Reedley College

CREDIT COURSE OUTLINE

I. COVER PAGE

(1) BIOL 20	(2) HUMAN ANATOMY	(3) 4
Number	Title	Units

(4)	Lecture / Lab Hours:			
	Total Course Hours			
		Total Lec hours:		3.00
		Total Lab hours:		3.00
		Total Contact hours:		108.00
	Lec will generate 0 hour(s) outside work.			
	Lab will generate 0 hour(s) outside work.			
(5)	Grading Basis:	Grading Scale Only		X
		Pass/No Pass option		
		Pass/No Pass only		
(6)	Advisories: Eligibility for English 125 Eligibility for English 126 Eligibility for Math 101			
(7)	Pre-requisites(requires C grade or better): BIOL 1 , or BIOL 5 , or BIOL 11B , or			
	Corequisites:			

(8)Classification:		
	Degree applicable:	X
	Non-degree applicable:	
	Basic skills:	
(9)RC	Fulfills AS/AA degree requirement: (area)	
	General education category:	
	Area A Natural Sciences	
Major:	BIOLOGICAL SCIENCE	
Certificate of:		
Certificate in:		
(10)CSU	Baccalaureate:	X
(11)Repeatable: (A course may be repeated three times)		0

(12) Catalog Description:
This is a course providing a basic understanding and working knowledge of the human body with emphasis on the structure of each major system. The interrelationship between human systems and the relationships between the structure and functions of each system will be studied at several levels: cellular, tissue, organ, system, and organismal.

II. COURSE OUTCOMES:

(Specify the learning skills the student demonstrates through completing the course and link critical thinking skills to specific course content and objectives.)

Upon completion of this course, students will be able to:

I. Identify the major body systems macroscopically.
II. Identify the major body tissue and cell types microscopically.
III. use a microscope to identify tissues and cells
IV. describe the functions of the body systems
V. describe functions of the cells and tissues

III. COURSE OBJECTIVES:

(Specify major objectives in terms of the observable knowledge and/or skills to be attained.)

In the process of completing this course, students will:

I. identify the basic structure and function of each human system at the macroscopic and microscopic levels.
II. develop important critical thinking skills as they evaluate lecture topics and the results of laboratory demonstrations and experiments.
III. learn how to use scientific methods.
IV. develop important manual dexterity skills associated with dissections, free-hand drawings, completion of anatomical color plates, and the operation of microscopes, computers, and other laboratory equipment.

IV. COURSE OUTLINE:

Lecture Content:

A. Section I: Lecture and Lab Exam 1 at the end of the 5 week section:
1. Introduction: Anatomical Terminology, Homeostasis, Feedback, and Biochemistry
a. The Cell: Cytosol, Intracellular Organelles, DNA
b. Mitosis and Meiosis
c. The Microscope: Light, SEM and TEM
d. Four types of human tissues: Histology – Epithelial, Connective, Muscle, & Nervous
e. Gastrointestinal Tract:
1) Structure and Function
2) GI Tract Lining
2. The Urinary System:
a. All Components: Kidneys, Ureters, Bladder, and Urethra
b. Microscopic and macroscopic study of the urinary system
c. Disorders

B. Section II: Lecture and Lab Exam 2 at the end of the 5 week section (or 11th week):
1. Body Systems
a. Muscular System:
1) Identification of muscles: origin, insertion, and major action
2) Muscle Histology
b. Muscular Contraction: Neuro muscular junction
1) Structure
2) Chemistry of membranes
2. Bones: Axial and Appendicular Systems
3. Articulations
a. Classification
b. Examples: knee, shoulder, and elbow
4. Endocrine System
a. Glands and Location
b. Hormones and Control
5. Reproductive Systems: Human male and female
a. Male and Female Reproductive Structures
b. Spermatogenesis and Oogenesis
c. Pregnant vs Non-pregnant Condition
1) Embryology
2) Disorders

