area of our course on Cobra. Your instructor will give you class specific information for registering for your class on the Connect website.

These assessments are an excellent resource for you in learning the material presented in Bio 141. You will answer a series of question about the topic for that week. Missing individual questions will not stop you from receiving full credit for the assignment, but you will need to answer other

questions on the topic correctly before finishing the assignment. More information will be available from your instructor during the first week of class.

Weekly (Monday) LearnSmart Vocabulary Quizzes

Understanding the vocabulary used to discuss living systems is a crucial foundation for understanding how those systems function. You cannot understand the concepts presented in this course if you do not know the meanings of the words scientists use to communicate those concepts.

To facilitate this important aspect of your learning experience before each module is covered we will have an in-class quiz over some of the vocabulary necessary for that topic. The vocabulary will come from the LearnSmart activities AND the vocabulary terms in the module book

Hour Exams & Final

There will be four hour exams over the course of the semester. These exams will be given during class time and are intended as an opportunity for you to demonstrate how much you have learned about the content discussed during that quarter of the course. Each Hour Exam will be worth 100 Points, and will be comprised of written, short answer and fill-in-the-blank type questions.

At the end of the semester there will be a cumulative final exam covering the entire course's content. The format for this exam will be announced at a later date.

Module Group Activities & Wrap-Up Quizzes

In order to help you gain a deeper understanding of the concepts presented in the course, at the end of most modules we will have an in class quiz or group activity over the concepts from the entire module.

Lab Exercises

Lab #	Name	Lab Date
1	Micropipettes and Spectrophotometers	1/13
2	Quantitative Analysis of a Protein	1/20
3	Characterization of Serum Albumin Protein	1/27
4	Cell Structures	2/3
5	Osmosis	2/10
6	Enzyme Enquiry	2/17
7	Cell Respiration	2/24
8	Photosynthesis	3/3
9	Mitosis	3/10
10	Fruit Fly Project	3/17
	General Lab Practical	3/31
11	PCR	4/7
12	DNA Technology	4/14
13	Bacterial Transformation	4/21
14	Restriction Enzyme Mapping	4/28
	Biotechnology Lab Practical	5/5

Lab Reports, Lab Quizzes & Fruit Fly Report

All labs will have a Pre-Lab Quiz based on the readings within the lab manual.

Thirteen of the 14 labs will involve submitting a lab report which can be found in your lab manual at the end of each set of lab instructions.

One of the labs (Fruit Fly Project) will involve writing up a detailed Fruit Fly Report in journal format.

Lab Practicals & Lab Skills

Early in the semester you will be assessed on some key lab skills (e.g. operating a micropipette). This Lab Skills assessment will be scheduled in small groups or individually during a time that is convenient for you and your instructor.

There will be a general lab practical covering the content in the first 9 labs. Then there will be a biotechnology lab practical covering the last 5 labs (starting with the fruit fly project).

Student Choice Assignments

- You need to complete one or more of the following assignments that add up to 50 points during the semester.
- You may choose from among several possible assignments to earn these points.
- You are responsible for your own transportation to these activities if necessary.
- **Service Learning Assignments (25 Points Each)**
 - ★ **Saturday morning/afternoon workdays + Reflective paper.** At Purves Nature Center, Urbana Park District; 1505 N. Broadway, Urbana. One need not be an expert in the out of doors. The Nature Center staff will conduct a thorough orientation for your morning's work at the Center. Contact the Volunteer Coordinator for further information at 384-4062.
 - ★ **Busey Woods** work days are the 2nd Saturdays of each month; 9 to 11 a.m. (meet at the Nature Center).
 - ★ **Meadowbrook Park** also has workdays on the 4th Saturday of each month, 9-11 a.m. (meet at the parking lot off S. Race St., Urbana). It is common courtesy to call at least a couple days ahead to let them know you will be coming to help.
 - ★ **Weaver Park** also has workdays on the 2nd Saturday of each month, 1-3 p.m. (runs along Kinch Street on the east side of Urbana).
 - ★ Bring back a note with the volunteer coordinator's signature and time you worked to receive your credit.
 - ★ A **reflective paper** about how you felt about your volunteerism and service to the community must be written. The paper does not need to be longer than 1 page. If you complete a learning service project and do not turn in a reflective paper you will NOT receive any points for your work.
 - If you sign up for one of the above service learning assignments and it is unexpectedly canceled (no matter the reason), then it will be the students' responsibility to complete alternative assignments.
- **World of Science Lecture Series (10 points each).** Held at the Staerkel Planetarium on the first Friday of each month at 7:00 p.m. (\$1.00 admission charge). Write an approximately 250 word essay on what you found interesting at the lecture.
- **Book Quizzes (20 points each).** Read "The Double Helix" by James Watson or "Life Ascending" by Nick Lane. Complete an online quiz. Your grade on that quiz will determine how many points you earn on this assignment with a maximum of 20 points.
- **Other Choice Assignments may be available at the discretion of your instructor.**

