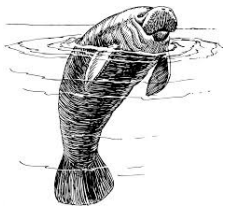
BIOLOGICAL SCIENCE 102 - ANIMAL BIOLOGY – FALL 2023

PROFESSOR: BLAKE BARRON ***BLAKE'S OFFICE***: EBS 322 at SBCC

BLAKE'S OFFICE HOURS: Mondays 10:00 AM – 11:00 AM, Tuesdays 2:30 PM – 3:30 PM, Wednesdays 10:00 AM – 11:00 AM, Thursdays 2:30 PM – 3:30 PM, or other in-office hours or by Zoom at a previously arranged appointment time. I may also hold some office hours in ECC4/STL.

BLAKE'S E-MAIL ADDRESS: barron@sbcc.edu ***OFFICE TELEPHONE #:*** 805-730-4244

INTRODUCTION: **Welcome to Biology 102 and the study of the wondrous array of animal life and adaptation that has evolved on our planet!** For most students this is an astounding, interesting, sometimes awe-inspiring and quite fun view of zoology as we know it. **This is a 5 unit course designed for students who are interested in a career in the Biological Sciences or related fields and are or plan to be Biology Majors**. This course is the second in a 3 course Biological Sciences Majors series at SBCC. This course also satisfies the SBCC General Education Requirement in Natural Sciences, but you should be aware that **THIS IS A VERY CHALLENGING COURSE** that will require a significant amount of your time and effort both during and outside of class. In order to reach your greatest potential in this course, you should **PLAN TO SPEND MANY, MANY HOURS OUTSIDE OF CLASS EACH WEEK reading, studying and preparing for this course** (a **minimum of 12 hours of study for just this course per week** is suggested). This course is also transferable to both the UC and CSU as a laboratory science course. If you are simply looking to fulfill a general education requirement as a non-major, Biological Science 100 or Zoology 122/123 will best serve you as an alternate course. These courses are both general education introductory courses that also transfer to the UC and CSU as a general education laboratory science (for IGETC).



For this course, you must attend two lectures each week and complete and attend TWO 3 hour labs each week. LECTURES AND LABS HAVE REQUIRED FACE-TO-FACE MEETINGS.

You must enroll in, attend and pass the laboratory as well as the lectures to pass this course.

TEXT: The **required** text is: ***Integrated Principles of Zoology***, hardback by Hickman et al., 18th or 17th edition or similar. I suggest that you **skim the reading assignments before coming to class** and then **read the text assignments thoroughly after you attend lecture** as you will be better prepared to grasp the material presented in the textbook. **You are NOT required to have a ConnectPlus textbook code.**

As majors students you will quickly realize the tremendous benefit of the text as a resource.

You will find the ***Dictionary of Word Roots and Combining Forms*** (paperback) by Donald J. Borror to be a very useful reference for this course to help explain the **etymology of the scientific vocabulary and taxonomy** (often from Greek and Latin) that is critical to a true understanding of zoology.

LAB MANUAL AND SIMBIO MODULES: There is a required Biological Sciences 102 - Animal Biology - Laboratory Procedures lab manual that will be posted ONLINE ONLY via the course website and CANVAS. **There is NO lab manual for you to purchase at the SBCC Bookstore. You WILL need to purchase 6 SimBio Lab modules which you can get from the SBCC Bookstore (free if you are on the SBCC Promise) or you can buy directly from SimBio. The bookstore will provide you with an access code once you purchase these digital lab modules.** Additional required lecture and lab documents and webpages will be distributed on the course website and via CANVAS.

WEBSITE AND LECTURE NOTES: A required series of supplementary webpage content, videos, lecture notes, laboratories, vocabulary lists, review sheets, and practice quizzes will be available as webpages or for download as PDF files and slideshow presentations from the course website (http://www.biosciweb.net/bio102).
Please contact Blake if you have problems with access to a computer or the Web/Internet.
***LECTURES*: LIVE & FACE-TO-FACE (F2F) IN EBS 309 ON THE SBCC CAMPUS ON Mondays & Wednesdays from 8:00 am - 9:20 am. NONE OF THE LECTURES WILL BE ON ZOOM OR REMOTE.** During our traditional lectures we will have some interactive questions and content practice, class discussion of topics, etc. **NONE OF THE F2F SESSIONS WILL BE RECORDED, YOU MUST ATTEND IN PERSON. This is typically a VERY challenging and interesting science class for most students, and you will find tremendous benefit in actually being present in our traditional F2F lectures and laboratories. The topic naturally lends itself to interesting discussion at a variety of levels...**

***LECTURES*:**	Mondays & Wednesdays, 8:00 am - 9:20 am in EBS 309
LABS -	M & W, 11:10 am - 2:15 pm (CRN# 30939) **or**
TIMES & SECTIONS:	M & W, 2:30 pm - 5:35 pm (CRN # 30941) **or**
(2 LABS PER WEEK)	T & TH, 11:10 am - 2:15 pm (CRN # 30940)

***LAB FORMAT:* ALL of our labs will have both a FACE-TO-FACE, HANDS-ON portion in the Animal Biology Laboratory, EBS 209 and an asynchronous portion to complete at home online.** During lecture and on the course website, Blake will tell you each week what to expect and do for each of the **TWO labs you will complete every week**. Usually, you will start the lab on your own via the links to the Google docs for the lab posted on the LABS page of the course website. Lab sessions will be FACE-TO-FACE lab meetings in EBS 209 to work on the more hands-on portions of the lab and for you to ask questions of Blake about the lab, interact with your classmates and complete most of each of the labs. All labs have a homework component to be completed after each lab session before you turn in the finished lab.
All of our labs will last the entire 3 hours twice per week – do not plan to get out early.

