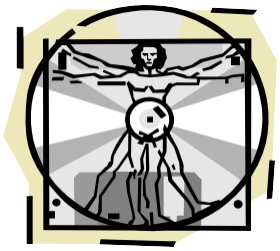
Bio 202 -- Human Anatomy & Physiology 2 (lecture)
National University, Jan/Feb 2020



Course Syllabus

Instructor

Mr. Todd Kennedy
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Textbooks

Principles of Anatomy and Physiology by Gerald Tortora; Brain Derrickson.
Current edition as specified in NU bookstore

[Class ID:

Course philosophy

Two academic principles underlie this course. The first is that reasonably high, but realistic, standards are set for the students. This is based on the idea that students get the most out of a course when they are encouraged to work hard. Second, this course represents an informal contract between the teacher and student, where each expects honest effort from the other. As the teacher, I pledge to put my best effort into explaining the course material and helping each student understand the concepts. I assume reciprocal effort by each student -- namely, that each student will work his or her hardest to learn the course material.

COURSE GOALS AND OBJECTIVES:

The primary objective of this course is to introduce the student to the structure and function of the human body and its relationship to the environment. Upon successful completion of the course, the student will be able to:

1. To understand science as a process, including the scientific method and hypothesis testing, and the importance of observation.
   2. To describe mechanisms of signal transduction by the endocrine system.
   3. To describe the physiology of the cardiovascular system, including pressure/volume relationships in the heart, as well as cardiac output, blood flow, and blood pressure physiology.
   4. To understand the defense system of the Human Body.
   5. To describe the physiology of the respiratory system, including gas laws as they pertain to lung ventilation and diffusion between the air and the blood.
   6. To understand the functions of blood components and their composition, also the value of human blood groups.
   7. To understand the physiology of the renal system, including secretion, reabsorption, filtration, and excretion.
   8. To describe the anatomy and physiology of the male and female reproductive

system, including embryonic development.
9. To understand the importance of mitosis and meiosis.
10. To recognize and correctly identify anatomical structures that were taught.
11. To understand the mechanisms involved in homeostasis.
12. To understand how and why we age.

"National University is committed to providing equitable access to learning opportunities for all students. Student Accessibility Services (SAS) is the office that collaborates with students who have disabilities and faculty members to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact SAS atsas@nu.edu or 858.521.3967 to arrange a confidential discussion regarding equitable access and reasonable accommodations. To receive any course-related adaptation or accommodation, the student must first be registered with SAS; registration information and steps can be found by visiting www.nu.edu/sas. The SAS team works with students confidentially and does not disclose disability-related information without his/her permission.

If you are already registered with SAS and have a current accommodation letter outlining approved accommodations, we encourage you to contact your instructor early in the term, by the first class session preferably, to review how the accommodations will be applied in the course. You are encouraged to arrange a confidential phone or in person meeting with your professor to discuss the approved accommodations."

Assignments and grading (point totals are approximate)

Weekly quiz	150 points (25-30pts per assignment)
Oral presentation	60 points
Research paper	70 points
Midterm	200 points
Final (non-cumulative)	200 points
TOTAL	680 points

National University's +/- system is used:

A	95 - 100 %	C+	77 - 79 %	D-	60 - 63 %
A-	90 - 94 %	C	74 - 76 %	F	0 - 59 %
B+	87 - 89 %	C-	70 - 73 %		
B	84 - 86 %	D+	67 - 69 %		
B-	80 - 83 %	D	64 - 66 %		

Class schedule -- ALL CLASS MEETINGS ARE Monday

Date	Lecture	Chapter	In-class activity
Jan 6	The Endocrine System	Chap. 18	
	CV:Blood	Chap. 19	
Jan 11 Sat	CV: Heart CV: Vessel	Chap. 20 Chap. 21	
Jan 13	Lymphatic System Immune System	Chap. 22	
Jan 25 review Jan 27	Respiratory System	Chap. 23	*Students will take a brief quiz based on the previous class
	Digestive System	Chap. 24	each night.
	MIDTERM		
Feb. 3	Nutrition, Metabolism… The Urinary System	Chap. 25 Chap. 26	Work on presentations
Feb 8 review			
Feb. 10	Fluid, electrolyte, and acid/base Repro. sys	Chap. 27 Chap. 28	Oral presentations
Feb. 22 Sat	Development and Heredity.	Chap. 29	Oral presentations
Feb 24	**FINAL (non-cumulative):** **DUE: Research paper**.		Oral presentations

Other issues

1. Students are expected to attend all class sessions. Two or more absences may result in removal from the class. Late arrivals after the first break period are recorded as absences.
2. Reminder: if you miss three or more class meetings and do not withdraw from the course before the 7th class meeting, then the Registrar will assign a grade of F. **It is the student's responsibility, not the instructor's, to officially withdraw from a course.** See "Attendance Procedures" the General Catalog.
3. Switch cell phones to silent mode during class and put them away.
4. Make up policy: the simplest solution is to do all work on time. Health, family, or work emergencies may earn extra time for the writing assignments. Otherwise, 5% of the earned grade will be deducted for every calendar day that the assignment is late. Students are encouraged to email late work to me (tmkennedy8@gmail.com) in order minimize the late penalty.
5. In the absence of an extreme emergency, a missed exam counts as a zero.
6. For written assignments, my two best pieces of advice are:
    * Take pride in your work. All written work is to be done on typed or computer-printed sheets. Make an outline of your ideas, and use your writing to bridge the gaps. Give yourself more than the night before the due date.
    * **Do not plagiarize!** Instructors are pretty good at sniffing out suspected cases of plagiarism. In National University's 2004 General Catalog, the topic "Academic Dishonesty" is discussed on p. 49. It reads: "Plagiarism is the presentation of someone else's ideas or work as one's own. As such, plagiarism constitutes fraud or theft. Plagiarism or academic dishonesty in any form is a grave offense and will not

be tolerated." Plagiarized assignments receive zero (0) points. Furthermore, as per the Catalog (p. 49): "It is the instructor's responsibility to report any *reasonable suspicion* of plagiarism to the Judical Affairs Officer so that such behavior may be monitored and repeat offenders identified [italics added]."

