

PCB4723C - Physiology and Molecular Biology of Animals

Syllabus Awareness

You are solely responsible for reading and following the instructions, guidelines and schedules in this syllabus. Not having read the information in this syllabus will not constitute as an excuse.

Course Description

This course will cover fundamental principles of animal physiology at the molecular, cellular, tissue, systemic, and organismal levels. The course will utilize lectures, videos, primary scientific literature, reading assignments, discussions, group and individual projects, and online interactive laboratory exercises and associated lessons to facilitate learning of physiological principles.

Student Learning Outcomes

At the end of the course, students should be able to:

- Utilize critical thinking skills and apply physiological concepts and principles at the basic and applied science levels
- Describe the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems in animals
- Explain the basic mechanisms of homeostasis by integrating the functions of cells, tissues, organs, and organ systems
- Understand important physiological challenges animals face, how those challenges vary in relation to the animal's environment, and the processes by which animals deal with those challenges
- Understand the role of evolutionary processes in driving the organization of physiological systems
- Effectively solve basic problems in physiology, working independently and in groups
- Apply knowledge of functional mechanisms and their regulation to explain the pathophysiology underlying common diseases
- Successfully acquire primary literature articles through database searches
- Use primary literature readings to understand basic physiological principles and mechanisms
- Read and critically evaluate the design, results and conclusions of experiments published in primary physiology literature
- Interpret and knowledgeably discuss primary literature among peers
- Engage in basic scientific writing, including formulating a hypothesis, designing an experiment, and organizing necessary information in a scientific paper

Prerequisites

Two semesters each of general biology and general chemistry are required. General physics, genetics and biochemistry are recommended but not required.

Credits

5

Overview of Expected Participation in the Course

This is a fully online course, but you will be expected to be *present* online, participating and contributing on a regular basis throughout the term. Your participation, progress and learning will be assessed in several ways, including exams, quizzes, laboratory lessons, discussions, a research report and a group project. This course is NOT a "go at your own pace" course. Each module must be completed in a specific week.

The UF College of Liberal Arts and Sciences assumes that you will devote 3-4 hours per week per credit-hour to each course (and even a bit more in summer sessions). Because PCB4723C is **five credits**, you should therefore expect to devote **15-20 hours per week** to this course. There are 12 weeks during the summer semester; therefore, you should expect to spend 180-240 hours total on this course. If you find yourself spending more than 20 hours per week on average, discuss this with your course instructor or teaching assistant (TA) to see if you can refine your study habits. If you find yourself spending less than 10 hours per week on average, you should recognize that you may have difficulty fully learning and comprehending the material in this time, which will likely be reflected in poor performance on the various assessments causing you to receive a lower overall course grade.

If your schedule would prevent you from devoting 20 hours per week to the course, or if you will not have access to a reliable, high-speed internet connection at least twice weekly (except during the intersession break), you should probably not enroll in this course. Missing assignments due to loss of internet connection or experiencing technical issues will not constitute as an excuse. Since you have at least a week to complete most assignments, there is very little tolerance for missing an assignment. Do not wait until the last minute to complete an assignment. The course adheres to a strict timeline which students are expected to follow.

Instructor Information

MAIN INSTRUCTOR

Joni E. Wright, M.S.

Ph.D. Candidate in Zoology, Department of Biology

Office Hours: Thursdays, period 7 (1:55-2:45 pm) via Canvas Conferences

GRADUATE TEACHING ASSISTANT

Javiera Alarcón-Valenzuela

Ph.D. student in Zoology, Department of Biology

Office Hours: TBA

COUNSELING AND WELLNESS CENTER

For counseling and mental health concerns, contact the UF Counseling and Wellness center at <http://www.counseling.ufl.edu> or 392-1575, or the University Police Department at 392-1111 or 911 for emergencies.