THE FINAL COURSE GRADE IS DETERMINED BY STUDENT COMPLETION AND PERFORMANCE OF THE FOLLOWING ASSIGNMENTS:

ASSIGNMENTS	*DATE*	*POINTS*	*% of COURSE GRADE*
Three Lecture & Lab Assessment Exams:	Exam #1 on Wed., September 20 (in Week 4)	125	~7%
	Exam #2 on Wed., October 11 (in Week 7)	125	~7%
	Exam #3 on Wed., November 8 (in Week 11)	125	~7%
One Final Exam:	Monday, December 11: 8 am–10 am (Finals Week)	175	~10%
Laboratory Quizzes:	13 @ 20 points each – see lab schedule	260	~14%
Lab Assignments:	25 @ 10 points each – see lab schedule	250	~14%
Laboratory Animal ID & Anatomy Practica:	2 practica @ 100 points each	200	~11%
Literature Research Paper:	1 paper @ 100 points – due in Week 8	100	~6%
Oral Lab Presentation:	1 presentation @ 75 points in Week 13	75	~4%
Weekly SimBio Labs/Group/Discussion/Homework Assignments:	TBA	365	~20%
***TOTAL*:**		**1800**	**100**

YOU WILL BE TAKING SOME OF YOUR LAB QUIZZES ON PAPER IN OUR LABS AND SOME ON CANVAS IN THE QUIZZES PORTION OF CANVAS. YOU WILL BE TAKING YOUR ASSESSMENT EXAMS FACE-TO-FACE ON PAPER IN CLASS DURING REGULAR LECTURE HOURS IN EBS 309

OPTIONAL REVIEW SESSIONS FOR EXAMS WILL BE SCHEDULED OUTSIDE NORMAL CLASS HOURS

EXAMS: Each of the exams and quizzes will consist of a varied combination of multiple choice, fill-in-the-blank, sentence completion, matching, short answer, essay, and diagram/graph interpretation questions. The vast majority of the exam will be short answer and interpretive types of questions.

Finches from Galapagos Archipelago

1. THE EXAMS WILL BE SEMI-CUMULATIVE WITH AN EMPHASIS ON MOST RECENT STUDY MATERIAL. EXAMS WILL HAVE A TIME LIMIT OF THE REGULAR CLASS TIME (80 MINUTES) AND BE DONE FACE-TO-FACE IN THE LECTURE HALL ON PAPER.
2. EXAMS WILL COVER INFORMATION FROM BOTH LECTURE AND LABORATORY.
3. A MISSED EXAM WILL SIGNIFICANTLY LOWER YOUR COURSE GRADE, USUALLY BY ONE LETTER GRADE.
   THE FINAL EXAM HAS A CUMULATIVE COMPONENT.
4. FAILURE IN THE LAB PORTION OF THIS COURSE WILL USUALLY RESULT IN AN OVERALL FAILING GRADE IN THIS COURSE. YOU WILL RECEIVE ONE COMBINED GRADE FOR BOTH LECTURE AND LAB.
5. NONE OF THE EXAMS WILL BE DROPPED. ALL EXAMS SCORES WILL COUNT TOWARD THE FINAL GRADE.

QUIZZES: The lab quizzes will cover material discussed and studied during the previous **two labs**.

1. THERE WILL BE 13 LAB QUIZZES – ALL OF THESE QUIZZES WILL COUNT TOWARD YOUR FINAL GRADE.
2. THERE WILL NOT BE ANY LAB QUIZ OR LAB PRACTICA MAKEUPS. AS MAJORS STUDENTS, YOU CANNOT AFFORD TO MISS ANY MATERIAL. IF YOU MISS A LAB QUIZ OR PRACTICUM YOU WILL NOT EARN THOSE POINTS.
3. DO NOT DISMISS THE LAB QUIZZES AS THEY ACCOUNT FOR 260 POINTS AND ABOUT 14% OF THE FINAL GRADE, ABOUT THE EQUIVALENT OF TWO EXAMS. SOME QUIZZES WILL BE F2F IN OUR LABS AND SOME QUIZZES WILL BE ON CANVAS – THESE WILL HAVE A TIME LIMIT BUT THEY WILL NOT USE PROCTORIO. LAB QUIZZES CAN BE TAKEN ANYWHERE THAT YOU HAVE ACCESS TO A COMPUTER FOR CANVAS QUIZZES ONLY.
4. IF YOU DO NOT SUBMIT ALL OF THE ASSIGNMENTS FOR THE FIRST WEEK OF CLASSES THEN YOU WILL BE DROPPED FROM THE COURSE BECAUSE OF A LACK OF PARTICIPATION WHICH IS A LEADING CAUSE OF STUDENT FAILURE IN COURSES. IF YOU MISS MORE THAN ANY COMBINATION OF THREE LECTURE OR LAB ASSIGNMENTS YOU MAY BE DROPPED FROM THE COURSE UNLESS YOU DISCUSS WITH ME ANY INTENDED OR UNFORESEEN ABSENCES.

