BIOL 161 – Anatomy and Physiology I

Thank you for coming along with us on this journey through the human body. We will be examining the structure and function of the human organ systems and more importantly, how they work together to ensure homeostasis in a healthy individual. As the first course of our anatomy and physiology series, we will focus on the integumentary, nervous, endocrine, skeletal and muscular systems. And when things go wrong, we will consider disease states. Welcome!

Basic Course Information

Course ID: 8640
Number/Section: BIOL 161-001
Fulfills: General Education requirement, Natural Sciences (GN)
Pre-requisites & Co-requisites: None

Instructor Information

Name: Nicole Squyres
Email address: nss28@psu.edu
Office hours: TBD

Course Resources

There are *no required texts* for this course. Readings and course materials will be posted directly to the PSU Canvas site.

If you would like to invest in a textbook, here are two suggested reference texts. However, we encourage you to peruse freely available e-Textbooks on the PSU Libraries website. Ask the instructor if you need help finding a quality textbook.

1. Fundamentals of Anatomy and Physiology 10th Ed. by Martini, Nath, and Bartholomew to be used as a reference

2. Anatomy & Physiology: The Unity of Form and Function 7th Ed. by Ken Saladin to be used as a reference

Technical Requirements

Because the course is 3 credit hours, 135 hours of work per semester or approximately 11 hours of work per week can be expected. The course content and assessment is communicated on Canvas. Therefore, *Internet access for about 11 hours every week* would be ideal for success in this course.

More information can be found on World Campus's General Technical Requirements page https://www.worldcampus.psu.edu/general-technical-requirements.

Operating System	Windows 7, Windows 8/8.1 or higher; Mac OS X 10.5 or higher recommended
Processor	2 GHz or higher
Memory	1 GB of RAM
Hard Drive Space	60GB free disk space
Browser	Canvas supports the last two versions of every major browser release. We highly recommend updating to the newest version of whatever browser you are using as well as the most up-to-date Flash plug-in. To determine if your browser is supported, please review the list of Canvas Supported Browsers – found on website. Note: Cookies, Java, and JavaScript must be enabled. Pop-up blockers should be configured to permit new windows from Penn State websites. Due to nonstandard handling of CSS, JavaScript and caching, older versions of Internet Explorer (such as IE 8 or earlier) do not work with our courses.
Plug-ins	Adobe Reader Flash Player (v18.0 or later) The Adobe suite is freely available for all PSU students. Go to adobe.psu.edu. See also “Technical Support” at the bottom of the syllabus.
Additional Software	Microsoft Office and PowerPoint (2010 or later)

	The Microsoft suite is freely available for all PSU students. Go to software.psu.edu. Zoom (which is free), or other software that will allow you to record a short video presentation.
Internet Connection	Broadband (cable or DSL) connection required
Sound Card, Microphone, and Speakers	Required
Monitor	Monitor (Capable of at least 1024 x 768 resolution)

Major Learning Objectives (Individual module learning objectives are listed in CANVAS**)**

1. Recognize and explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.

2. Use anatomical knowledge to predict physiological consequences and use knowledge of function to explain the features of anatomical structures.

3. Recognize and explain the interrelationships within and between the different body systems.

4. Apply knowledge of anatomy and physiology to real-world situations, including clinical cases, health and lifestyle decisions, and homeostatic imbalances, by explaining and justifying your decision.

5. Interpret and explain different types of anatomical images and graphs of physiological data.

General Education Learning Objectives

1. *Critical and Analytical Thinking* - The comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating a conclusion. It is the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

2. *Integrative Thinking* – The ability to synthesize knowledge across multiple domains, as well as the ability to identify linkages between existing knowledge and new information. Individuals who engage in integrative thinking are able to transfer knowledge within and beyond current contexts.

Overview of Course Structure:

Each week you will work through one Canvas module (except for the first week of classes, which has two modules). All work is asynchronous. Each week/module will consist of the same four major components:

1. **Engage**

   Each module will begin by presenting you with a clinical case study that highlights some of the topics we will be covering that week. You will also be given some guiding questions that we will answer that week (e.g. "how do bones grow?", "how do neurons communicate with each other?"), and learning objectives.