Communication

COMMUNICATING WITH THE INSTRUCTOR AND GRADUATE TEACHING ASSISTANT

You must use the **Inbox** icon on the course Canvas site to communicate with the instructor or TA about this course through Canvas messaging. Do not use email, telephone, or the Discussion and Chat tabs. We will make every effort to respond to conversation messages within 48 hours on business days (i.e. Monday through Friday excluding holidays).

Office hours will be held via the **Conferences** tab in Canvas. At the designated office hour time, the instructor or TA will initiate a New Conference and students will receive an invitation in Canvas messages with a link to join the conference. Alternatively, a link to the conference will appear in the Conferences tab of Canvas. The conferences will take place via the web-conferencing system BigBlueButton (BBB), which is an Adobe Flash-based meeting software allowing students and instructors to collaborate in real time while sharing audio, video, and presentations, as well as an option for screen sharing. To participate in office hour conferences, students must have a laptop or desktop computer capable of running a web browser that supports the latest Adobe Flash update with computer memory and processing speeds sufficient to meet the minimum BBB requirements. BBB does not work on tablets or mobile devices. Students are strongly encouraged to use a

headset or ear buds to minimize audio problems and not inject ambient noise into the session. A laptop with a built-in webcam and microphone is sufficient, but must be used in a quiet area. If you do not have a webcam or microphone, you may still participate in office hours using the keyboard chat feature; however, **audio and video are required during the pre-discussion and post-presentation meetings**. If you cannot arrange these options for these meetings, the instructor or TA *may* be willing to work with you for on-campus meeting options provided you give advanced notice.

COMMUNICATING WITH THE OTHER STUDENTS

Discussion and Chat

Questions about course assignment deadlines, the course format, the course schedule and course mechanics can usually be answered most quickly by posting them to the Discussion or Chat tabs on the course Canvas site, and you are strongly encouraged to respond to your peers if you know the answer or can provide guidance for any question. The instructor and TA will *not* regularly monitor discussions or chats, so do not use these as a mechanism to ask them questions.

Course Content

The course material is comprised of textbook reading assignments, online lectures and videos, online laboratory lessons, and supplementary reading assignments including primary research articles. The lectures consist of either narrated slides or videos (or a combination of both in some cases) that synthesize, refine, and sometimes elaborate on the material in the textbook. You will complete a quiz on material from each textbook chapter and associated lectures. The online laboratory exercises will help you learn physiology with lessons and interactive simulations, as well as a problem based inquiry regarding a physiological phenomenon for which you will write a report. Discussions on primary research articles will reinforce physiological principles and help you learn to effectively communicate scientific information. Once during the semester, you will work in a team to present a primary research article in a narrated PowerPoint presentation, lead a discussion among your peers, and complete an oral examination on physiological topics related to the assigned article.

Required Course Materials

REQUIRED TEXTBOOK

Required Textbook: Animal Physiology, 4th edition, by Hill, Wyse and Anderson (Sinauer Associates), 2016©. ISBN: 9781605354712

COMPANION WEBSITE

Create an account at the Animal Physiology, 4th edition companion website at <https://animalphys4e.sinauer.com/quiz/>. To register for the site, follow the instructions provided in Module 1 on the course Canvas site. Be sure to use your ufl email to register so that your grades can be recorded.

PHYSIOLOGY SIMULATION SYSTEM

We will use the web application JustPhysiology to conduct physiology experiments. JustPhysiology is based on the HumMod simulation engine, which utilizes over 10,000 physiological variables. The model was initially developed at the University of Mississippi Medical Center. You will be provided a free license. To register and access the lessons, go to <http://www.justphysiology.com/> and register with your UF email address and the access code "sRoTaGfU".

COMPUTER REQUIREMENT

To complete the laboratory lessons, you must have a computer that runs the Windows operating system. As of December 2015, all of the simulations also run on Intel-based Macs running Boot Camp or VMware.

The course instructor will **not** provide any computer support. You may be able to get assistance from the UF Computing Help Desk, but in the past, most students have gotten the best support from other students in the course via discussion posts.

MODULES

Materials will be organized into weekly modules that can be viewed through the **Modules** tab in Canvas.