REQUIRED READING ASSIGNMENTS IN THE 19th or 18th EDITION OF THE HICKMAN TEXT ARE LISTED BELOW

Read these chapters in the Hickman text BY the dates indicated. If you follow this reading schedule, you will stay ahead in your reading as you should be doing for both the lecture and laboratory meetings. **Each week the exact assignments, quizzes or exams that are due with due dates, reading in the text you should be doing and the content you should be working on will be posted on the course website and emailed directly to you.**

LECTURE SCHEDULE begins on the next page

THIS SCHEDULE MAY BE MODIFIED DURING THE COURSE AT MY DISCRETION

REQUIRED LECTURE MATERIAL WILL ALSO BE DISCUSSED DURING LABORATORY SESSIONS

Laboratory sessions will focus on taxonomy, diversity and specific adaptations of the animal phyla while lecture meetings will focus more on broad-based, integrated and comparative concepts across the various disciplines of animal cell biology, evolution, ecology, physiology and behavior.

LECTURE, LAB AND WEB CONTENT SCHEDULE

WEEK	DATES	LECTURE TOPIC & READING ASSIGNMENT (HICKMAN et al., 19 or 18 ed.)
1 	AUG 28 - SEPT 3	Course Introduction: Policies, Procedures, Expectations & Study Skills, How to Work Together as a Class Team, How to "Think" Like a Scientist, Being a Biology Major, How to Study for This Class, PAL Tutor Sessions, The Scientific Method, The Science of Zoology, Hypothesis vs. Theory, Correlation vs. Causation and & Value of Biodiversity **READING = CHAPTER 1 and for lab: CHAPTERS 6 & 11**

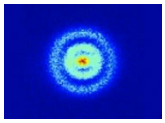
ASSIGNMENTS FOR WEEK #1:

- INTRODUCTORY STUDENT & SOTL SURVEY FOR BLAKE
- LAB #1: LABORATORY INTRO., LAB POLICIES AND PROCEDURES, MICROSCOPY & EVOLUTION REVIEW
- LAB #2: CELL THEORY, ANIMAL CELLS, CELL LOCOMOTION, CELL DIVISION, SYMBIOSIS & KINGDOM PROTOCTISTA
- DISCUSSION ON CANVAS: INTRODUCE SELF TO CLASSMATES
- ASSIGNMENT #1: GEOLOGIC TIMELINE AND THE FOSSIL RECORD
- REQUIRED PROCTORIO PRACTICE QUIZ

2	SEPT 4 - 10	The Hierarchy of Life, Fundamental Anatomy & Physiology Concepts, Vaccination/Immunization, Atoms & Chemical Bonding, The Importance of Water & Carbon, Introduction to Osmoregulation and Biogeochemical Cycling **READING ASSIGNMENT = CHAPTERS 2 & 3 and for lab: CHAPTERS 9, 10 & 12**
MON	SEPT 4	NO LECTURE OR LAB MEETINGS DUE TO LABOR DAY HOLIDAY
TUES	SEPT 5	NO LAB MEETING DUE TO LABOR DAY HOLIDAY

ASSIGNMENTS FOR WEEK #2:

- QUIZ #1: ON COURSE SYLLABUS AND LAB #1 AND WEEK #1 LECTURE REVIEW QUESTIONS
- LAB #3: PHYLOGENETICS & ZOOLOGICAL SYSTEMATICS: DOMAINS, KINGDOMS, TAXONOMY & CLASSIFICATION, PHYLOGENETIC METHODS & INTRODUCTION TO DNA BARCODING
- ASSIGNMENT #2: LIGHT, LENSES & MICROSCOPY

3 	SEPT 11 – 17	Chemical Bonding, Electronegativity, The Chemistry & Importance of Water to Life on Earth, The Big Bang, Fundamental Physical Forces and History of the Universe to the Formation of Planet Earth **READING ASSIGNMENT = CHAPTER 2 and for lab: CHAPTERS 12 & 13**

ASSIGNMENTS FOR WEEK #3:

- QUIZ #2: ON LABS #2 AND #3 AND WEEK #2 LECTURE REVIEW QUESTIONS
- LAB #4: EARLY EUMETAZOAN EVOLUTION, BASIC ANIMAL TISSUES & EMBRYOLOGY AND PHYLUM PORIFERA
- LAB #5: SYMBIOSIS, PHYLA CNIDARIA & CTENOPHORA & INTRODUCTION TO NERVOUS SYSTEMS
- ASSIGNMENT #3: ATOMS, CHEMICAL BONDS & BIOMOLECULES

4	SEPT 18 - 24	Our Solar System, Formation of the Moon & Earth's Oceans, Basic Organic Chemistry and Biomolecules & Trophic Structure **READING ASSIGNMENT = CHAPTERS 2, 3 & 4 and for lab: CHAPTER 14 (all) & CHAPTER 15 pgs. 328–337 & CHAP. 17 (all)**

WEDNESDAY, SEPT. 20 FIRST LECTURE & LAB EXAMINATION AT 8:00 AM IN EBS 309

ASSIGNMENTS FOR WEEK #4:

- QUIZ #3: ON LAB #4 AND WEEK #3 LECTURE REVIEW QUESTIONS
- LAB #6: PARASITISM, PHYLA PLATYHELMINTHES, NEMERTEA, NEMATODA & ROTIFERA & ANIMAL REPRODUCTION
- LAB #7: PHYLUM MOLLUSCA AND INTRODUCTION TO DIGESTIVE SYSTEMS
- SIMBIO #1 DIGITAL LAB: DNA EXPLORED

