

## Biology 590- Fall 2009 Course Information

### Introduction

Bio 590 - Physiology of Human Systems – is team taught by  
Dr. Karin Norgard-Sumnicht, (South) LS 346, 594-2396,

[knorgard@sciences.sdsu.edu](mailto:knorgard@sciences.sdsu.edu) &

Dr. Greg Harris, (North) LS 311, 594-5655, [gharris@sciences.sdsu.edu](mailto:gharris@sciences.sdsu.edu)

Office Hours: TBA

This course is intended for students majoring in natural sciences or pre-professional studies.

### Prerequisites

Chem 365, Physics 180B, 182B; or for the bioengineering emphasis: Physics 195, 196, 197. Recommended: Biol 366.

### Learning Objectives for Bio 590

This course is designed for students who have **already had previous course work in biochemistry, cell biology and molecular biology**. The pace of this course will be brisk so, **be sure to keep up with the assigned reading**. The assigned text is required, as is the assigned reading. The lectures are based heavily upon the assigned text, but also include significant amounts of material that are described in more detail than in the text.

Accordingly, you cannot rely on the text only to perform your best in this course. During the semester we will discuss most, but not all organs and systems. The topics for human physiology will be presented at both cellular and organ system levels. These topics include: cell signaling and endocrinology, neurophysiology, muscle physiology, cardiovascular physiology and flow dynamics, digestion, respiration & renal function.

Since this is a human physiology course, most examples will be related to human physiology in health and disease. Moreover, since a clear understanding of human physiology involves the cellular and molecular basis of organ function, we strongly recommend that you have a firm knowledge of fundamental biochemistry, cell and molecular biology.

### Grading

Your grade in this course will be determined by your score on **6 exams** that will be given throughout the semester. Together, the exams amount to a **maximum of 600 points**. Since we will grade on a curve, your final letter grade in the course will be assigned only after all the exams have been administered.

### Required Text

“Human Physiology: An Integrated Approach” by Silverthorn, 5<sup>th</sup> ed.

### Keys to Success in this Class

1. Attend class regularly and be on time.
2. **Read** the section of the text relevant to the class material **IN ADVANCE** of the class meeting.
3. **Read** the power point material relevant to the class material **IN ADVANCE** of the class meeting.
4. After each class session and before the next session, **study/review** what was covered in class AND review and correlate it with the relevant chapter(s) in the text.
5. Form or join a **study group** to help you better understand the material and prepare for the quizzes.

### Class Policies

1. Unless otherwise instructed, turn off cell phones and other devices that can access the internet while you are in class.
2. No text-messaging or other form of e-communication will be allowed during class.
3. Come to class on-time; it is very disruptive and disrespectful to the instructors and the other students when you come to class late.
4. You are expected to attend EVERY class session; we make it a point to get to know all of you early on in the semester, since we conduct a very interactive class. Accordingly, your absence will be noticed. Moreover, you will get the most out of this class if you attend every session.
5. You must notify Dr. Norgard-Sumnicht (Dr. No) or Dr. Harris at least 1 week before an exam if you must be absent. You must have a valid excuse and written documentation for the excuse in order to qualify for a make-up exam. The nature of the make-up exam is variable, but most likely it will be an oral exam and must be completed before the next class session.
6. We have a zero-tolerance policy about cheating on exams. Cheating means getting exam answers from an external source, including people in or outside of class, including via classical cheating methods (i.e. roaming eyes), or via state-of-the-art cheating methods (e.g. e-messages).
7. If you are caught cheating, your exam will be confiscated, you will be given a 0 on it, and you will be reported to the department and to student affairs for appropriate action.