Tentative Course Points

Assignment Type	Number of Assignments	Points	Total Points
LearnSmart Assignments	14	10	140
Lab Reports	13	20	260
Pre-Lab Quizzes	14	5	70
Lab Practicals	2	100	200
Vocab Quizzes	14	10	140
Mod. Wrap-Up Quizzes	11	10	110
Fruit Fly Report	1	80	80
Student Choice Assignments	Variable	Var.	50
Enzyme Semester Project	1	50	50
Hour Exams	4	100	400
Final Exam	1	200	200
Total Points			1700

The grading scale for this course is **A=90%**, **B=80%**, **C=70%**, **D=60%**.

These points may change during the course of the semester. Stay informed about individual assignments by regular attendance and communication with your instructor.

Attendance Policy

- On Census Day, your instructor is required to assess your attendance. If you have not attended regularly to that point, you may be withdrawn with no refund of tuition and fees. You are ultimately responsible for your own withdrawal by the withdrawal date. Non-attendance after the Census Day may result in an F if you don't withdraw yourself. **However, the instructor still reserves the right to withdraw a student for poor attendance or grades on or before midterm.**
- Regular and prompt attendance is expected at all classes. **Quiz, exam, or practical deadlines will not be extended as a result of absence unless the instructor is contacted prior to class that day or by 12:00 pm the day of the quiz and the instructor deems your absence as excused.**
- Excused absence – it is up to the instructor (not the student) to determine if an absence is excused.
- Notifying your instructor of your absence IN ADVANCE of the class period(s) you will be missing may be looked kindly upon by your instructor. Hint. Hint.
- You are held accountable for all announcements made at the beginning of class.
- It is YOUR responsibility, not your instructor's, to find out what assignments you may have missed while absent.

Lab Attendance/Tardiness

- You are expected to attend all labs.
- Due to the extensive lab setups for many of the laboratory activities, labs may not be made up even if you have a "good" excuse. If you miss a lab you may receive a zero for that lab.
- If you know you will miss a coming lab, accommodations MIGHT be made for you to attend another lab section.
- If you are tardy to lab and/or arrive to lab without a preprinted copy of the lab activities that day then you may not take the lab quiz.
- If you arrive to any lab without a copy of the procedures for that lab then you will not be allowed to participate in that lab activity that day nor be allowed to make-up that lab.

Late Policy

- Anything submitted past the due date will receive a 10% penalty for each day it has not been turned in. This includes weekends. Late work will not be accepted during a weekend or holiday.
- All dates and deadlines are posted on the calendar in this course's Cobra LMS website which you should access through <http://my.parkland.edu>.

Academic Honesty Policy

- You are expected to read and adhere to Parkland's Affirmation of Academic Honesty Statement when completing all assignments:
 - "I honor Parkland's core values by affirming that I have followed all academic integrity guidelines for this work."
- Copying down or simply "rewording" another's answers are cheating. When working in groups, students are encouraged to discuss and share ideas but do not copy or reword another student's answers. Do your own work!
- If your instructors suspect this occurring, both accomplices will receive a zero for the assignment. Guard your answers!
- **Plagiarism (copying, rewording, or paraphrasing another author's words even though proper citations are used) is not tolerated. This does not demonstrate to the instructor that you understand the material. Any student caught plagiarizing may receive a zero for that assignment. If the instructor so chooses, they may bring the incident before college authorities which may result in a failing grade for the course and/or suspension from the college.**
- Dishonesty as perceived by the instructor may result in the student receiving a failing grade for the course and/or expulsion from the course.
- We believe strongly in the Core Values espoused by Parkland College: Honesty and Integrity, Fairness and Just Treatment, Responsibility, Multiculturalism, Education, and Public Trust. Essentially, these values set guidelines for how we should treat you and how you should treat each other (and us). Failure to be respectful of one another or to maintain ethical behavior will not be tolerated.