Activities and Assessments

EXAMS

There will be two written exams (a midterm and final exam worth 150 and 250 points, respectively) and one oral exam during the semester. The written exams will consist mostly of problem-based questions in the format of 50-60 multiple choice, fill-in-the-blank, ordering and numeric (calculation) questions. The written exams will be closed-book and you may **not** use notes. The midterm exam will cover all course material through the end of week 6 and the final exam will cover all course material from the entire term, but will primarily focus on the last half of the course. More information on the oral exam will be provided on the course site.

The midterm and final exams will be administered on campus and online, and all students will take each exam synchronously. Only a limited number of seats may be available to take the exam on campus. A sign-up will be available during the second week of the course after the drop/add period. If you choose to take the exams online, you must make the necessary arrangements with ProctorU for each scheduled exam time at a location that meets the ProctorU criteria. Information on how to make the arrangements, as well as the computer, connection and location requirements will be provided at the “ProctorU Information” link on the course syllabus tab. Failure to reserve a seat for the on-campus exam or make arrangements to take the exam online with ProctorU is the fault of the student, not the instructor or University.

To take the exams online, your computer must have a webcam (640 x 480 pixel resolution or higher), speakers or headphones, a microphone, and a reliable, high-speed internet connection. Consult the ProctorU student handout (available at the course syllabus tab) for more information about the technical requirements for taking the exam online.

In past semesters, some students have found it frustrating to take the exams online using ProctorU. If you will be in Gainesville during the exams, it is recommended that you take the exam on campus. The exam location will be announced on the course Canvas site. The number of seats available to take the exam on campus is limited; therefore, a spot to take the exam on campus is not guaranteed. There will be an on-campus sign-up sheet on the course Canvas site during the second week of class after the add/drop period has passed.

SYLLABUS QUIZ

During the first week of classes, you must pass the syllabus quiz with at least an 80% in order to continue in the course. You may take the syllabus quiz an unlimited number of times until you achieve the required score.

CHAPTER QUIZZES

You are expected to read assigned textbook chapters and watch lectures and/or videos associated with each chapter on a weekly basis during the semester. There will be quizzes covering information from each chapter reading assignment and its associated lectures/videos.

Quizzes will be available at the textbook’s companion website published by Sinauer Associates (<https://animalphys4e.sinauer.com/quiz/>). You must create an account and register for the quizzes using the instructor’s email address (jwright1855@ufl.edu) to access the “PCB4723C_Summer2017” course material.

The score you receive on your first attempt will be recorded in the Canvas gradebook; however, you may take the chapter quizzes an unlimited number of times to ensure that you understand chapter material. You must complete your first quiz attempt by the deadline indicated in Canvas to receive credit for the quiz. Quiz scores will not be automatically populated in the Canvas gradebook. Please allow time for manual transfer of grades from the companion site to Canvas.

SIMULATION SOFTWARE AND LABORATORY LESSONS

You will complete seven online laboratory exercises using simulation software in which you will perform experiments and complete lessons on your computer using computerized mathematical simulation software to investigate physiological principles. All simulation software packages used in the course are publicly available for your use. You must download and install each package to participate in the course activities.

- **Nernst-Goldman Simulator**
A simple simulation of resting membrane potential and action potentials in neurons using the Hodgkin-Huxley model: <http://www.nernstgoldman.physiology.arizona.edu/>. This simulator requires installation of Adobe Flash Player 8 plug-in. If you have trouble accessing the web version, download the stand-alone version appropriate for your system.
- **Nerve**
A web-based simulation of nerve action potentials and action potential propagation (with a squid model): <http://nerve.bsd.uchicago.edu/nervejs/MAP.html>.
(non-java version: <http://nerve.bsd.uchicago.edu/nervejs/MAP.html>)
- **SWIMMY**
A simulation of a complex neural network in a fish. The software was developed at UCLA, based on NEURON software developed primarily at Duke University. The software can be downloaded from <https://mdcune.psych.ucla.edu/modules/swimmy>.
- **HumMod**
HumMod Modeler is a detailed, customizable simulation of human physiology that utilizes over 5,000 physiological variables. The software was initially developed at the University of Mississippi Medical Center. The project is <http://hummod.org/>. HumMod may also be available on UF Apps.
- **JustPhysiology**
JustPhysiology (www.justphysiology.com) is a web application based on the HumMod simulation engine. An access code was provided in the “Required Course Materials” section of this syllabus.