C. Section III: Lecture and Lab Exam 3 at the end last 5 week section (or the 17th week)
1. Body Systems II
a. Nervous System
1) Histology
2) The Brain and Cranial Nerves
3) The Spinal Cord and Spinal Nerves
4) Disorders
2. Cardiovascular System
a. The Blood (functions, components, disorders)
b. The heart (anatomy and disorders)
c. Vessels: arteries, capillaries, and veins
d. Circulatory Routes: systemic, pulmonary, cardiac, hepatic portal, & fetal
3. Special Senses
a. Hearing and Balance
b. Smelling
c. Taste
1) Touch
2) Eyesight
4. Respiratory System
a. Anatomy and Functions
b. Disorders
5. Lymphatic System
a. Anatomy and Functions
b. Disorders

Lab Content:

Lab content :
Week 1: anatomical terminology, quadrants, regions
Week 2: the cell, mitosis and meiosis
Week 3: Histology and the integument
Week 4: Digestive System
Week 5: Urinary System
Week 6: Laboratory Exam
Week 7: Skeletal System

Week 8: Muscular System
Week 9: Articulations
Week 10: Endocrine System
Week 11: Reproductive System
Week 12 : Laboratory Exam
Week 13: Nervous System
Week 14: Cardiovascular System
Week 15: Special Senses
Week 16: Respiratory and Lymphatic Systems'
Week 17: Laboratory Exam

V. APPROPRIATE READINGS

Reading assignments may include but are not limited to the following:

I. Sample Text Title:
1. Recommended - Martini and Timmons *Human Anatomy,* ed. 6th Pearson/ Benjamin Cummings, 2009,

II. Other Readings

___ Global or international materials or concepts are appropriately included in this course
___ Multicultural materials and concepts are appropriately included in this course

If either line is checked, write a paragraph indicating specifically how global/international and/or multicultural materials and concepts relate to content outline and/or readings.

VI. METHODS TO MEASURE STUDENT ACHIEVEMENT AND DETERMINE GRADES:

Students in this course will be graded in at least one of the following four categories. Please check those appropriate. A degree applicable course must have a minimum of one response in category A, B, or C.

A. Writing Check either 1 or 2 below			
X	***1. Substantial writing assignments are required. Check the appropriate boxes below and provide a written description in the space provided.***		
	2. Substantial writing assignments are NOT required. If this box is checked leave this section blank. For degree applicable courses you must complete category B and/or C.		
X	a) essay exam(s)	X	d) written homework
	b) term or other paper(s)	X	e) reading reports
X	c) laboratory report(s)	X	f) other (specify)

Required assignments may include but are not limited to the following:
1. journal reading assignments.
2. lab reports.
3. essay questions involving critical thinking.
4. written homework including the muscle list.
5. online exercises.

B. Problem Solving Computational or non-computational problem-solving demonstrations, including:			
X	a) exam(s)	X	d) laboratory reports
X	b) quizzes		e) field work
X	c) homework problems		f) other (specify):

Required assignments may include but are not limited to the following:
1. metric system conversion from the English system.
2. quizzes on microscopic and macroscopic anatomy.
3. exams will be multiple choice, matching, and essay questions.
4. lab reports on each human body system.

C. Skill demonstrations, including:			
	a) class performance(s)		c) performance exams(s)
	b) field work		d) other (specify)

Required assignments may include but are not limited to the following:

D. Objective examinations including:

X	a) multiple choice	X	d) completion
X	b) true/false		e) other (specify):
X	c) matching items		

COURSE GRADE DETERMINATION:
Description/Explanation: Based on the categories checked in A-D, it is the recommendation of the department that the instructor's grading methods fall within the following departmental guidelines; however, the final method of grading is still at the discretion of the individual instructor. The instructor's syllabus must reflect the criteria by which the student's grade has been determined. (A minimum of five (5) grades must be recorded on the final roster.)