5 SEPT 25 - OCT 1

Cell Membrane Structure: Fluid Mosaic Model, Diffusion, Cellular Effects of Osmosis, Cell Membrane Transport, Evolution of First Life on Earth and History of Life on Earth: Prokaryotes to The Cambrian Explosion
READING ASSIGNMENT = CHAPTERS 3 & 4 and for lab: CHAPTERS 16 & 17

ASSIGNMENTS FOR WEEK #5:

- QUIZ #4: ON LABS #5 & #6 AND WEEK #4 LECTURE REVIEW QUESTIONS
- LAB #8: PHYLUM ANNELIDA AND INTRODUCTION TO CARDIOVASCULAR SYSTEMS
- LAB #9: PHYLUM ONYCHOPHORA, PHYLUM TARDIGRADA, PHYLUM ARTHROPODA: TRILOBITA & CHELICERATA AND INTRODUCTION TO RESPIRATORY SYSTEMS
- START DNA BARCODING & PHYLOGENETICS LAB #26: TISSUE SAMPLE TO CELL LYSATE
- ASSIGNMENT #4: RADIOMETRIC DATING & MORE ON FOSSILS

6 OCT 2 - 8

The History of Life on Earth: Evolution of Protists, Endosymbiotic Theory, Cell Organelle Review, Animal Tissues, Fundamentals of Animal Reproductive Strategies and Intraspecific vs. Interspecific Competition & Population Growth
READING ASSIGNMENT = CHAPTERS 3, 9 & 11 and for lab: CHAPTERS 19 & 20

ASSIGNMENTS FOR WEEK #6:

- QUIZ #5: ON LABS #6 & #7 AND WEEK #5 LECTURE REVIEW QUESTIONS
- LAB #10: PHYLUM ARTHROPODA: CRUSTACEA AND INTRODUCTION TO MUSCULAR SYSTEMS
- LAB #11: PHYLUM ARTHROPODA: MYRIAPODA & HEXAPODA AND INTRODUCTION TO ANIMAL SENSORY SYSTEMS
- SIMBIO #2 DIGITAL LAB: MENDELIAN PIGS

7 OCT 9 - 15

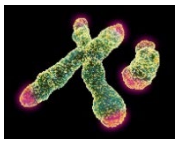
Population Demographics, Sex/Gender Determination in Animals, Nucleic Acid Structure and Function, Chromosomes & Molecular Biology of the Gene: Protein Synthesis, Mutations & Molecular Evolution
READING ASSIGNMENT = CHAPTERS 5 & 6 and for lab: CHAPTER 21

ASSIGNMENTS FOR WEEK #7:

- QUIZ #6: ON LABS #8 & #9 AND WEEK #6 LECTURE REVIEW QUESTIONS
- LAB #12: ECOLOGY/DIVERSITY FIELD TRIP - STREAM INSECT ADAPTATIONS & FRESHWATER INVERTEBRATES
- IN LAB INSECT ORDER ORAL PRESENTATIONS START
- LAB #13: PHYLUM ECHINODERMATA, MORE ON ANIMAL DEVELOPMENT AND INTRODUCTION TO THE PHYLUM CHORDATA: TUNICATES & CEPHALOCHORDATES
- DNA BARCODING & PHYLOGENETICS LAB #26 NEXT STEP: PURIFY DNA & COLUMN CHROMATOGRAPHY

WEDNESDAY, OCT 11 SECOND LECTURE & LAB EXAMINATION AT 8:00 AM IN EBS 309

8 OCT 16 - 22



Mendel & Morgan, Mendelian Genetics, Punnett Squares, Genetic Diseases, Complex Inheritance, Sex-Linked Traits and the Modern Synthesis: Molecules, Genetics & Evolution and the Summary of the History of Life on Earth: The Cambrian Explosion to the Present
READING ASSIGNMENT = CHAPTERS 5 & 6 and for lab: CHAPTER 22, 23 & 24

ASSIGNMENTS FOR WEEK #8:
- QUIZ #7: ON LAB #10 & GENERAL ARTHROPOD TAXONOMY AND WEEK #7 LECTURE REVIEW QUESTIONS
- LAB #14: PHYLUM CHORDATA: THE FISHES - DIVERSITY AND ANATOMY
- LAB #15 - *MACROCYSTIS PYRIFERA* (BROWN MACROALGAE/KELP) HOLDFAST **& FIRST LAB PRACTICUM REVIEW**
- SIMBIO #3 DIGITAL LAB: DARWINIAN SNAILS

DRAFT COPY FOR PEER REVIEW OF LITERATURE SEARCH ASSIGNMENT IS DUE MONDAY, OCTOBER 16

9 OCT 23 - 29

Evolution Definitions, Darwin, History of Evolutionary Thought, Geologic History & The Fossil Record, Development of Darwin's Theory, Key Concepts & Evidence for Evolution, Agents of Evolutionary Change, Population Genetics, Speciation, Rates of Speciation, Hardy-Weinberg Equilibrium, Reproductive Barriers, Types & Effects of Selection
READING ASSIGNMENT = CHAPTERS 5 & 6 and for lab: REVIEW AND PRACTICE FOR LABORATORY PRACTICUM #1

ASSIGNMENTS FOR WEEK #9:
- QUIZ #8: PRACTICE QUIZ FOR LABORATORY PRACTICUM #1
- **LABORATORY PRACTICUM #1: PROTISTS TO CRUSTACEA**
- LAB #24: TIDEPOOL FIELDTRIP: UCSB COAL OIL POINT RESERVE (WEDNESDAY, OCT. 25 AND THURSDAY, OCT. 26)