RESEARCH REPORT AND PEER REVIEW

You will individually complete a research report during the semester. For this report, you will be provided with a research problem about a physiological phenomenon. You will investigate the problem using the JustPhysiology simulation software and individually complete a research report. You will typically do the following:

1. Develop a hypothesis for the assigned problem.
2. Design and conduct an experiment to test your hypothesis using the JustPhysiology simulation software.
3. Collect and analyze the data.
4. Craft a clear, well-supported first-draft report.
5. Submit your first-draft report for peer review.
6. Participate in peer reviews of other student first-draft reports.
7. Revise your first-draft report based on reviewer feedback (this may involve designing and running new experiments).
8. Submit your final report for peer review.
9. Participate in peer reviews of other student final reports.

Your report must be formatted according to the detailed instructions provided for each report, which will be posted on the course Canvas site. Reports that are not formatted correctly will receive a score of zero. You are welcome to work on your report with other students in the course, but the final product must represent your own work. Completion of each research report, including the peer review process, will typically require 12 hours.

DISCUSSIONS

Engaging in discussion is an important tool to help students recognize their level of understanding of physiological concepts and fundamental principles. If you cannot effectively explain a concept to someone else, you likely do not understand it yourself. Research shows that learning through discussion allows 50% retention of information compared with 5% and 10% through lecture and reading, respectively. Discussion also engages students in active, rather than passive, learning contributing to the development of critical thinking skills necessary for future career success.

Each student will be assigned to a Discussion Group at the beginning of the semester along with a subset of your peers. You will be required to participate in discussions based on assigned primary physiology research articles this semester. Some of these articles are classic, seminal papers, while others are modern articles. Reading and discussing the articles will help to reinforce the physiological concepts you learn this semester. A strict timeline will be adhered to for the discussions. Discussions are not just about posting ideas for others to read. You are expected to have a conversation with your peers. **Pay close attention to the deadlines and the rubric** for original discussion posts, response posts, and reply posts. The deadlines are posted in modules in Canvas and in the calendar at the end of this syllabus.

Discussion Participation: You will receive participation points reflecting the quality and extent of your participation in the discussion. A rubric will be posted for each discussion assignment in Canvas to communicate the expectations for discussion participation. Be sure to read the rubric ahead of time so that you may maximize the points you earn as a discussion participant. In general, students will be expected to contribute a specific number of original, response, and/or reply posts and demonstrate an ability to think critically and extend the discussion conversation with their peers.

Original Posts: A list of topics will be provided by the instructor in each discussion forum. Each participant will provide an original post on one of these topics. More than one post on the same topic is **not** permitted, therefore it is in your best interest to enter the discussion early. You may claim a topic by copying the topic to a post, then come back later *before* the deadline to edit your post to address the topic. A rubric detailing assignment expectations will be available on the Canvas course site.

Response Posts: Response posts are posts made in response to an original post. Pay close attention to the due dates for these posts.

Reply Posts: Reply posts are posts made in response to a response post (rather than an original post). Pay close attention to the due dates for these posts.

A rubric detailing the expectations for original, response and reply posts will be available on the Canvas course site.

MICROSOFT POWERPOINT TUTORIAL

During the first week of class, you must take a tutorial on Microsoft PowerPoint. You will be required to create a narrated PowerPoint presentation for the Article Discussion Leader Presentation semester group project. This tutorial will assist you in navigating PowerPoint to create a visually appealing presentation that effectively communicates the requirements for the project. Completing the Microsoft PowerPoint Tutorial assignment is required in order to participate in and earn points for the Article Discussion Leader Presentation Project assignment.