If several methods to measure student achievement are used, indicate here the approximate weight or percentage each has in determining student final grades.
30% Lecture Exams 30% Laboratory Exams 20% Quizzes 20% Laboratory Reports

VII. EDUCATIONAL MATERIALS

For degree applicable courses, the adopted texts, as listed in the college bookstore, or instructor-prepared materials have been certified to contain college-level materials.

Validation Language Level (check where applicable):	College-Level Criteria Met YES	NO
Textbook	X	
Reference materials	X	
Instructor-prepared materials	X	
Audio-visual materials	X	

Indicate Method of evaluation:

Used readability formulae (grade level 10 or higher)	X
Text is used in a college-level course	X
Used grading provided by publisher	
Other: (please explain; relate to Skills Levels)	

Computation Level (Eligible for MATH 101 level or higher where applicable)	X	
Content		
Breadth of ideas covered clearly meets college-level learning objectives of this course	X	
Presentation of content and/or exercises/projects:		
Requires a variety of problem-solving strategies including inductive and deductive reasoning.	X	
Requires independent thought and study	X	
Applies transferring knowledge and skills appropriately and efficiently to new situations or problems.	X	

List of Reading/Educational Materials
Recommended - Martini and Timmons *Human Anatomy,* ed. 6th Pearson/ Benjamin Cummings, 2009,

Comments:

_____ This course requires special or additional library materials (list attached).
_____ This course requires special facilities:

Attached Files:
BIOL 20 FORMS ABC

BASIC SKILLS ADVISORIES PAGE The skills listed are those needed for eligibility for English 125, 126, and Math 101. These skills are listed as the outcomes from English 252, 262, and Math 250. In the right hand column, list at least three major basic skills needed at the beginning of the target course and check off the corresponding basic skills listed at the left.

(eligibility for Math 101) (as outcomes for Math 250) __X__ Performing the four arithmetic operations on whole numbers, arithmetic fractions, and decimal fractions. __X__ Making the conversions from arithmetic fractions to decimal fractions, from decimal fractions to percents, and then reversing the process.	1. use ratios and exponents 2. convert numbers to percent 3. know the conversion of the English to the Metric systems for weight, volume, temperature, and mass

__X__ Applying the concepts listed above to proportions, percents, simple interest, markup and discount. __X__ Applying the operations of integers in solving simple equations. __X__ Converting between the metric and English measurement systems	
(eligibility for English 126) (as outcomes for English 262) __X__ Using phonetic, structural, contextual, and dictionary skills to attack and understand words. __X__ Applying word analysis skills to reading in context. __X__ Using adequate basic functional vocabulary skills. __X__ Using textbook study skills and outlining skills. __X__ Using a full range of literal comprehension skills and basic analytical skills such as predicting, inferring, concluding, and evaluating.	1. use a college level textbook 2. ability to learn biological terminology 3. ability to outline lecture, read, evaluate, and understand case studies
(eligibility for English 125) (as outcomes for English 252) __X__ Writing complete English sentences and avoiding errors most of the time. __X__ Using the conventions of English writing: capitalization, punctuation, spelling, etc. __X__ Using verbs correctly in present, past, future, and present perfect tenses, and using the correct forms of common irregular verbs. __X__ Expanding and developing basic sentence structure with appropriate modification. __X__ Combining sentences using coordination, subordination, and phrases. __X__ Expressing the writer's ideas in short personal papers utilizing the writing process in their development.	1. ability to write lab reports 2. ability to answer short essay questions 3. ability to use correct anatomical terminology in answering questions

Check the appropriate spaces.
__X__ Eligibility for Math 101 is advisory for the target course.
__X__ Eligibility for English 126 is advisory for the target course.
__X__ Eligibility for English 125 is advisory for the target course.

If the reviewers determine that an advisory or advisories in Basic Skills are all that are necessary for success in the target course, stop here, provide the required signatures, and forward this form to the department chair, the appropriate associate dean, and the curriculum committee.