PEER REVIEW DOCUMENT OF CLASSMATES LITERATURE SEARCH ASSIGNMENT IS DUE MONDAY, OCTOBER 23

10 OCT 30 - NOV 5

Cool and Topical Animal Biology Concepts Including: Heterozygote Advantage, Zoological Biotechnology Techniques & Issues, Key/Basic Molecular Biology Techniques, Cell Differentiation, Genetic Rescue, Cloning, Resurrection Biology and Cool Invertebrate Adaptations - Examples Including: Parthenogensis, Cephalopod Chromatophores, Vision & Camouflage, Structural vs. Pigment Color and the Importance of Color in the Animal World, Hormones vs. Pheromones: Arthropod Ecdysis (molting) and Mimicry
READING ASSIGNMENT = PARTS OF CHAP. 34 (TBA) & REVIEW LECTURE SLIDES AND WEB CONTENT AS ASSIGNED for lab: CHAPTERS 25, START #26 & PARTS OF 31 ON HEARTS

ASSIGNMENTS FOR WEEK #10:
- QUIZ #9: ON LABS #13 & #14 AND WEEK #9 LECTURE REVIEW QUESTIONS
- LAB #16: PHYLUM CHORDATA: CLASSES AMPHIBIA & REPTILIA, THE EVOLUTION OF TERRESTRIAL VERTEBRATES (TETRAPODS) AND VERTEBRATE CARDIAC ANATOMY AND PHYSIOLOGY
- LAB #17 - PHYLUM CHORDATA: CLASSES REPTILIA & AVES
- DNA BARCODING & PHYLOGENETICS LAB #26 NEXT STEP: PCR OF COI GENE & MORE PHYLOGENETIC METHODS
- SIMBIO #4 DIGITAL LAB: GENETIC DRIFT

FINAL, FULLY EDITED AND FORMATTED COPY OF LITERATURE SEARCH ASSIGNMENT IS DUE MONDAY, OCTOBER 30

11 NOV 6 - 12

Climate Change, Weather vs. Climate, Global Temperature Changes & Evidence of Change, Effects of Climate Change on Animals, Sea Level Rise, Ocean Acidification and Its Effects, Coral Reef Biology, Effects of Climate Change on Coral Reefs & Coral Reef Conservation
READING ASSIGNMENT = CHAPTER 37 & 38 and for lab: CHAPTER 26 & 27

WEDNESDAY, NOV 8 THIRD LECTURE & LAB EXAMINATION AT 8:00 AM IN EBS 309

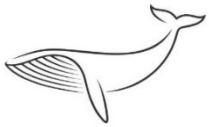
ASSIGNMENTS FOR WEEK #11:
- QUIZ #10: ON LABS #16 & #18 AND WEEK #10 LECTURE REVIEW QUESTIONS
- LAB #18: DINOSAUR & PREHISTORIC ANIMAL MOVIE DAY
- LAB #19: ECOLOGY/BIRD DIVERSITY & BEHAVIOR FIELD TRIP: ANDREE CLARK BIRD REFUGE **PLEASE WEAR FIELD CLOTHING AND COMFORTABLE WALKING SHOES**
- VIDEO LECTURE ACTIVITY: Evolution of the Bird Body Plan & Bird Flight: Anatomy, Physics & Flight Patterns
- SIMBIO #5 DIGITAL LAB: KEYSTONE PREDATORS

12 NOV 13 - 19

Biogeochemical Cycles & Animal Adaptations & Physiology: Osmoregulation and the Excretory System: Gills to Kidneys and Animal Adaptations & Physiology Integumentary Systems: Scales, Feathers, Hair & Skin
READING ASSIGNMENT = CHAPTERS 29 & 30 and for lab: CHAPTER 28

ASSIGNMENTS FOR WEEK #12:
- QUIZ #11: ON LABS #17 & #18 AND WEEK #11 LECTURE REVIEW QUESTIONS
- LAB #20: PHYLUM CHORDATA: CLASS MAMMALIA, THERMOREGULATION AND VERTEBRATE BONES
- LAB #21: SANTA BARBARA ZOO FIELD TRIP, THE AZA AND VOLUNTEERING/INTERNSHIP OPPORTUNITIES **PLEASE WEAR FIELD CLOTHING AND COMFORTABLE WALKING SHOES**
- ASSIGNMENT #5: SOME MAMMAL ECOLOGY AND VERTEBRATE ANATOMY & PHYSIOLOGY CONCEPTS

13 NOV 20 - 26



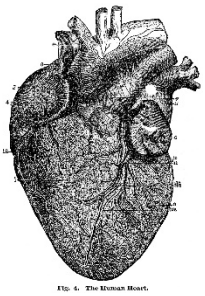
Animal Adaptations & Physiology: Skeletal Systems: Calcium to Cells to Bones and Animal Adaptations & Physiology: Muscular Systems: Fibers, Movement & Metabolism
READING ASSIGNMENT = CHAPTER 29 and for lab: CHAPTERS 32 & START 33

WED, NOV. 22 & THURS, NOV. 23 NO LAB MEETINGS DUE TO THANKSGIVING HOLIDAY, BUT
F2F LECTURES WILL MEET ON MONDAY, NOV. 20 & WEDNESDAY, NOV. 22

ORAL LAB PRESENTATION IS DUE IN WEEK 13 ON MONDAY, NOVEMBER 20 and YOU WILL PERFORM YOUR PRESENTATIONS IN LAB ON MON., NOV. 20 & TUES., NOV. 21