LITERATURE SEARCH EXERCISE

During the first week of class, you will complete a literature search exercise which will teach you how to find primary research articles. Many students earn their undergraduate degrees having never learned this vital skill.

PCB4723C Sect. 7B70 & 7C03, Summer C 2017

rev: 4/30/17

As a scientist, you are expected to base your opinions and research on peer-reviewed publications. The first step is knowing how and where to find scientific literature to help you form opinions and complete research. Peer review is a process by which scholarly work is evaluated by professionals working in the same field as the investigator/author attempting to have their work published. Scientific articles that have undergone rigorous peer-review have been evaluated by scientists that are experts in that field. Completing the Literature Search Exercise assignment is required to participate in and earn points for the Article Discussion Leader Presentation Project assignment.

PRIMARY RESEARCH ARTICLE DISCUSSION

Six primary research articles will be assigned for you to read during the semester. These articles will serve as the basis for the discussions. Once during the semester, you will be a **discussion leader**. During three of the other article discussions, you will be a **discussion participant**. Each article will be released two weeks prior to its scheduled discussion giving discussion leaders two weeks to work in a group to prepare a narrated PowerPoint presentation summarizing the article and teaching associated concepts.

ARTICLE DISCUSSION LEADER PRESENTATION PROJECTS

Once during the semester, a group of students will work together to prepare a narrated PowerPoint presentation based on one of the physiology article assigned readings. During the first week of class, students will be assigned to an Article Project Group in the People tab of Canvas (note that these groups will contain different students than those in the Discussion Groups).

The students in an article project group will create a narrated PowerPoint presentation, lead a discussion on the assigned article within their respective discussion group, and independently complete an oral exam on a topic associated with the article. Not all members of your Article Project Group will belong to the same Discussion Group to which you belong. Every student in the group is expected to understand, as well as explain, teach, and discuss *all* parts of the article, as well as the related physiological concepts. Although your group members may decide to split up the topics that must be presented in your presentation, every group member must fully understand all the topics and the article in order to lead an effective discussion among their peers. To ensure that every group member adheres to this requirement, students will be verbally tested on topics related to the article during a required post-presentation meeting with the instructor or TA. Exam topics will be released to discussion leaders during the required pre-discussion meeting. During the post-presentation meeting, the instructor or TA will ask each student to verbally provide a short presentation addressing one of the topics via Canvas conferences in BBB. Students are allowed to use slides created for their presentation during the exam, as well as refer to any notes. A grading rubric will be made available in Canvas.

A rubric will be posted for the discussion leader assignment in Canvas to communicate the expectations for the assignment. Be sure to read the rubric ahead of time so that you may maximize the points you earn as a discussion leader. In general, discussion leaders will be expected to summarize the article including pertinent background information, *brief* methodology, results, and conclusions, use the article to teach related physiological principles to peers, and lead and facilitate a discussion. Articles will be released two weeks prior to the date the narrated PowerPoint presentation is due and then discussion leaders will lead a discussion during the following week (i.e. after the presentation due date), allowing all presenters/discussion leaders two weeks of preparation time. Article leaders are required to electronically meet with the instructor or TA via BBB within the first four days after the article is released. Article leaders are also required to electronically meet with the instructor or TA within 3 days of the presentation deadline (before or after) to complete the oral examination associated with the article. A message with a link to a doodle poll to ascertain availability for these meetings will be sent out the week before the article is released. Respond to these emails promptly by indicating **ALL** of your availability in the doodle poll as soon as possible. Members of each group are not required to meet with the instructor at the same time; however, meetings will be organized to maximize the number of students attending each meeting. The meeting time will be based on your individual availability. The article discussion leader rubric will indicate expectations for these meetings. Be sure to read the rubric ahead of time. Students

must read the article **PRIOR** to the pre-discussion meeting and be prepared to summarize major points of the article and ask questions to clarify their understanding of the article.

