

**BIO 313**  
**Human Anatomy & Physiology I**  
**Fall 2014; T/R, 9:25 – 10:40am**  
**301 Cox Science & Language**

**Professor:** Dr. Nicholas A. Pullen  
**Office Hours:** MTR (11am-12pm; 3:30-4:30pm); W (4-5pm); R (2:30-3:30pm); and by appointment  
**Office Location:** 205 Cox Science & Language  
**Office Telephone:** (573) 592-1143  
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**WWU Mission:** An independent voice in higher education, William Woods University distinguishes itself as a student-centered and professions-oriented university committed to the values of ethics, self-liberation, and lifelong education of students in the world community.



Thomas Eakins' "The Gross Clinic," 1875

**Course Description:** Students in this course will explore human anatomy and physiology through the lens of modern scientific literature. Cellular physiology and the structure and function of the nervous, endocrine, musculoskeletal, cardiovascular, and special sensory systems will be addressed. Emphasis will be placed on learning the normal functions of these by accurately assessing pathologies in real clinical case scenarios. Students will synthesize their understanding of the integration of these systems through a composition in the style of a modern scientific review with concomitant seminar. 2014-2015 Academic Catalog: <http://www.williamwoods.edu/catalogs/1415/undergraduate/index.aspx>

**Course Prerequisites:** Prior satisfactory completion of BIO 124/125, CHM 124/125, and MAT 118; enrollment in BIO 314 is co-requisite.

**Required Textbook/Materials:** Silverthorn, D. U. *Human physiology: an integrated approach* (6<sup>th</sup> ed.) Pearson, 2013. Bundled with MasteringA&P.

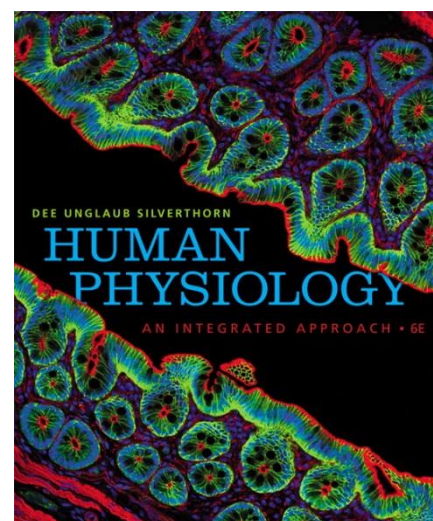
**NOTE:** This is also the text used for BIO 323 (Human Anatomy & Physiology II).

**Technology Use Expectations:** Messages via WWU email are official communication; students are responsible for regularly checking their WWU email accounts. Technology issues should be directed to UIT, (ext. 4224; [helpdesk@williamwoods.edu](mailto:helpdesk@williamwoods.edu)).

**Course Goals:**

With satisfactory completion of BIO 313, students will:

1. Demonstrate anatomical knowledge of the systems studied.
2. Integrate concepts of cellular physiology with function at higher levels (e.g. tissue and organ).
3. Develop comfort and skill with oral and written scientific communication.
4. Demonstrate effective use of modern scholarly research databases.
5. Develop skill thinking like a scientist: propose experimental techniques to address physiological questions and use A&P knowledge to diagnose pathologies.



**Degree/Major Objectives: BIO 313 addresses the following Biology Program objectives:**

1. Demonstrate knowledge of cell ultra-structure and basic cellular processes and develop an understanding of the requisites of life.
3. Contributes to an overview of the major organ systems of the human body and the normal and pathological functioning of those organ systems.
6. Demonstrate knowledge of scientific methodologies and usage of current scientific equipment and technologies.

**BIO 313 will also touch on these Biology Program Objectives but not address them directly:**

2. Converse with the basic tenets of transmission, molecular, developmental and population genetics.
4. Demonstrate knowledge of the diversity and taxonomy of organisms, and the significance of variation in morphology, behavior, and life history.
5. Explain the role that natural selection, genetic drift, and other phenomena have had on the production of biological diversity and the role evolution has in integrating explanations of both the unity and diversity of life.

**Assessment Procedures and Course Assignment Details:** Grades are earned through the completion of scheduled unit exams, quizzes, the writing of a scientific review, and a final exam.