ASSIGNMENTS FOR WEEK #13:
- QUIZ #12: ON LAB #20 AND WEEK #12 LECTURE REVIEW QUESTIONS
- IN PERSON IN LAB: STUDENT ORAL & DIGITAL PRESENTATIONS OF THREATENED VERTEBRATE SPECIES/GROUP
- SIMBIO #6 DIGITAL LAB: HOW DISEASES SPREAD/EPIDEMIOLOGY

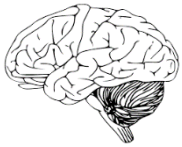
14	NOV 27 – DEC 3	Animal Adaptations & Physiology: Vertebrate Hearts Structure, Function & Evolution, Animal Circulation & the Lymphatic System and Animal Adaptations & Physiology: Respiratory Systems: Tracheal System to Gills to Lungs **READING ASSIGNMENT = CHAPTER 31 and for lab: CHAPTERS 7 & 8**



ASSIGNMENTS FOR WEEK #14:

- QUIZ #13: ON LAB #22 AND WEEK #13 LECTURE REVIEW QUESTIONS
- START LAB #22: VERTEBRATE ANATOMY & PHYSIOLOGY: FETAL PIG -- FOCUS ON THE DIGESTIVE SYSTEM AND THORACIC & ABDOMINAL ORGANS
DNA BARCODING & PHYLOGENETICS LAB #26 LAST STEP: GEL ELECTROPHORESIS
- LAB #23: VERTEBRATE REPRODUCTION, DEVELOPMENT & EMBRYOLOGY AND HUMAN REPRODUCTION & DEVELOPMENT MOVIE: "AN EVERYDAY MIRACLE"
- PHYLOGENETIC METHODS & TREES ASSIGNMENT

15	DEC 4 - 10	Animal Adaptations & Physiology: Immune Systems: Innate vs. Adaptive to Humoral vs. Cell-Mediated Immunity and Animal Adaptations & Physiology: Nervous System: Neurons & Nerves to Animal Toxins and The Human Brain **READING ASSIGNMENT = CHAPTERS 33 & 35 and for lab: REVIEW AND PRACTICE FOR LABORATORY PRACTICUM #2**



ASSIGNMENTS FOR WEEK #15:

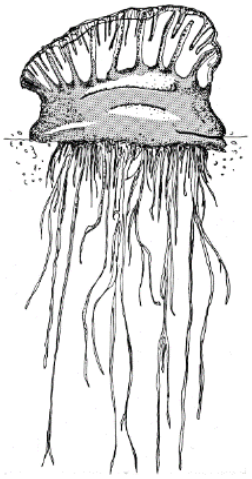
- FINISH LAB #22: VERTEBRATE ANATOMY & PHYSIOLOGY: FETAL PIG -- FOCUS ON THE URINARY SYSTEM AND THE BRAIN **&**
REVIEW FOR LABORATORY PRACTICUM #2: DEUTEROSTOME/VERTEBRATE ANATOMY & TAXONOMY
- **LABORATORY PRACTICUM #2: INSECTS TO MAMMALS**
- FINAL STUDENT & SOTL SURVEY FOR BLAKE

I WELCOME AND ENCOURAGE YOU TO ASK ME QUESTIONS DURING LECTURE

FINAL EXAMINATION:
MONDAY, DECEMBER 11TH
IN EBS 309 FROM 8:00 AM TO 10:00 AM

GRADE POLICY IS ON THE NEXT PAGE

Be sure to read the last page of this syllabus regarding the Student Learning Outcomes (SLOs) for Biological Sciences 102



POLICY ON GRADES - READ THESE PAGES VERY THOROUGHLY AND CAREFULLY!

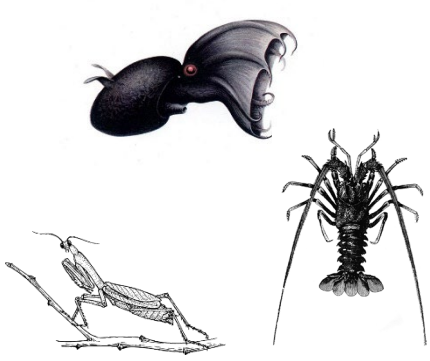
As we progress through the course and you complete each of the exams, quizzes and assignments, you will accrue points towards a final letter grade for the course. **Specific letter grades will not be given after each exam or quiz, but you will receive a percentile score and I will give you a general idea of where you stand in the course after each exam with reference to the rest of the class.** Generally, I have found that letter grades given for each exam can be misleading for some students. Often students will attempt to "figure out" their grade based simply on the letter grade they received for each exam or assignment (e.g. "I got an A on one test and a C on another test, so I probably have a B"). Since your course grade is based on your cumulative score for all your work, this can be an inaccurate method of determining your true course grade (although you may have a B, your cumulative percentile may be closer to an A or a C). Additionally, by giving letter grades for each exam, the focus tends to be on "getting the grade" instead of learning the subject matter. I will do everything in my power to prevent this learning from becoming an arduous and boring task for you, but it does require serious, diligent, and studious effort on your part. Your percentile score on each exam is a more accurate depiction of how much of the course material you truly understand and have learned.

