

## **ANATOMY AND PHYSIOLOGY II – BIOL 2302**

*Instructor:* Dr Crystal Kelehear Graham, Assistant Professor

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*Office Hours:* Virtual (by appointment)

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Lecture: Online. Twice Weekly. Pre-recorded lectures posted to Blackboard on Tuesday and Thursday.

Required Text: Krieger 2017. Visual Analogy Guide to Human Anatomy & Physiology, 3<sup>rd</sup> Edition. Morton Publishing. *Note:* This text is required for A&PI, A&PII, and the accompanying labs so you will get a lot of use out of it and it is an excellent study aid.

Additional Recommended Text: Saladin 2018. Anatomy & Physiology: The Unity of Form and Function, 8<sup>th</sup> Edition. Mc-Graw-Hill Education.

Course description: The purpose of this course is to introduce students to the importance of the human body and its organ systems. This course is designed as the second semester of a two-semester course, and will cover internal organ systems, including cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary. Students should come away with an understanding of the above systems, how they are anatomically structured, and how that structure aids in each system's functionality.

### Marketable Skills (MS):

The biology student graduating with a BS in Biology should have the following MS's:

- 1) \*Ability to organize, analyze, and interpret data.
- 2) Proficiency in using presentation software.
- 3) \*Experience in managing time and meeting deadlines.
- 4) \*Ability to speak effectively and write concisely about scientific topics.
- 5) \*Experience in the development of professional email correspondence.

\*MS's specifically addressed by this course

### Student Learning Outcomes (SLO):

The biology student graduating with a BS in Biology should be able to:

*SLO1* \* demonstrate an understanding of basic biological concepts, including but not limited to evolution via natural selection, cell theory, and the role and function of DNA.

*SLO2* demonstrate utilization of various field techniques toward addressing scientific questions in the specific discipline. These field techniques can include, but are not limited to, plant collection and processing, various animal collection techniques, ecological surveying and sampling, and biodiversity indexing.

*SLO3* use biological instrumentation to solve biological problems using standard observational strategies.

*SLO4* \* develop writing skills by summarizing and critiquing recent relevant biological literature.

\*SLO specifically addressed by this course

Student Learning Objectives for this Course:

- 1) Students will illustrate knowledge of internal organ systems.
- 2) Students will diagram the location of the internal organs and blood flow.
- 3) Students will define the physiological responses to different chemical situations.
- 4) Students will demonstrate an understanding of the mechanics of ion movement.
- 5) Students will apply principles learned in the first term of this course toward organ functionality.

Academic dishonesty and late or missed work:

All assessments should be your own work, unless it is a pair/group assignment. Any evidence that the work is copied from a peer or the internet or any other source will result in a zero for the assessment and you will be reported to the university for Academic Dishonesty. I do not accept late work. **Students cannot miss any exams or assessments** unless they have a documented, university-approved excuse; in these cases, the instructor needs to be informed in writing **at least 24 hours in advance** of the exam or assessment due date. Assignments and quizzes will be posted for long enough that an absence or technological difficulty on the due date generally does not constitute grounds for an extension. University-approved absences include SRSU athletic events, death in the family, illness, etc (see <https://www.sulross.edu/sites/default/files//sites/default/files/users/docs/stulife/academic.pdf> for further details). **The make-up exam must be taken within 6 days of the original exam.**

Studying:

As a general rule, students should spend 2-3 hours studying for every 1 hour of lecture material. So, for this class, you need to allocate 5-7.5 hours per week to study the lecture material. I recommend reading your notes in conjunction with reading the relevant textbook chapters and watching instructional videos online (Crash Course videos on YouTube provide good summaries). Studying is best done shortly after the lecture, not all at once the night before the exam. Look up anything that you do not understand or visit with your instructor during office hours.

Grading:

There will be three lecture exams. Exams will cover the lecture material immediately preceding the exams *i.e.*, there will be no comprehensive final exam.