Information addressing all of the above objectives is presented through assigned text & case readings, literature research, PowerPoint presentations, videos, in-class activities, and seminar-style discussions. Formative assessment of student achievement in all objectives is performed via class discussions, activities and quizzes. Summative assessment is performed with unit exams, a comprehensive final exam, and a research paper. Data pertaining to Biology Program Objective 3 is retained and utilized for B.A. and B.S. degree-wide assessment.

Unit Exams: Taken during scheduled course meeting times (see syllabus schedule). They will be comprehensive across units where necessary. Exams consist of multiple choice, modeling problems, short and long essays, and may cover assigned reading material not directly discussed in class meetings. Make-up exams are offered only in consideration of extraordinary circumstances. In the case of absence from an exam because of a University-sponsored activity, the student should arrange a time to take the exam beforehand.

Final Exam: A final **comprehensive** exam will be given Thursday, December 11, starting at 9:25AM. Make-up final exams cannot be arranged. Absence will result in a score of 0.

Quizzes: On most days a new topic is scheduled there will be a quiz. Approximately 50% of each quiz will cover assigned reading for that meeting (not yet discussed), and 50% will cover information from previously discussed topics. The point of these quizzes is to (1) encourage class to keep up-to-date on reading; and (2) assess any gaps that might exist from prior discussions. Quizzes are great “practice” for high-stakes exams, but quiz questions will never be duplicated in an exam. Make-up quizzes are not offered.

Paper: In pairs students will write a minimum 10-page paper (double-spaced, 12-pt. font max., 1” margins) in the style of a scientific review. The topic may be on any human disease or other physiological dysfunction but should be approved prior to writing. There is a required minimum of 15 modern peer-reviewed references (generally published within the last 10 years). Figures and references do not count toward length, but original figures are strongly encouraged for analytical support. Part of the final paper grade will include assessment of progress on drafts throughout the semester (refer to schedule for due dates). The final paper is due in hard-copy Thursday, December 4 by 9:25AM. A 10 minute presentation will also be delivered by both students working together Wednesday, December 3 as part of a lab LEAD seminar. Detailed rubrics will be distributed to guide preparation at each stage.

**Tutoring Information for all Students:**

- **Writing Center:** Kemper 216  
Contact Dr. Greg Smith for questions: [greg.smith@williamwoods.edu](mailto:greg.smith@williamwoods.edu)
- **Math Center:** Science and Language 313  
Contact Professor Raymond Hune for questions: [raymond.hune@williamwoods.edu](mailto:raymond.hune@williamwoods.edu)
- **Smarthinking** on-line tutoring for additional subjects. Additional information will be sent to student WWU email accounts.

**Grading Scale:**

- 600 points are distributed among the course assignments by the following scheme:

<b>Breakdown of Points</b>	
<i>Activity</i>	<i>Total Value</i>
Unit Exams (3)	300
Quizzes (10)	50
Paper	100
Final Exam	150
<b>Total Available for Semester</b>	<b>600</b>

- Final letter grades are based on the percentage of points achieved.
- Percentages from lecture and lab (BIO314) will be combined into one final grade.
- BIO 313 is weighted as  $\frac{3}{4}$  of the final grade and BIO 314 as  $\frac{1}{4}$ .
- Passing scores must be received in both BIO 313 and BIO 314 to pass the course.

<b>Letter Grade Ranges</b>	
<i>%Points Earned</i>	<i>Letter</i>
<60%	F
≥60%, <70%	D
≥70%, <80%	C
≥80%, <90%	B
≥90%	A

**Policy on Late Work:** Work not submitted on time incurs an immediate 20% penalty and accrues an additional 20% penalty every day late (including weekends) until 0.

**Attendance Policy:** Attendance at every class meeting is expected. Excused absences include official university business and illness with legitimate documentation.

**Class Conduct and Participation Expectations:** Students are expected to work hard, ask questions, and discuss relevant information. Much learning is borne out of open-ended discussions on anatomy & physiology, therefore students are expected to be prepared for group work and impromptu discussion with other class participants. All participants are expected to be respectful of others.

**ADA Guidelines:**

Students who choose to disclose a disability are responsible for notifying the University of their disability on a timely basis. Questions about disability services should be directed to the University's coordinator for disability services. Contact information is (573) 592-1194 or [ada@williamwoods.edu](mailto:ada@williamwoods.edu). The office is on the first floor of the Academic Building.