2. **Learn**

   Course content will be provided in each module in the form of text, images, and short videos. Each module will also contain a set of practice questions embedded within the content. Practice questions will not be graded, and are simply a chance for you to check your understanding of the concepts before completing any graded work. After reviewing the week's content, you will submit a Foundation assignment (due Thursdays at midnight). Foundation assignments are graded open-book Canvas quizzes. The goal of this assignment is to ensure that you understand the fundamental ideas from that week's material.

3. **Apply**

   After reviewing the material and completing the Foundation assignment, you will then complete an Application assignment. Application assignments will have three major steps: 1) submission of a first draft (due Thursdays at midnight), 2) participation in a discussion forum (due Sundays at midnight), and 3) submission of a final draft (due Mondays at midnight). These assignments will require you to look at the material in greater depth, make connections to previous course material, and apply your knowledge to clinical correlations. Each Application assignment will tie in to the clinical case study from the beginning of the week. More information on these assignments is provided below.

4. **Reflect**

   The final section of every Application assignment will ask you to reflect on your learning that week and consider questions like: "what is a misconception you cleared up?", "what was the most confusing topic this week and why?", or "what is a question you still have on this week's material?". This type of reflection will help you evaluate your learning and progress throughout the course!

The course also includes four short open-book exams, and one presentation project (see below for further details and due dates).

Course Calendar and Schedule

This course runs from May 17th until August 11th. Each module is a week of the course, and each week is defined as Tuesday to Monday (to allow students to complete work on the weekend).

The schedule below is subject to change at the instructor's discretion. Any changes to the schedule will be made in writing, through a Canvas announcement and email.

Topic of the Week (Module)	Dates	Assignments Due
Introduction	Week 1	Syllabus Quiz (Due 5/20) Intro Discussion (Due 5/24)
Chemistry and Cell Structure	Week 1	Foundation 1 (Due 5/20) Application 1 (Due 5/24)
Tissues	Week 2	Foundation 2 (Due 5/27) Application 2 (Due 6/1)
Integumentary System (Skin)	Week 3	Foundation 3 (Due 6/3) Application 3 (Due 6/7)
Introduction to Nervous System	Week 4	Foundation 4 (Due 6/10) Application 4 (Due 6/14) **Exam 1 (Due 6/8)**
Electrophysiology I	Week 5	Foundation 5 (Due 6/17) Application 5 (Due 6/21)
Electrophysiology II	Week 6	Foundation 6 (Due 6/24) Application 6 (Due 6/28)
Secretion & Functional Division of Nervous System	Week 7	Foundation 7 (Due 7/1) Application 7 (Due 7/6) **Exam 2 (Due 6/29)**
Brain & Special Senses	Week 8	Foundation 8 (Due 7/8) Application 8 (Due 7/12)
Skeletal Muscle Histology	Week 9	Foundation 9 (Due 7/15) Application 9 (Due 7/19)
Skeletal Muscle Contraction	Week 10	Foundation 10 (Due 7/22) Application 10 (Due 7/26) **Exam 3 (Due 7/20)**

Skeletal System & Joints	Week 11	Foundation 11 (Due 7/29) Application 11 (Due 8/2)
Hormones and the Skeletal System	Week 12	Foundation 12 (Due 8/5) Application 12 (Due 8/9)
Finals Week (no module)		**Exam 4: Non-cumulative! (Due 8/13)**

Grading Policy

Your grade will be calculated based on the following breakdown:

Foundation assignments: 18% of final grade (12 assignments, 1.5% each)
Application assignments: 36% of final grade (12 assignments, 3% each)
Exams: 36% of final grade (4 exams, 9% each)
Presentation Project: 10% of final grade

There is no extra credit of any kind.