It is important that you realize that your grade is the result of your learned performance on the exams, quizzes, and assignments. Some students may understand the material very well, but perform poorly on any particular exam while other students may not have a complete grasp of the information and perform more adeptly on a particular exam. I can only evaluate you and assign grades based on your "performances" for each of the exams, quizzes, and other assignments. I make every attempt to grade fairly and impartially. **Each exam will include some objective (scantron) type questions, but most (typically about 75%) of the exam questions will be of the fill-in-the-blank or short answer or diagram drawing/labeling/interpretation type.**

A student who earns an **A grade** has performed excellent, exemplary work and completed all course assignments, while a student who earns a **C grade** has performed only adequate work in the course but still completed all course assignments. A student who earns a **B grade** has performed well in the course and completed all course assignments, while a student who earns a **D grade** has performed inadequate work, but has shown effort and completed most course assignments. An **F grade** is earned when a student performs at an unacceptably low level usually due to a poor attendance record, lack of diligent study effort and study time and/or incomplete course assignments.

THE FOLLOWING SCALE WILL BE USED FOR DETERMINING FINAL COURSE GRADES:
Anyone who earns above 90% in this class is guaranteed an A- or higher grade. Anyone who earns above 80% in this course is guaranteed at least a B- grade or higher. Likewise, any student who earns at least 65% in this course is guaranteed at least a C grade. **Do not allow yourself to settle for merely passing this course, each of you deserves the best grade that you can achieve. Come talk to me if you are finding yourself lost, confused, overwhelmed, bored or scared about your grade or any of the information presented at the earliest possible sign that you are having difficulty.**
Remember that for most of you this is information that you will utilize in your future careers on a daily basis.

GRADE	TOTAL OVERALL PERCENTAGE
A+	98% - 100%
A	93% - 97%
A-	90% - 92%
B+	88% - 89%
B	83% - 87%
B-	80% - 82%
C+	78% - 79%
C	65% - 77%
D	55% - 64%
F	0% - 54%



ATTENTIVENESS TO YOUR STUDIES – "ATTENDANCE": **WHILE ATTENDANCE IN THE TRADITIONAL SENSE WILL NOT BE TAKEN, YOUR ATTENTIVENESS TO YOUR STUDIES IS OF THE UTMOST IMPORTANCE. WE WILL DISCUSS THE FORMAT OF OUR FACE-TO-FACE LECTURES AND LABS, THE ONLINE CONTENT YOU ARE RESPONSIBLE FOR, MY PREFERENCES, YOUR CONCERNS, ETC. AT OUR INITIAL LECTURE AND LAB MEETINGS DURING THE FIRST WEEK OF CLASS. Attendance of lecture and lab is <u>not</u> optional and participation in the course will be the first criteria considered when determining "borderline grades".** Keep yourself on a regular schedule and I expect you to be fully prepared to attend and learn from the lectures and labs each week. Parking on campus will likely be a returning (post-COVID) challenge for you to some degree this semester.

In my experience, those students who do not attend class are the students who do not fulfill their potential regardless of their level of understanding. Medical, legal and other scheduled appointments should not be scheduled during lecture or lab meeting times or on EXAM DAYS <u>these will not be considered as excused absences.</u> Medical or personal emergencies will require a written notice of the specific problem signed by an appropriately qualified individual.

***CHEATING*:** Absolutely no form of academic dishonesty or plagiarism will be tolerated. **YOU WILL TAKE YOUR ASSESSMENT EXAMS AND SOME LAB QUIZZES ON PAPER IN THE TRADITIONAL WAY OF FACE-TO-FACE CLASSES AND I WILL PROCTOR YOUR EXAMS.** You will be submitting your paper to Turnitin.com and I will explain my expectations relative to ChatGPT and AI usage (it must be minimal). In the online environment, student cheating is a constant and growing problem. It is unethical, unfair, and a violation of your own intelligence. **<u>Anyone caught cheating will be subjected to the most severe academic penalties</u>. More than ever, most academic institutions and professors are acutely aware that this is a serious and unfortunately all too common issue in society in general.**

***MAKEUP EXAMS*:** There will be no makeup exams except in the case of death/illness of a family member or death/illness of you. If you are sick, a written medical excuse will be required. It is your responsibility to make sure that you have no conflicts in your exam schedule. The final exam time is set by campus policy beyond my control and the lecture exams are all scheduled during regular lecture hours. In the case of some unforeseen personal crisis, a makeup will only be granted with my consent.

EXTRA CREDIT ASSIGNMENTS: Put simply, do not rely on this! There will be some extra available points here and there on some assessments and additional assignments. **DO THE REAL WORK**! Stay focused and put an effort into your studies early on and you won't care about extra credit. If you are having trouble in the course, you certainly don't need more to study – which is what extra credit entails!

WITHDRAWAL AND YOUR CONCERNS ABOUT YOUR GRADE:

September 9 is the last day to drop the course and receive a refund. The last day to withdraw from the course (<u>without a refund and with a "W"</u>) is **October 27**. **December 8** is the last day to petition for Pass/No Pass status. **AS BIOLOGY MAJORS, MOST OF YOU <u>CANNOT</u> TAKE BIOLOGY 102 P/NP. IF YOUR ARE CONCERNED ABOUT YOUR GRADE, PLEASE COME TALK TO ME AT THE EARLIEST POSSIBLE TIME SO THAT WE CAN DISCUSS YOUR OPTIONS. It is to your great advantage to discuss with me (I don't bite!) any problems you are having early in the semester so that I can try and assist you as much as possible. If you do decide to withdraw, please tell me so that I will be aware of what happened to you and remember <u>IT IS YOUR PERSONAL RESPONSIBILITY TO OFFICIALLY WITHDRAW SO THAT YOUR TRANSCRIPT RECORD WILL NOT BE ADVERSELY AFFECTED.</u>**