**Academic Integrity Policy :**

William Woods University, founded on the principle of honesty, has long endeavored to maintain an atmosphere of academic integrity. In all academic work, it is important that the ideas and contributions of others be appropriately acknowledged, and that work that is presented as original is, in fact, original. Insuring the honesty and fairness of the intellectual environment at William Woods University is a responsibility that is shared by the entire campus community. Details of the Academic Integrity Policy can be found at the following web address:

[http://www.williamwoods.edu/catalogs/1415/undergraduate/policy\\_detail.aspx?Policies\\_id=51](http://www.williamwoods.edu/catalogs/1415/undergraduate/policy_detail.aspx?Policies_id=51)

**Student Outcomes Assessment Policy:**

[http://www.williamwoods.edu/catalogs/1415/undergraduate/policy\\_detail.aspx?Policies\\_id=30](http://www.williamwoods.edu/catalogs/1415/undergraduate/policy_detail.aspx?Policies_id=30)

**Additional Academic Policies can be found at:**

2014-2015 Academic Catalog:

<http://www.williamwoods.edu/catalogs/1415/undergraduate/index.aspx>

**Academic Credit Hour Definition:** The University has adopted the following United States Department of Education definition of a credit hour:

*A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:*

- (1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time.*

**Expected Outside Time Commitment:** Following the US DOE definition, students should expect to spend a minimum of 90h outside time for BIO 313 since it is similar in time structure to a 3-credit course. Estimated time is given by activity in the course schedule table (next page) with a sum estimate of 91.5h outside time for this course.

**Add/Drop Deadlines:**

Last day to add a class - August 29<sup>th</sup>, 4:30 PM.

Last day to drop a class during refund period - September 22<sup>nd</sup>, 4:30 PM

Last day to drop a class or withdraw from the university - October 31<sup>st</sup>, 4:30 PM

## Tentative Course Schedule

Exams dates will not change, unless required by University circumstance(s)

Quiz dates are tentative and may change with the pace of content coverage.

Reading numbers correspond to Silverthorn chapters.

Dates	Topic	Reading (time required)	
26, 28 Aug	Intro & Expectations; Molecular Interactions	1 (2.5h), 2 (2.5h)	Quiz (0.5h)
2, 4 Sep	Mol. Cont'; Compartmentation	2, 3 (2.5h)	Quiz (0.5h)
9, 11 Sept	Metabolism; Signaling; Homeostasis	4 (2.5h), 6 (pp.174-177; pp. 192-200; 1h)	Quiz (0.5h)
16, 18 Sept	Intro to Neurons	8 (pp.237-247; pp. 266-269; 1.5h)	Topic with Justification and $\geq 2$ refs. (3h); <b>Exam 1 (8h), 18 Sept</b>
23, 25 Sept	Neurons cont'd; CNS	8 (above), 9 (3h)	Quiz (0.5h)
30 Sept., 2 Oct	The Senses	10 (3.5h)	Quiz (0.5h)
7, 9 Oct	Senses cont'd	10	
14, 16 Oct	Efferents	11 (2.5h)	Outline with draft intro and $\geq 7$ refs. (5h); <b>Exam 2 (8h), 16 Oct</b>
21, 23 Oct	Efferents Cont'd; Skeleton/Bone	11, 23 (pp. 790-797; 1h)	Quiz (0.5h)
28, 30 Oct	Skeleton cont'd; Muscle	12 (3h)	Quiz (0.5h)
4, 6 Nov	Integration: movement	13 (2h)	Quiz (0.5h)
11, 13 Nov	Intro to Endocrine	7 (2.5h)	Near complete draft and $\geq 12$ refs (8h); <b>Exam 3 (8h), 13 Nov</b>
18, 20 Nov	Endocrine cont'd	7	Quiz (0.5h)
25 Nov	Intro to Cardiovascular; <b>No Class Nov. 27<sup>th</sup></b>	14 (2.5h)	Quiz (0.5h)
2, 4 Dec	Cardiovascular & Wrap-up	14	<b>Final Papers (6h) Due 4 Dec</b>
11 Dec	<b>Thursday 9:25AM</b>	<b>Comprehensive</b>	<b>FINAL EXAM (8h)</b>