Project Showcase Peer Review: After all presentation deadlines have passed, all of the narrated PowerPoint presentations created by students will be posted to a discussion forum to showcase presentations completed for each article. Each student will be assigned PowerPoint presentations to watch and review. Posting feedback in the discussion forum and evaluating an assigned presentation will contribute to a portion of the grade you earn for the discussion leader presentation project. See the instructions and rubric posted in Canvas for more details.

Grading

Assessment Type	Quantity	Point Value	Subtotal	Percentage	Time (est.)
Lecture Assignments				50.1%	
Syllabus Quiz*	1	5	5	0.5%	1 h
Exam I (Midterm)	1	150	150	15.0%	2 h
Exam II (Cumulative Final)	1	250	250	25.0%	2 h
Chapter Quizzes	24	4	96	9.6%	80 h
Laboratory Assignments				22.0%	
Lessons & Simulations	7	20	140	14.0%	21 h
Research Report: Draft & Final Reports & Peer Reviews	1	80	80	8.0%	24 h
Discussion Assignments				27.9%	
Microsoft PowerPoint Tutorial [‡]	1	10	10	1%	5 h
Literature Search Exercise [‡]	1	9	9	0.9%	3 h
Article Discussion Participation	6	10	60	6.0%	12 h
Article Discussion Leader Presentation Project	1	200	200	20.0%	30 h
Total			1000	100.00%	180

*The student must obtain an 80% or higher on the assignment to participate in and receive credit for subsequent assignments (i.e. to continue in the course).[‡]The student must complete the assignment in order to participate in and receive credit for the Article Discussion Leader Presentation Project.

GRADE DISTRIBUTION

Point Range	Letter Grade	Point Range	Letter Grade
93.33 or higher	A	73.33-76.65	C
90-93.32	A-	70-73.32	C-
86.66-89.99	B+	66.66-69.99	D+
83.33-86.65	B	63.33-66.65	D
80-83.32	B-	60-63.32	D-
76.66-79.99	C+	< 60	E

Grades will not be assigned to a curve, but the grade cutoffs may be adjusted downward. In other words, if your final point accumulation is 93.33%, then you are guaranteed to receive an A.

Note that a C- is not considered passing for most majors. More information about the UF grading policy is available at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

PCB4723C Sect. 7B70 & 7C03, Summer C 2017

rev: 4/30/17

EXTRA CREDIT

There are no planned opportunities for extra credit in this course.

Additional Policies

ACADEMIC HONESTY & PLAGIARISM

Giving or receiving any unauthorized assistance during assessments will be treated as a deliberate violation of the UF Academic Honesty policy. This will result in a failing grade.

If you are aware of a climate that promotes academic dishonesty, please notify the instructor or contact the Student Honor Court (392-1631) or the Cheating Hotline (392-6999).

Students must abide by the Student Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>). Violations may result in sanctions ranging from reprimand to expulsion. (See the section on Student Conduct Code Sanctions for a full list.)

Plagiarism is a serious violation of this honor code. Plagiarism includes (among other things) using other's ideas or words without giving credit, changing just a few words or copying too many words from a source (even if you give credit), citing improperly, and submitting someone else's work as your own. No credit will be given for any assignment that includes plagiarized text and students engaging in plagiarism will be reported to the Student Conduct & Conflict Resolution Dean of Students Office.

ATTENDANCE AND ABSENCES

If you must miss an assignment or exam due to an allowable scheduled absence (for example, to participate in a sanctioned university function), you must notify the instructor as soon as the event is scheduled or during the first week of classes. If you miss an assignment or exam due to an allowable but unscheduled absence (e.g., illness), you must contact the instructor as soon as possible. In the case of illness, you must provide a signed note from your primary care provider indicating that you were unable to complete the assignment during the entire week it was available or to take the exam on the day it was scheduled; it is not sufficient for the note to simply indicate that you were seen in a clinic on a given day. Since you have at least a week to complete most assignments, the threshold is very high for accepting illness as an excuse for missing an assignment.

