**KIN 207**

**Systems Physiology**

**Block 7 Spring 2019**

Instructor: Justus Hallam PhD

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Office: 312 Law Hall

Office Hours: Mon-Fri afternoons or by appointment (I prefer if you just let me know when you want to come in and I will be there)

Class Time: 9:00am-12:00pm and some afternoons 1-3pm

Class Location: Russell Science Center 121

**Course Description: KIN 207 Systems Physiology** provides a fundamental survey of the complementarity of human anatomical structure and physiological function of the integumentary, nervous, muscular, endocrine, cardiovascular, respiratory, and renal systems. Special emphasis will be given to the development of a mechanistic understanding of organ system function and integrated physiological function across systems to promote homeostatic regulation in the human body. This course also provides experiential learning through laboratory activities.

**Prerequisite**: sophomore standing. (Laboratory Science Requirement)

**Course Objectives:**

* To increase understanding of the relationships between human anatomical structure and physiological function from the cellular to the systemic level, focusing on study of the integumentary, muscular, nervous, endocrine, cardiovascular, respiratory, and urinary organ systems *(well-being, knowledge)*
* To apply basic anatomical and physiological concepts within a critical thinking framework to explain homeostatic regulatory mechanisms (acid-base balance, thermoregulation, blood pressure, maintenance of blood gases, and others) that operate within humans *(inquiry, knowledge, well-being)*
* To provide an understanding of human physiology and homeostasis required to participate in advanced study of exercise science *(knowledge, vocation)*
* To gain a fundamental understanding of the scientific method through experiential learning activities, including the development of research questions and rationales, data acquisition, analysis of results, and interpretation of physiological observations (*reasoning, inquiry, communication)*
* This course supports the Educational Priorities and Outcomes of Cornell College with emphasis on knowledge, well-being, inquiry, and reasoning, vocation and communication.

**Instructional Methods/Course Structure:** Classes will include a combination of lectures, discussion & laboratory sessions. Reading assignments and presentations will be required. All topics covered may be on the exams and students are highly encouraged to take notes.

**Required Reading/Textbooks:**

Elaine N. Marieb & Katja Hoehn, *Human Anatomy & Physiology* (9th ed.), Pearson Benjamin Cummings. ISBN: 978-0-321-69651-9 (includes masteringa&p.com website access code)

**Grading Breakdown:**

*This is a tentative grade break down and could change throughout the block*

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| --- | --- |
| **Exams (3)** | **185 pts ( 2-75 pts each and 1-35pts)** |
| **Labs (4)** | **80 pts (20pts each)** |
| **Quizzes** | **100 pts** |
| **Assignments** | **40 pts** |
| **Attendance/Participation** | **10 pts** |

**Grade Scale:**

A = 94-100% C+ = 77-79.99%

A- = 90-93.99% C = 74-76.99%

B+ = 87-89.99% C- = 70-73.99%

B = 84-86.99% D+ = 67-69.99%

B- = 80-83.99% D = 60-66.99%

F = 59.99% and below

* Exams: There will be 3 written exams. One exam will be shorter and worth ~35pts. There will be two longer written exams worth ~75 points and will include multiple choice, true/ false, and short answer questions. Make up exams will not be given except under extreme, extenuating circumstances and must be previously approved and arranged with Dr. Hallam.
* Assignments: There will be some in-class exercises and homework assignments throughout the block.
  + There is one specific 20pt block long assignment, which is due the last day of class. Specific details about this assignment are found on moodle.
* There will be 4 Labs during the block, each worth 20pts. The lab portion will be done in class with subsequent write ups to be done outside of class.
* Quizzes**:** We will have approximately 12 quizzes at the start of lecture during the block. We may also have random extra quizzes at random times during the block. If you are late to class and miss the quiz, you CANNOT make it up. If you are not IN class your quiz does not count. Each of these will be worth 10pts. I will take your best 10 scores on quizzes to give you a final grade out of 100. The quizzes with take place on an app called Socrative. We will discuss this more in depth in class.
* Attendance: Students are not required to come to class, but you will be given a grade for attendance and participation at the end of the block. I do expect you to be on time for class so as not to disrupt others.

**Exams:** There will be 2 large exams during the course of the block and 1 shorter exam. Exams will include information from the book, course lectures, activities, and assignments. I will make most PowerPoint lectures available online, however these slides are only an outline and students should add their own notes to supplement that material. Exams will take place during normal class time. Arriving late to an exam is the equivalent of not showing up for the exam. Students are expected to be on time to take their exams, coming late distracts others trying to take the exam. Students who miss an exam without a valid excuse can take the exam for half credit, as long as they take it within one week. Make up exams will be given to students who have valid excuses for missing the exam and talk to me beforehand. Make up exams will cover similar material but will be different than exams given during class time. All make up exams must be taken within one week of the original exam date. If you have questions about the exam it is in your best interest to contact Dr. Hallam well in advance instead of waiting to ask questions right before an exam.

In order to receive a passing grade in this class, you must receive an average of at least 55% on your 2 exams. Failure to do so will result in a failing grade for the class.

**Assignments:** All written assignments are due through email to Dr. Hallam before class on the day they are due. All written assignments need to be typed in 12pt font, 1.5” spacing, with 1” margins, unless otherwise noted. The assignment should include your name and the date. Anything that is NOT in this format or late will receive an automatic zero. All work should be properly cited; this includes text or images that are taken from outside sources. Plagiarism will not be tolerated in any circumstance.

**Late Assignments:** Assignments turned in after the due date and time, will not be accepted without prior approval. In the event a student has approval to submit late coursework, a 50% per day grade reduction will be imposed. The late penalty is waived for excused absences.