Oral presentations

Description

* Teams of 2 students are to prepare oral presentations on one of the topics below.
* Each presentation is to be at least 10 minutes, but no more than 20 minutes. One student may not do all of the talking for the team.
* The presentations will occur on _____ (~3 teams will present on each of these dates depending on class size. Students who have not signed up for a day will be assigned one by the midterm).
* Each presentation is worth **60 points**, broken down as so:
    * Information covered (30 points)
    * References (10 points): clearly identify at least three sources used for information. Websites are acceptable, but they are to be scholarly or those of established medical journals/institutions.
    * At least two visual aids (10 points)
    * Organization and clarity of presentation (10 points)
* A **5-point penalty** will be assigned to teams that go beyond 20 minutes. This is to emphasize the lesson of clearly and concisely presenting a topic.
* Presentations do not have to be high-tech or Powerpoint. Bringing in posters, book illustrations, or referring to pages in *Goode's word atlas* is sufficient.

Topics

1. Review the current status of stem cell research. Explain what it is, and its possible benefits. Review moral, ethical, and legal concerns regarding this research.
2. Review the current status of cloning research. Review advances that have been made in non-human animals, the feasibility of this research for humans, and moral concerns.
3. Give the medical definition of "stress", including organs and hormones involved in short-term and long-term responses. Present at least three studies that examine the effects of stress on reproduction and/or the immune system in mammals.
4. Present the role of blood and intravenous drug use in the transmission AIDS. Present data or information on the spread of AIDS in the US and worldwide.
5. Present the effects of the following on heart function/activity: exercise diet, smoking, stimulant drugs (e.g., amphetamines). Be sure to include which tissues of the heart are affecting by each of these factors.
6. Review the general issues surrounding peripheral nervous system disorders. Include the general biology behind the causes of at least four specific disorders as well as diagnosis and treatment options for these disorders.
7. Give the medical definition of “pain”; include in your description a discussion on how both perceptual and emotional experiences trigger autonomic, psychological, and somatic nerve responses. Use examples to discuss referred pain, phantom pain, chronic pain, and sensitization.
8. Review the current status of research on Dyskinesias. Explain what they are and give examples. For each example discuss the biology behind the disorder, diagnosis and treatments, if any.

9. Review the general issues surrounding eating disorders. Include the general biology relating to at least two common eating disorders and discuss the impact of these disorders on the physiology of the human body.
10. Describe genetic disease in general and give multiple examples of different types. Next choose at least two related genetic disorders (by cause) and describe the cause in more detail. Then describe the impact the disease has on the body focusing on both the anatomical changes as well as physiological changes that result from the disease. Finish with treatment options for symptoms and current research.

*I am open to other topics of your own choosing, please check with me first.

Research paper

Description

A 2000 to 2500-word term paper will be written by each student independently. The paper is worth **70 points** and is due at the beginning of class. Ten (10) points will be deducted from assignments that are handed in after the beginning of class.

Topics:

1. Review the status of artificial hearts. Identify advances over the past 20 years. Discuss the impact a failing heart may have on the physiology of the circulatory system and the body as a whole
2. Research the various eye disorders. Describe several (5-8) with examples. Include in your descriptions the biology behind the disorders, diagnosis and treatment options.
3. Discuss the cause, treatment, and prevention of the many intestinal disorders discussed by your book. Describe the impact of an intestinal disorder on your over all health and physiology.
4. Describe the Atkins diet. Summarize its putative benefits. Present at least two studies that have examined its effects on weight loss and other measures of health. What impact will a diet of this type have on your physiology?
5. Discuss the physiological circumstances under which kidney stones are formed, why do they form, and how they can be treated. Be sure to include a discussion on osmoregulation and diuretics as related to kidney disease.
6. Explain how the energy from our food gets into a blood clot. Discuss the process of blood clot formation (intrinsic and extrinsic). Include the cell types involved, enzymes and/or the proteins that play an important role. Explain how clots are prevented from forming when we don't want them too. (I expect allot for this one and will therefore award bonus points to those who complete it adequately)
7. Discuss the issues around reproductive health. Include in your discussion normal organ functions as well as disorders ranging from normal infertility to STD's. Illustrate each disorder by explaining the general biology behind it from both the anatomical and physiological stand point, diagnosis and treatment options.
8. Discuss the causes both intrinsic and extrinsic, treatments and biology behind asthma. Be sure to include its effect on other body systems and our physiology.
9. Discuss the human genome project. What is its, how was it accomplished, and what has it given us in terms of medical and/ or scientific advancements if any. (Be sure to discuss the genomic map)
10. Discuss genetic disorders that cannot necessarily be diagnosed enutero. Explain why they cannot be diagnosed in the womb as well as their general biology, symptoms and treatment options

Report format

* General: clean, stapled, typed or computer-printed pages. Student's name and paper's title appear on a cover sheet or as a header on the first page.
* Points for the paper are broken down as follows:
    * 50 points: coverage of information.
    * 10 points: quality of references and proper citation of references within text (see below).
    * 10 points: general style and organization of paper.
* References: students are to use scholarly sources (e.g., journal articles, authoritative books) for their reports. **You are to include at least four references; no more than 25% of your references can be Internet pages.**
* Use the APA format for references. Examples of this are given in *The Little, Brown Essential Handbook for Writers* by J.E. Aaron (2003), 4th edition.