Biology 590 Physiology of Human Systems (Fall 2009)

Date	Day	Week	Lec	Topic	Chapters*	Instructor(s)
------	-----	------	-----	-------	-----------	---------------

Sep 1	Tu	1	1	Introduction to Physiology/ Basic Concepts	1-3	Norgard-Sumnicht
Sep 2	Th	1	2	Energy & Cell Metabolism	3-4	Norgard-Sumnicht
Sep 8	Tu	2	3	Membrane Dynamics	5	Norgard-Sumnicht
Sep 10	Th	2	4	Cell Signaling	<a href="#">6Ritter%20Neyes%202003%20Review.pdf</a>	Norgard-Sumnicht
Sep 15	Tu	3	5	Introduction to the Endocrine System	<a href="#">7Ritter%20Neyes%202003%20Review.pdf</a>	Norgard-Sumnicht
<b>Sep 17</b>	<b>Th</b>	<b>3</b>		<b>Exam 1 (Introduction, Signaling and Endocrine) 100 pts</b>	<b>1-7</b>	Norgard-Sumnicht
Sep 22	Tu	4	6	Nervous System- Physiology of Neurons I	8	Harris
Sep 24	Th	4	7	Nervous System- Physiology of Neurons II	8	Harris
Sep 29	Tu	5	8	Nervous System- CNS	9	Harris
Oct 1	Th	5	9	Nervous System- Sensory	10	Harris
Oct 6	Tu	6	10	Nervous System- Autonomic	11	Harris
<b>Oct 8</b>	<b>Th</b>	<b>6</b>		<b>Exam 2 (Nervous) 100 pts</b>	<b>8-11</b>	Harris
Oct 13	Tu	7	11	Muscles I	12	Harris
Oct 15	Th	7	12	Muscles II	13	Harris
Oct 20	Tu	8	13	Control of Body Movement- <i>Integrated Physiology I</i>	13	Harris
<b>Oct 22</b>	<b>Th</b>	<b>8</b>		<b>Exam 3 (Muscle) 100 pts</b>	<b>12-13</b>	Harris
Oct 27	Tu	9	14	Cardiovascular Physiology	14	Norgard-Sumnicht
Oct 29	Th	9	15	Cardiovascular Physiology	14	Norgard-Sumnicht
Nov 3	Tu	10	16	Blood Flow and Control of Blood Pressure	15	Norgard-Sumnicht
Nov 5	Th	10	17	Blood Flow and Control of Blood Pressure	15	Norgard-Sumnicht
<b>Nov 10</b>	<b>Tu</b>	<b>11</b>		<b>Exam 4 (Cardiovascular) 100 pts</b>	<b>14-15</b>	Norgard-Sumnicht

Nov 12	Th	11	18	Digestion	21	Norgard-Sumnicht
Nov 17	Tu	12	19	Metabolism and Energy Balance	22	Norgard-Sumnicht
Nov 19	Th	12	20	Endocrine Control of Growth and Metabolism	23	Norgard-Sumnicht
<b>Nov. 24</b>	<b>Tu</b>	<b>13</b>	<b>Exam 5 (Digestion, Metabolism, Endocrine) 100 pts</b>		<b>21-23</b>	Norgard-Sumnicht
<b>Nov 26-27</b>	<b>Th</b>	<b>13</b>	<b>Thanksgiving Break- No Class</b>			
Dec 1	Tu	14	21	Mechanics of Breathing	17	Norgard-Sumnicht
Dec 3	Th	14	22	Gas Exchange and Transport	18	Norgard-Sumnicht
Dec 8	Tu	15	23	The Kidneys	19	Norgard-Sumnicht
Dec. 10	Th	15	24	Fluid and Electrolyte Balance- <i>Integrated Physiology II</i>	20	Norgard-Sumnicht
<b>Dec 15</b>	<b>Tu</b>	<b>1:00-3:00pm</b>	<b>Exam 6 (Final) (Respiration – Respiration/Renal) 100 pts</b>		<b>17-20</b>	Norgard-Sumnicht

\*The textbook for Fall 2009 is “Human Physiology: An Integrated Approach” by Silverthorn, 5th edition.