Requirements for class attendance and make-up exams, assignments, and other work in this course are otherwise consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

STUDENTS WITH SPECIAL NEEDS

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. This should be done by the second week of classes. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed.

COURSE EVALUATION

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

COURSE SCHEDULE

Refer to the course home page syllabus site for due dates and schedules, including the exam times.

TB = Textbook (Hill, Wyse & Anderson) Quiz

Module (Dates)	Reading Assignments: Chapter.Topic & • Supplementary	Laboratory Lessons	Assignments, Quizzes & Exams	Discussions
1 May 8-14	<ul style="list-style-type: none"> Syllabus 1. Animals & Environments 2. Molecules & Cells in Animal Physiology 3. Approaches to Physiology • Article 1 		Syllabus quiz; PowerPoint Tutorial; Lit Search Exercise; TB 1, 2 & 3	
2 May 15-21	<ul style="list-style-type: none"> 5. Transport of Solutes & Water 7. Energy Metabolism 8. Aerobic & Anaerobic Forms of Metabolism • Article 2 	Lab 1: Membrane Potential	TB 5, 7 & 8	
3 May 22-28	<ul style="list-style-type: none"> 12. Neurons 13. Synapses • Article 3 	Lab 2: Synapses	TB 12 & 13	Article 1 (<i>note: no discussion leaders</i>)
4 May 29-June 4	<ul style="list-style-type: none"> 14. Sensory Processes 15. Nervous System Organization & Biological Clocks 	Lab 3: TBD	14 & 15	
5 June 5-11	<ul style="list-style-type: none"> 16. Endocrine & Neuroendocrine Physiology 20. Muscle Physiology 19. Control of Movement 	Lab 4: TBD	TB 16, 20 & 19	Article 2
6 June 12-18			June 15 th – Midterm Exam (<i>Chapters 1-3, 5, 7-8, 12-16, 19-20</i>)	
June 19 – 23	<i>Intersession Break</i>			
7 June 26 – July 2	<ul style="list-style-type: none"> 22. Introduction to Oxygen & Carbon Dioxide Physiology 24. Transport of Oxygen & Carbon Dioxide in Body Fluids 25. Circulation • Articles 4 & 5 		TB 22, 24 & 25	Article 3
8 July 3-9	<ul style="list-style-type: none"> 9. The Energetics of Aerobic Activity 23. External Respiration • Article 6 		Research Report (Draft 1); TB 9 & 23	
9 July 10-16	<ul style="list-style-type: none"> 27. Water & Salt Physiology 28. Water & Salt Physiology of Animals in Their Environments 	Lab 5: Control of Ventilation	Research Report (Reviews); TB 27 & 28	Article 4 (<i>note: no discussion leaders</i>)
10 July 17-23	<ul style="list-style-type: none"> 29. Kidneys & Excretion 6. Nutrition, Feeding & Digestion 	Lab 6: Gas Exchange	Research Report (Back-Evals & Final Draft); TB 29 & 6	Article 5
11 July 24- 30	<ul style="list-style-type: none"> 10. Thermal Relations 17. Reproduction 	Lab 7: Water & Solute Distribution	Research Report (Reviews); TB 10 & 17	Article 6
12 July 31-Aug 4			Research Report (Back-Evals); Aug 2 nd – Final Exam	Project Showcase

MAY 2017

SUBJECT PCB4723C PERIOD Online

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SUN
WEEK 1	8 Summer Classes Start	9	10	11	12 Syllabus Quiz*	14 TB 1, 2, & 3; ppt tutorial; lit search exercise‡
	notes				(Article 1 release)	
WEEK 2	15	16	17	18	19	21 TB 5, 7, & 8; Lab 1
	notes				(Article 2 release)	
WEEK 3	22	23	24 Article 1 Disc: Original Post due	25	26 Article 1 Disc: Response Posts due	28 TB 12 & 13; Lab 2; Article 1 Disc: Reply Posts due
	notes			(Article 3 release)†		
WEEK 4	29 Memorial Day (Holiday)	30	31			TB 14 & 15; Lab 3;
	notes				Article 2 Group Presentation Due	

* The student must obtain an 80% or higher on the Syllabus Quiz to continue in the course.