Grading Scale

Grades will be assigned using the following cutoffs: A >93%; A- >90%; B+ >88%; B >83%; B- >80%; C+>78%; C>70%; D>60%; and F< 60%. There is no "rounding up" so if you earn 89.6% of the course points for instance, then your final course grade will be a B+ since you would still be below the 90% cut-off for the A-. If the average course grade for the entire class is below 70%, slightly lower cut-offs may be calculated based upon the average and standard deviation.

Assignment Descriptions

- **Foundation Assignments**

  Due every Thursday at midnight. These assignments are open-book, non-timed, Canvas quizzes. Questions will be multiple choice, multiple select, true/false, and matching. These assignments will assess your knowledge of basic facts and concepts presented in that week's module. Practice questions will also be provided within each module. You are encouraged to complete each module's practice questions before submitting any assignments, but it is not required. The "Syllabus Quiz" in the first module will be counted as a Foundation assignment and one lowest Foundation assignment grade will be dropped when calculating your final course grade. Each Foundation assignment is worth 10 points.

- **Application Assignments and Discussion**

These assignments will consist of a series of short-answer questions. They will tie in with that week's clinical case, and will ask you to apply your knowledge of anatomy and physiology to real-world scenarios. These assignments are designed to be more challenging than the Foundation assignments, so you will have the chance to get feedback on them from peers and your instructor. Each Application assignment is worth 15 points (5 points for the discussion, 10 points for the final submission). There will be three stages to the submission of each application assignment:

1. Submit an initial draft of the assignment to that week's discussion board (Due Thursdays at midnight). This draft does NOT have to be perfect, and will not be graded for accuracy, but you are expected to try to answer all of the questions. In your initial comment on the discussion board, you should include your draft of the assignment (worth 2 points), and pose at least one question (worth 1 point). Your question(s) can be about the application assignment, or about any other topic from that week's module, but should be something that you would like feedback/clarification/input on from other students and your instructor. Although the Foundation assignment and the first draft of the Application assignment have the same due date (both are due at midnight on Thursdays for simplicity), you are *strongly encouraged* to first complete your Foundation assignment before beginning the Application assignment.
2. Submit comments on at least two other students' drafts/questions in the discussion board. In your comment, you should try to answer their question and give feedback on their draft (what you agree on, what you disagree on, and why). Your comments are worth 2 points, and are due Sundays at midnight. Your instructor will also submit comments to the discussion during this time-period to help address any questions or misconceptions.
3. After reviewing the feedback on your draft from your classmates and the instructor, you will submit a final draft of your assignment for a grade (Due Mondays at midnight, worth 10 points).

The "Introduce Yourself" discussion in the first module will be counted as an Application assignment and one lowest Application assignment grade will be dropped when calculating your final grade in the course.

In the discussion boards, you will be interacting with your peers and we expect you to do so in a respectful and thoughtful manner. By participating in this course, you agree to take on the mutual responsibility to maintain a safe, inclusive, and welcoming learning environment for all. You agree to:

1. Approach each interaction with empathy.
    a. Every member of this course has a different background, set of life experiences, and story. We agree to listen, let people speak for themselves, and focus on inquiring instead of interrogating.
    b. Every member of this course does not have equal access to the course. We are all currently in different working environments – trying to come together in this learning environment. We will be patient and considerate.
    c. We are a diverse group of learners. We will be cognizant of social disparities and do our best to create an equitable experience for all.

    d. Constructive criticism and feedback generally includes (1) a positive comment or something the post made you consider differently as well as (2) an opportunity for improvement.
2. Be an active bystander.
    a. We will recognize disrespectful language.
    b. We will intervene, or step in to say we do not allow that language in our community.
    c. We will respectfully tell people, including the instructors, how they can be better. Everyone is always improving and learning. We can help each other in the process.

- **Exams**

Four exams will be given throughout the course (see schedule above). Each exam will cover the previous three modules (exams are not cumulative, including the final exam). Each exam is only worth 9% of your final grade in the course, so do not think of these as being too intimidating! Exams will be open-book, but are timed. Exam questions will be mostly short answer, but may also include some multiple choice, multiple select, true/false and/or matching questions. Although the exams are open-book, it is very important that work on them entirely by yourself. Collaborating or sharing exam questions or answers with any other person (inside or outside the course) will be treated as a serious violation of academic integrity (see below).