CONTENT REVIEW

BIOL 1 PRINCIPLES OF BIOLOGY

BIOL 11B BIOLOGY FOR SCIENCE MAJORS II

BIOL 5 HUMAN BIOLOGY

REQUISITES

Subject Prerequisite -- BIOL 1 PRINCIPLES OF BIOLOGY

- understand scientific method and be able to apply the process to any situation that needs evaluation and recommendations. For example: the pre-nursing students are learning how to approach each patient and the evaluative process.
- evaluate comparative anatomy and physiology in living organisms. This applies to the normal vs. abnormal anatomy and physiology as well as comparing totally different organisms.
- identify the basic structure and function of each human system at the macroscopic and microscopic levels.
- develop important critical thinking skills as they evaluate lecture topics and the results of laboratory demonstrations and experiments.
- learn how to use scientific methods.
- develop important manual dexterity skills associated with dissections, free-hand drawings, completion of anatomical color plates, and the operation of

• use inductive and deductive reasoning in any environmental or ecological issue.	microscopes, computers, and other laboratory equipment.
Subject Prerequisite -- BIOL 5 HUMAN BIOLOGY	
• understand the structure and function of the following systems: circulation, digestive, respiratory, urinary, skeletal, muscular, nervous, sensory, endocrine, reproduction, and genetics and evolution • apply the principles of genetics to humans and understand the outcome of normal and abnormal DNA • understand the process of science and society, microscopy, and the cell • identify human body levels of organization and homeostatic mechanisms • understand the chemical basis of life	• identify the basic structure and function of each human system at the macroscopic and microscopic levels. • develop important critical thinking skills as they evaluate lecture topics and the results of laboratory demonstrations and experiments. • learn how to use scientific methods. • develop important manual dexterity skills associated with dissections, free-hand drawings, completion of anatomical color plates, and the operation of microscopes, computers, and other laboratory equipment.
Subject Prerequisite -- BIOL 11B BIOLOGY FOR SCIENCE MAJORS II	
• use scientific methods in performing experiments and collecting data; • evaluate comparative anatomy and physiology in living organisms; • compare and contrast functional systems of living organisms; • evaluate scientific literature and current biological advances; • distinguish how all body systems work together to maintain homeostasis;	• identify the basic structure and function of each human system at the macroscopic and microscopic levels. • develop important critical thinking skills as they evaluate lecture topics and the results of laboratory demonstrations and experiments. • learn how to use scientific methods. • develop important manual dexterity skills associated with dissections, free-hand drawings, completion of anatomical color plates, and the operation of microscopes, computers, and other laboratory equipment.

ESTABLISHING PREREQUISITES OR COREQUISITES

Every prerequisite or corequisite requires content review plus justification of at least one of the seven kinds below. Prerequisite courses in communication and math outside of their disciplines require justification through statistical evidence. Kinds of justification that may establish a prerequisite are listed below.

Check one of the following that apply. Documentation may be attached.

1. _____ The prerequisite/corequisite is required by law or government regulations.
   Explain or cite regulation numbers:
2. _____ The health or safety of the students in this course requires the prerequisite.
   Justification: Indicate how this is so.
3. __X__ The safety or equipment operation skills learned in the prerequisite course are required for the successful or safe completion of this course.
   Justification: Indicate how this is so.
   Microscopy is essential for microscopic human anatomy. Students must learn the use and safety of dissection tools.
4. _____ The prerequisite is required in order for the course to be accepted for transfer to the UC or CSU systems.
   Justification: Indicate how this is so.
5. _____ Significant statistical evidence indicates that the absence of the prerequisite course is related to unsatisfactory performance in the target course.
   Justification: Cite the statistical evidence from the research.
6. __X__ The prerequisite course is part of a sequence of courses within or across a discipline.
   Biol 1 or 5 then Biol 20 Biol 11A then 11B then Biol 20
7. __X__ Three CSU/UC campuses require an equivalent prerequisite or corequisite for a course equivalent to the target course:
   CSU, Hayward San Diego St. CSU, Sonoma CSU, Sacramento