‡ The student must complete the PowerPoint Tutorial and Literature Search Exercise assignments in order to participate in and receive credit for the Article Discussion Leader Presentation Project (worth 200 points, i.e. 20% of the total course grade).

†Early release due to upcoming holiday.

TB = Textbook (Hill, Wyse & Anderson) Quiz

 **Assignment due for all students enrolled in the course.**

 **Assignment due for Discussion Leaders only.**

 **Assignment due for Discussion Participants only.**

Assignments are due no later than 11:59 p.m. on the date indicated. Late assignments will NOT be accepted.

JUNE 2017


SUBJECT PCB4723C PERIOD Online

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SUN
WEEK 4	Memorial Day (Holiday)			1	2	4 TB 14 & 15; Lab 3;
notes					Article 2 Group Presentation Due	
WEEK 5	5	6	7 Article 2 Disc: Original Post due	8	9 Article 2 Disc: Response Posts due	11 TB 16, 20 & 19; Lab 4; Article 2 Disc: Reply Posts due
notes					Article 3 Group Presentation Due	
WEEK 6	12	13	14	15 Exam I: Midterm Exam	16	18
notes						
WEEK 7	19 Interession Break	20 Interession Break	21 Interession Break	22 Interession Break	23 Interession Break	25
notes	Assignment	Access	Will NOT be	Available	During the Break.	
WEEK 7	26 Research Report Assignment Instructions Released	27	28 Article 3 Disc: Original Post due	29 (Article 5 release)†	30 Article 3 Disc: Response Posts due	TB 22, 24, & 25; Lab 5 Article 3 Disc: Reply Posts due
notes	(Article 4 release)					

TB = Textbook (Hill, Wyse & Anderson) Quiz

†Early release due to upcoming holiday.

Assignments are due no later than 11:59 p.m. on the date indicated. Late assignments will NOT be accepted.

 Assignment due for all students enrolled in the course.

 Assignment due for Discussion Leaders only.

 Assignment due for Discussion Participants only.

JULY 2017

SUBJECT PCB4723C PERIOD Online

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SUN
WEEK 7	Research Report Assignment Instructions Released notes (Article 4 release)		Article 3 Disc: Original Post due	(Article 5 release)†	Article 3 Disc: Response Posts due	2 TB 22, 24, & 25; Article 3 Disc: Reply Posts due
WEEK 8	3	4 Independence Day (Holiday)	5	6	7	9 TB 9 & 23; Res. Rept. Draft 1;
WEEK 9	10	11	12 Article 4 Disc: Original Post due	13	14 Article 4 Disc: Response Posts due	16 TB 27 & 28; Lab 5; Res. Rept. Reviews; Article 4 Disc:
WEEK 10	17	18	19 Article 5 Disc: Original Post due	20	21 Article 5 Disc: Response Posts due	23 TB 29 & 6; Res. Rept. Final Draft; Lab 6; Article 5 Disc: Reply Posts due
WEEK 11	24	25	26 Article 6 Disc: Original Post due	27	28 Article 6 Disc: Response Posts due	30 TB 10 & 17; Res. Rept. Reviews; Lab 7; Article 6 Disc: Reply Posts due
WEEK 11	notes (Showcase Available)					

See keys at the bottom of pages containing May and June schedules.

AUGUST 2017

SUBJECT PCB4723C PERIOD Online

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SAT/SUN
WEEK 12		1 Exam 2: Cumulative Final Exam	2 Project Showcase Due	3	4 Summer Classes End	5/6
WEEK	7	8	9	10	11	12/13
WEEK	14	15	16	17	18	19/20
WEEK	21 Fall Classes Begin	22	23	24	25	26/27
WEEK	28	29	30	31		
WEEK						