- **Presentation Project**

You will complete one Presentation Project during the course, which will be worth 10% of your final grade. For this project, you will create a short video presentation on one of the course's topics. Presentations will be spread out throughout the course. During the first week of the course, you will be asked to sign up for a specific presentation due date. You are welcome to choose any presentation topic and due date that you like, but once you make your choice you will not be permitted to change it unless you have major extenuating circumstances (such as a major illness). General topics and due dates are as follows:

Presentation Group	**Potential Topics (Modules)**	**Due Date**
Group 1	Chemistry & Cell Structure Tissues Skin	
Group 2	Intro to Nervous System Electrophysiology I Electrophysiology II	

Group 3	Secretion & Nervous Divisions Brain & Special Senses Skeletal Muscle Histology	
Group 4	Muscle Contraction Skeleton & Joints Hormones and the Skeleton	

The goal of this project is to create a short video presentation that will be a useful study aid for your fellow students (note that due dates for each of the above groups are shortly before the corresponding exams). A complete project description and grading rubric are posted on Canvas in the Introduction module- please read through these carefully! Your video will ultimately be uploaded to YouTube (unlisted), where other students will be able to view it. If, after reading through the assignment description, you have any concerns about the technology/software needed to complete this project, please speak to your instructor.

Once you have signed up for one of the Presentation dates listed above, you will be given a more specific list of presentation topics that you may choose from (but your topic will be from within one of the modules listed above).

Late Assignment Policy

All Foundation assignments and final Application submissions will be accepted **up to one week late for half credit** (i.e., a maximum score of 5 points each). If you have a situation that is causing you to miss assignments or fall behind, please speak to your instructor! Your instructor may grant you an extension if your circumstances warrant it (situations such as major illness, death in the family, etc.). You cannot earn any points for late submission of your Application draft or discussion comments (worth 5 points), since the goal of these is to get timely feedback and participate in a discussion with your peers before the final draft of the assignment is due.

Exams will be open for 24 hours on the day that they are assigned, meaning that you can take them anytime during that 24-hour window. In general, exam makeups will only be given in specific circumstances (including major illness, death in the family, a PSU recognized religious holiday, or PSU sponsored event such as an athletic competition). If you need an exam makeup, you must request your makeup **before** the exam begins in order for your request to be considered. If you forget to take an exam, for example, you will receive a 0 on that exam. If you have a technical problem occur while you are taking an exam, please email your instructor **right away** so that they can address the issue and ensure that you can complete the exam. If you do not notify your instructor right away of any technical problem, you may not be permitted to re-take the exam or make up any questions that you missed.

You will be given a specific due date for your Presentation Project, depending on what topic you choose to present on. Your Presentation Project will be accepted up to one week late, however you will **lose 10% of your grade for each day that it is late**. It is especially important to submit these projects on time, because they will be a useful resource for other students while they are preparing for the corresponding exam.

Academic Integrity

Academic dishonesty is not limited to simply cheating on an exam or assignment. The following is quoted directly from the "PSU Faculty Senate Policies for Students" regarding academic integrity and academic dishonesty:

"Academic integrity is the pursuit of scholarly activity free from fraud and deception and is an educational objective of this institution. Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating of information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students."

All University and Eberly College of Science policies regarding academic integrity / academic dishonesty apply to this course and the students enrolled in this course. Further details on academic integrity policies can be found on the Eberly College of Science website. Each student in this course is expected to work entirely on her/his own while taking any exam and to abide by University and Eberly College of Science policies about academic integrity and academic dishonesty. Academic dishonesty can result in assignment of "F" by the course instructors or "XF" by Judicial Affairs as the final grade for the student.

Academic dishonesty (in any form), will not be tolerated in this course.