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES (DSPS): Disabled Student Programs and Services (DSPS) coordinates all academic accommodations for students with documented disabilities at Santa Barbara City College. If you have, or think you might have, a disability that impacts your educational experience in this class please contact DSPS to determine your eligibility for accommodations. DSPS is located in the Student Services (SS) Building, Room 162. Their phone number is 805-730-4164. If you are already registered with DSPS please submit your accommodation requests via the ***'DSPS Online Services Student Portal'*** as soon as possible. Once submitted and confirmed please visit with me about your specific accommodations. Please complete this process in a timely manner to allow adequate time to provide accommodation. Contact Blake by email to barron@sbcc.edu if you have questions or concerns about your status.

I WELCOME AND ENCOURAGE YOU TO ASK ME QUESTIONS DURING LECTURE

PERSONAL DISCUSSIONS IN LECTURE: **You will not text message on your cell phone during lecture, it is a distraction that you do not need.** When you ask me questions, I will listen intently and provide you with the best possible answer that I can. I expect the same level of respect from you. I encourage you to discuss the material with your classmates during lab and outside of class, but please be courteous AND DO NOT TALK AMONGST YOURSELVES WHILE I AM LECTURING AS IT IS VERY DISTURBING TO THE STUDENTS AROUND YOU.
Student discussions during labs, sometimes in lecture and outside of class are required and encouraged.

IMPORTANT NOTES REGARDING THE ANIMAL BIOLOGY LABORATORY:

1. **LAB MATERIALS:** The lab will make use of many SBCC museum specimens, live animals, models, charts, and other lab materials. These educational aids are very expensive and some of them are irreplaceable, thus, you must be careful when handling them. **YOU MUST NOT REMOVE ANY MATERIALS FROM THE LAB**. **ANYONE WHO REMOVES MATERIALS FROM THE LABORATORY WILL BE DROPPED FROM THE COURSE.**
You are allowed to touch most of the specimens and live animals as long as you are careful.
You will NOT poke, injure, or similarly mess with the live animals in an inappropriate manner.

2. **LAB QUIZ FORMAT**: The lab quizzes will cover material discussed and studied during previous laboratory sessions. Generally, these will be short answer types of questions with some multiple choice or fill in the blank questions. **DO NOT DISMISS THE LAB QUIZZES, STUDY FOR THEM WELL AND REGULARLY AS THEY ACCOUNT FOR 260 POINTS AND ABOUT 14% OF THE FINAL GRADE, ABOUT THE EQUIVALENT OF TWO EXAMS.**

3. **All laboratory quizzes will count toward your total course grade, no lab quizzes will be dropped. You will have a limited amount of time to complete each quiz that will vary depending on the length of each lab quiz.**

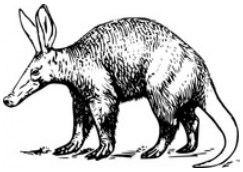
4. **You will submit all of your labs directly to their appropriate place in the ASSIGNMENTS section of CANVAS.** Note that **TWO labs are due each week** as per the due dates indicated on CANVAS AND THE COURSE WEBSITE. Labs will always be due by 11:59 pm on the due date. Failure to submit lab assignments on time will result in a point deduction.

5. **If you decide to stop taking the course, it is your personal responsibility to be sure that you drop the course with the Admissions & Records office before the drop deadline so as not to adversely affect your academic record.**

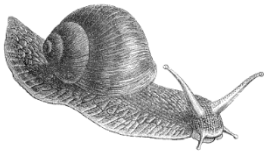
6. **In addition to the labs, there are also be weekly homework assignments and/or SIMBIO digital lab that will be due each week. See the schedule above, the course website and announcement e-mail each week for details and due dates.**

BELOW IS ONLY IN CASE WE NEED OR WANT TO USE ZOOM FOR ANYTHING FOR OUR CLASS:
– OUR CLASS DOES NOT NORMALLY MEET ON ZOOM – WE MEET FACE-TO-FACE –

ZOOM AUDIO & VIDEO: **Clearly in the online/Zoom/Google Meet world everyone is adapting to, there will be the occasional audio interruptions from the world around you, but please minimize this as much as possible. If you are not speaking or asking a question, PLEASE MUTE YOUR ZOOM MICROPHONE WHEN YOU ARE NOT SPEAKING.**



Student Learning Outcomes
Biological Sciences 102 – Animal Biology



After successful completion of this course, a student will be able to:

1. Summarize the fundamental molecular, cellular and ecological principles critical to an understanding of zoology including the structure and functional importance of biomolecules, cell membranes, cell organelles, the importance of water to life on Earth, the general physical characteristics of animal habitats (biomes, marine zones, etc.) and the basic ecological relationships between animals and the environment.

2. Define the theory of evolution and articulate the fundamental role that evolution plays in the adaptation of animal species including the correlation of genetics to the evolutionary continuity and diversity of life.

3. Characterize and differentiate the structural and functional characteristics of the major animal phyla and explain the major evolutionary changes that have occurred in these animals including a description of the fundamental anatomy, physiology and ecology of animals as they relate to their habitats, life histories and phylogenetic relationships.

4. Recognize, identify and classify animals to their taxonomic class or subclass.

5. Perform animal dissection and selected microscopy techniques.

6. Research and prepare a cited written report in a standard scientific format based on a search and evaluation of the literature data.