	<b>Weighting</b>	<b>Grades</b>
Exam I	25%	
Exam II	25%	
Exam III	25%	
Assignments & Quizzes	25%	
<b>TOTAL</b>	<b>100%</b>	<b>A: 90-100% B: 80-89% C: 70-79% D: 60-69% F: &lt;59%</b>

Class schedule (subject to change):

<b>Date</b>		<b>Topic</b>	<b>Textbook Chapter (Saladin 2018)</b>
12 Jan	Lecture 1	Course Introduction + Endocrine System	17
14 Jan	Lecture 2	Endocrine System	17
19 Jan	Lecture 3	Circulatory System: Blood	18
21 Jan	Lecture 4	Circulatory System: Blood	18
26 Jan	Lecture 5	Circulatory System: Blood	18
28 Jan	Lecture 6	Circulatory System: Blood	18
2 Feb	Lecture 7	Circulatory System: Heart	19
4 Feb	Lecture 8	Circulatory System: Heart	19
9 Feb	Lecture 9	Circulatory System: Heart	19
<b>11 Feb</b>	<b>EXAM</b>	<b>EXAM I</b>	
16 Feb	Lecture 10	Circulatory System: Blood Vessels & Circulation	20
18 Feb	Lecture 11	Circulatory System: Blood Vessels & Circulation	20
23 Feb	Lecture 12	Lymphatic System	21
25 Feb	Lecture 13	Lymphatic System	21
2 Mar	Lecture 14	Immune System	21
4 Mar	Lecture 15	Immune System	21
16 Mar	Lecture 16	Immune System	21
18 Mar	Lecture 17	Immune System	22
23 Mar	Lecture 18	Respiratory System	22
<b>25 Mar</b>	<b>EXAM</b>	<b>EXAM II</b>	
30 Mar	Lecture 19	Urinary System	23
1 Apr	Lecture 20	Urinary System	23
6 Apr	Lecture 21	Urinary System	23
8 Apr	Lecture 22	Water & Electrolyte Balance	24
13 Apr	Lecture 23	Digestive System	25
15 Apr	Lecture 24	Digestive System	25
20 Apr	Lecture 25	Digestive System	25
22 Apr	Lecture 26	Reproductive System	27
27 Apr	Lecture 27	Reproductive System	28
<b>3 May</b>	<b>EXAM</b>	<b>Monday 3 May: EXAM III</b>	

Note – Lecture topics are subject to change according to timing constraints, however the exam dates will remain the same.

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Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. Students seeking accessibility/accommodations services must contact Rebecca Greathouse Wren, Suite 112, Ferguson Hall, Ph: 432-837-8203, email [rebecca.wren@sulross.edu](mailto:rebecca.wren@sulross.edu)

## Assessment of Core Objectives:

### **1. Communication\***

1.1. Written communication will be assessed through written assignments. Specifically, students will critically analyze scientific papers and then write up reaction pieces. The written responses will be assessed for quality of composition, accuracy of content, analysis, interpretation, and synthesis of data, and evaluation of the topic as a whole. Grades will be assigned using a standardized rubric and compared between the beginning vs end of term.

### **2. Team Work\***

2.1. Team work will be assessed through take-home group assignments administered at the beginning and the end of the semester. Team members will be randomly assigned to a group by the instructor, and each group will have to turn in a group assignment for a group grade. In addition to the instructor-assigned group grade, there will be a peer grade, assigned to each member of the group by their team members. The peer grade will be assigned according to each team member's perceived contribution to the group assignment. The inclusion of the peer grade will allow greater insight into how each individual performs within a team. The instructor assigned group grade will be added to the peer group grade for the final grade for the task. This task will be repeated late in the semester, and the group and peer grades will be compared between the beginning vs end of term. Both the instructor and the students will use standardized rubrics to assign grades.

### **3. Critical Thinking**

3.1. Critical thinking skills will be assessed through written assignments. Specifically, students will critically analyze scientific papers and then write up reaction pieces. The written responses will be assessed for quality of composition, accuracy of content, analysis, interpretation, and synthesis of data, and evaluation of the topic as a whole. Grades will be assigned using a standardized rubric and compared between the beginning vs end of term.

### **4. Empirical and Quantitative Skills**

4.1. Exams will contain data-based questions to assess the understanding of key concepts such as Mendelian patterns of inheritance of blood groups, oxygen saturation of hemoglobin, and the rates of flow for fluids in the cardiovascular, respiratory, and urinary systems. Questions of this nature will be included on the first and last exam of the semester and grades will be compared between the two time periods. In addition, students will critically analyze scientific papers and write up reaction pieces. This will involve analysis, interpretation and synthesis of data. Grades will be assigned using a standardized rubric and compared between the beginning vs end of term. These skills will be further developed and assessed with practical experiments conducted in the sister lab BIOL2102 where students will collect data, analyze it, and draw conclusions on their results.

\* Core Objectives Addressed in Spring 2021