Behavior

- Please be respectful of others in your class and do not be disruptive. Behavior that is deemed disruptive by the instructor will not be tolerated and disciplinary action may be used.
- **Place your cell phone in silent mode** before class and lab. These are disruptive to the instructor and to other students. Up to 10 points (per incident) may be deducted from the grade of any student who allows their electronic device to create an audible sound during class or lab.
- Students may not employ the usage of any electronic device in class or lab without the consent of their instructor. These are disruptive to the instructor and to other students. Up to 10 points (per incident) may be deducted from the grade of any student who allows their electronic device to create an audible (vibration excluded) sound during class or lab.

Tutoring

IF YOU DON'T UNDERSTAND A CONCEPT, HEAD TO THE PEER TUTORING LAB (D120) ASAP!! The material in this course builds upon itself. For example, you will be completely lost on the topic of gene regulation (A12) if you do not understand transcription (A10).

General Education Objectives

The College catalog states "...all of Parkland's academic offerings will help [students] grow by improving their individual skills and competencies and by providing experiences in areas they have not yet explored"

(p.9, 2011-12). You are encouraged to review the Course Information Form (CIF) for your course. There, you will find the general education objectives addressed in your course. You are additionally encouraged to list those particular objectives in your syllabus. This will aid our students in appreciating that not only are they learning content specific information, but that Parkland is assisting them in realizing “their potential as learners, workers, and valuable participants in a global society” (p.8, 2011-12).

- Write effectively.
- Think critically in decision-making and problem-solving, using scientific inquiry.
- Compute, assess, and articulate in quantitative terms.
- Use technology to access, retrieve, process, and communicate information.
- Understand global political, social, economic, historical issues and philosophical ideas.

Cobra Learning Management System (LMS) Communications

You are expected to access the Cobra LMS on a regular basis to obtain information about this course which includes course announcements and emails. Cobra can be accessed at: <https://d2l.parkland.edu/>

Student Resources Outside Of Class

If you believe you have a disability for which you may need an academic accommodation (e.g. an alternate testing environment, use of assistive technology or other classroom assistance), please inform the instructor as soon as possible, and/or contact the following for assistance:

Cathy Robinson; Director, Office of Disability Services
U260, 353-2082, crobinson@parkland.edu

There are many services offered by Parkland that students do not take advantage of. You have already paid for these services when you paid your tuition! Use them!

Service Offered	Phone Number	Location
Library	351-2223	R201
Writing Center	373-3791	D133
Counseling & Academic Advising Center	351-2219	U267

Center for Academic Success

If you find yourself needing assistance of any kind to complete assignments, stay on top of readings, study for tests, or just to stay in school, please contact one of the following staff at the Center for Academic Success:

- Anita Taylor
Room: D120
Phone: 353-2005

Core Values

Your instructor supports the Core Values espoused by Parkland College: Honesty and Integrity, Fairness and Just Treatment, Responsibility, Multiculturalism, Education, and Public Trust. Essentially, these values set guidelines for how you should be treated and how you should treat each other (and me). Failure to be respectful of one another or to maintain ethical behavior will not be tolerated.

Civility Statement

Our College Core Values of Fair and Just Treatment and Responsibility serve as guide posts for civility. Parkland College is committed to campus wide civility by cultivating a community where the faculty, staff and students:

- Respect people and property
- Show empathy and tolerance
- Demonstrate concern for and fairness toward others
- Employ critical thinking and patience
- Accept accountability for their own actions

Mass Notification System

In the event of a significant campus emergency, Parkland College will activate its mass notification system. We encourage you to sign up for this free service and select how you would like to be notified: text message, audio message, or email message. Sign up at:

<http://www2.parkland.edu/publicsafety/alerts.htm>

Computer Related Technology Assistance for Students

"Parkland College offers help with technical questions and issues regarding Email, Cobra, My.Parkland and Wi-Fi access. Visit the STAR (Student Technical Assistance & Resources) office in D-248, contact the STAR Hotline at 217-353-3333, or email star@parkland.edu for technical assistance."

Illinois Articulation Initiative & Transferability as BIO910

- This course is the first course in a two course sequence for biology majors. The sequence that includes Bio 141 and Bio 142 currently articulates with the IAI Major Course Description for the Introductory Sequence for Biological Sciences Majors: BIO910.

<http://www.itransfer.org/iai/majors/default.aspx?file=iai§ion=students&t=Bio&p=da&key=BIO910>

Information contained in this syllabus may be subject to change. Any changes to the syllabus will be announced at the beginning of a class period.

Revised January 2015 – SAS/DMW