**Moodle:** Moodle will be used as a course management tool. You are responsible for checking this site on a regular basis. Course notes will be available on Moodle. I would recommend checking Moodle prior to class to make sure you have the most up to date course notes and announcements.

**Withdrawal from the Course:** According to Cornell College guidelines, students may withdrawal from this course on the 15th day of the block assuming that they meet specific criteria as listed in the Course Catalogue. This option is available for the student who has made a *good faith effort* to perform well in class, as demonstrated by consistent attendance and participation in course activities and completion of all assignments.

**Accommodations for students with documented disabilities:**

Cornell College is committed to providing equal educational opportunities to all students. Students who need accommodations for learning disabilities must provide documentation from a professional qualified to diagnose learning disabilities. For more information see cornellcollege.edu/disabilities/documentation/index.shtml. Students requesting services may schedule a meeting with the disabilities services coordinator as early as possible to discuss their needs and develop an individualized accommodation plan. Ideally, this meeting would take place well before the start of classes. At the beginning of each course, the student must notify the instructor within the first three days of the term of any accommodations needed for the duration of the course.

Contact: Brooke Paulson (319) 895-4382 bpaulsen@cornellcollege.edu

**Academic Honesty Statement:**

Cornell College expects all members of the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, or data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgment of sources, whether intended or not, this may constitute a violation of the College's requirement for honesty in academic work and may be treated as a case of academic dishonesty. The procedures regarding how the College deals with cases of academic dishonesty appear in The Compass, our student handbook, under the heading "Academic Policies – Honesty in Academic Work."

<http://www.cornellcollege.edu/student-affairs/compass/academic-policies/honesty-in-academic-work.shtml>

Cheating refers to the use of unauthorized sources of information on examinations or any attempt by students to deceive the evaluator of an examination, paper, or project.

Plagiarism is the act of taking the work of another and presenting it as one's own, without acknowledgement of the original source.

**Any student caught plagiarizing will automatically fail that assignment and further action may be taken.**

**Any student caught cheating will automatically fail the class.**

**Tentative Class Schedule**

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| **Date** | **Morning Session 9:00am-12:00 pm** | **Afternoon Session 1:00-3:00 pm** | **Assignment Due Dates:** |
| Mon  Mar 18 | Course Introduction  Orientation to the Human Body & Homeostasis (Ch 1:1-11)  ***Review*** Atoms, Molecules, Cells, & Tissues (Ch 2, Ch 3:61-96, skim Ch 4) |  |  |
| Tues  Mar 19 | ***Review*** Atoms, Molecules, Cells, & Tissues |  | ***MAP: Intro and Ch 1*** |
| Wed  Mar 20 | **Integumentary System** (Ch 5) |  | **MAP: Ch 2,3, 4** |
| Thurs  Mar 21 | ***Short Exam (Ch 1-5)***  **Nervous System**: Organization & Neuron Structure Resting Membrane Potential, Action Potentials, & Synapses, (Ch 11:386-414) | **Case Study 1**  **Nervous System**: Overview of the Central Nervous System (Ch 12:429-451, 462-477) | **MAP: 5** |
| Fri  Mar 22 | **Nervous System**: Peripheral Nervous System (Ch 13: 435-492, 501-503)  Autonomic Nervous System (Ch 14)  **Case Study 2** |  | ***MAP: Ch 11,12*** |
| Mon  Mar 25 | **Muscular System**: Skeletal Muscular Tissue Structure (Ch 9:276-285) |  | **MAP; Ch 13,14** |
| Tue  Mar 26 | **Muscular System**: Contraction of Skeletal & Smooth Muscle (Ch 9: 284-296, 298-302, 305-311), Spinal Reflexes (Ch. 13: 513-519) | **Case Study 3**  **Endocrine System** (Ch 16: 592-598, primarily)  Blood Glucose Homeostasis, Ca+2 Regulation | **MAP: Ch 16** |
| Wed  Mar 27 | **LAB 1 – Neuromuscular Function** |  | ***MAP: Ch 9*** |
| Thurs  Mar 28 | **Endocrine System** | **Optional Midterm Review** |  |
| Fri  Mar 29 | ***MID-TERM EXAM***  (Muscular, Nervous, & Endocrine Systems) |  | ***Lab 1*** |
| Mon  Apr 1 | **Cardiovascular System**: Blood (Ch 17: 634-649)  **Case Study 4** |  | **MAP: Ch 17** |
| Tues  Apr 2 | **Cardiovascular System**: Heart (Ch 18) | **Cardiovascular System**: Blood Vessels & Blood Pressure (Ch 19:698-711)  **Heart Dissection** | **MAP: Ch 18**  **MAP: Ch 19** |
| Wed  Apr 3 | **LAB 2 – BP EKG** |  |  |
| Thurs  Apr 4 | **Respiratory System**: Ventilation (Ch 22:802-824)  **Respiratory System**: Gas Exchange & Transport (Ch 22:824-841)  **Case Study 6:** I can’t stop coughing | **LAB 3 – Respiratory Function** | **MAP: Ch 22** |
| Fri  Apr 5 | **Renal System**: The Nephron (Ch 25:958-982)  **Case Study 7** |  | ***MAP: Ch 25***  **Lab 2** |
| Mon  Apr 8 | **LAB 4 – Renal Function\*** | **Renal System**: Fluid & Electrolyte Balance (Ch 26)  **Case Study 8:** Car Accident | **MAP: Ch 26**  **Lab 3** |
| Tuesday  Apr 9 | Renal dissection |  |  |
| Wed  Apr 10 | ***FINAL EXAM***  (Cardiovascular, Respiratory, & Renal Systems) |  | **Lab 4**  **Photo Assignment** |