

COMPARATIVE VERTEBRATE ANATOMY

BIOLOGY 260 -- 261

Course Syllabus

This course in Comparative Vertebrate Anatomy is designed to fill the needs of students in the life sciences who wish to develop a truly solid knowledge of the functional morphology of vertebrates in general and humans in particular. This includes premedical and pre dental students even if they are majoring in a field other than biology. The material covered is specifically intended to be of direct and meaningful value to students as they prepare for the specialized study of human anatomy in professional schools. Many medical and dental schools (the University of Detroit Mercy School of Dentistry, for instance) specifically recommend that a course in comparative anatomy be included as a part of the preprofessional curriculum. However, a knowledge of the structure of higher animals ought not be limited to students in the health sciences; everybody attracted to any area of biology should find this course to be interesting as well as challenging..

Human anatomy is, in an anthropomorphic sense, the end product of vertebrate structural evolution. As such it very clearly reflects the morphology of other members of Class Mammalia, and in particular of fellow members of Order Primates. And mammals in turn reflect the morphology of those reptilian ancestors from which they evolved hundreds of millions of years ago, back before Class Reptilia first began to diverge into the impressive and dominant forms which ruled during the Age of Reptiles.

Although almost everybody finds human anatomy of interest, we in this course do not merely ask ourselves *what* the anatomy of humans is, but *how* it came to be what it is...what accounts for the seemingly confused and bewildering nature of human structure as we find it. This means that in this course we will be taking a panoramic sweep of the evolution of vertebrate structure, rather than concentrating only on human structure in its present form.

In studying anatomy most students find that some material is learned in a laboratory setting more effectively than it is in a lecture setting. Consequently the course has, as it were, been split into two parts, BIO 260 (lecture) and 261 (laboratory). The laboratory is not simply a re-statement of material discussed in lecture, although a significant overlap is to be expected. Both parts together make up what is in essence a single course; consequently a student withdrawing from one part must at the same time withdraw from the other part. It makes no sense to try to take an anatomy course without the laboratory; to attempt to do so would be like taking a computer course without actually touching a computer. The listing of BIO 260 and 261 as separate courses with separate grades avoids problems that would otherwise occur with a single five-credit course.

A solid understanding of the fundamental aspects of higher animal structure as presented in General Biology courses is essential. It is assumed that an appropriate review of these parts of general freshman biology will be made by each student. Material presented in such courses as histology, embryology, or physiology are not prerequisite for BIO 260-261; however, any experience with courses such as these is of value for the better understanding of comparative vertebrate anatomy.

BIO 260 IN PARTICULAR

The formal lectures which serve as the basis of BIO 260 will be geared to students who have already prelected the textbook material as assigned, and have studied the notes provided. Each of the five examinations will be worth 18% of the grade. The remaining 10% will be based on attendance at and involvement in lecture presentations and discussions. There will not be any written reports or term papers in this course.

It is taken for granted that all will be present for the examinations on the days scheduled, unless there occurs a very serious problem. If, however, this does in fact happen, then the instructor is to be notified before-hand. Consequently, there are no so-called "make-up" examinations given merely at student request. The instructor does reserve the right to require a make-up examination of all or some of those who missed the regular examination. In keeping with tradition as well as justice to all the other students, such a make-up examination will be somewhat more rigorous than the regular examination. The final examination in April will be required of all.

In the determination of the grade for the course, a score of ten percentage points less than the average of the student's other examination scores will be given for the first examination missed; twenty points less will be given for the second missed examination, etc. Thus a student who misses one of the five examinations during the semester will receive for the missed examination a score of ten percentage points less than the average of his or her other four examinations. Note that the point reduction is based on the individual student's scores, not on the class average for that examination. This in effect means that the actual course grade for a student who missed an examination cannot be determined until after the final examination in April.

All examinations will be corrected and returned just as soon as possible, usually within a week. Any errors in grade computation, should they happen to occur, must be called to the instructor's attention promptly and not postponed until a later date when the course is about over.

BIO 261 IN PARTICULAR

BIO 261 is designed to complement BIO 260. The laboratory is not merely a series of exercises to illustrate principles treated in lecture, as happens with some other lecture/laboratory combinations. Some material to be treated in the laboratory sessions will not be discussed at all during lecture periods, or it will be given only minimal consideration. It is simply taken for granted that the laboratory work will be correlated with the lecture material by the individual student, and that any appropriate textbook study will be carried out as necessary.