In this course, we would like to explicitly encourage you to work with other students on the Foundation and Application assignments. However, this does not mean simply giving another student (or a group of students) the answers to an assignment. For example, it is a great practice to form a small study group (2-5 students), and work collaboratively on these assignments. **It is not acceptable, however, to share the answers to an assignment with other students without any discussion or collaboration.**

When it comes to the exams, you are expected to work completely by yourself. All exams in this course are open-book, meaning that you may refer to your notes and any class material during the exam. **You may not, however, collaborate with any other person on the exam, discuss exam questions, or save and upload any exam questions or answers to a website or other person.** If you are discovered to have done any of the above, you will receive a 0 on the exam and a record of the violation will be submitted. Students are also sometimes tempted to participate in some type of group chat during an exam, which is also a serious offense. Anyone found to be listed in a group chat where exam questions are discussed (even if you did not participate in the discussion) will receive a 0 on the exam.

Finally, an important note about plagiarism. In this course, you will be writing out answers to short-answer questions in both the Application assignments and on exams. **It is very important that you always answer all questions in your own words.** If you copy any amount of text from a website, textbook, Canvas page, other student, or any other source, you may receive a 0 on that assignment. All final drafts of Application assignments will be submitted through TurnItIn, which is a software that detects plagiarism. Again, while you are encouraged to collaborate with others on the Application assignments (and will be specifically asked to look at other students' submissions during the discussion process), you may not directly copy any part of another student's work.

Sanctions for academic integrity violations in this course may include all or just part of the following:

1. An F on a particular assignment or exam,
2. Letters describing the infraction being placed in a file kept by the Academic Integrity Committee in the Eberly College of Science (Note: all colleges at Penn State have an Academic Integrity Committee, and files are routinely requested from other colleges during an investigation),
3. Referral to the Office of Judicial Affairs,
4. An F or XF (disciplinary F grade) for the course.

Student Resources

There are many resources available to you to ensure that you can succeed! Penn State has services to support you academically, professionally, and psychologically. Learn more at this website.

World Campus Academic Advising

301 Outreach Building, University Park, PA 16803
800-252-3592

World Campus Academic Support

Tutoring, study groups, and other resources are available at their website.

Career Counseling Resources

Drop-in and scheduled appointments are available at University Park. You can also schedule virtual meetings, watch workshops, and access their other resources at their website. Contact them via e-mail at AskCS@psu.edu.

Technical Support

IT support can be found for Main Campus and World Campus.

Counseling and Psychological Services

The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

Counseling and Psychological Services at University Park (CAPS) 814-863-0395
Can Help Line (24 hours/7 days/week): 800-643-5432
Penn State Crisis Line (24 hours/7 days/week): 877-229-6400
Crisis Text Line (24 hours/7 days/week): Text LIONS to 741741

Confidentiality

According to Penn State Policy, instructors and teaching assistants of this course are mandatory reporters. Therefore, we cannot promise confidentiality. Confidential resources you can access on campus or in the area include:

Counseling Psychology Services "CAPS" (501 Student Health Center, 814-863-0395)
Gender Equity Center (204 Boucke, 814-863-2027)
Centre County Women's Resource Center (104 W. Nittany Ave., 877-234-5050)

Disability Accommodation Statement

Penn State welcomes students with disabilities into the University's educational programs. Every Penn State campus has an office for students with disabilities. Student Disability Resources (SDR) website provides contact information for every Penn State campus. For further information, please visit the Student Disability Resources website.

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: See documentation guidelines. If the documentation supports your request for reasonable accommodations, your campus disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early as possible. You must follow this process for every semester that you request accommodations.

Educational Equity/Report Bias

Consistent with University Policy AD29, students who believe they have experienced or observed a hate crime, an act of intolerance, discrimination, or harassment that occurs at Penn State are urged to report these incidents as outlined here. See more at reporting.psu.edu.

Syllabus and schedule are subject to change over the course of the semester - any changes will be communicated to the class in writing.

Updated 4/13/2021