Biology 41 - Course Syllabus

- Zoology -

This syllabus [Full Version] contains all pertinent information about the class. Its purpose is to make your life easier and to give you an idea about the format as well as the requirements of the course. Keep it accessible in your binder and refer to it when you have questions about the class.

Make sure to read it before the next class meeting.

Your Instructor: Peter Svensson
Office Hours: Mondays between 9:55-10:55am and and Tuesdays between 10:30am-12:30pm in room SM 23B [next to the zoology lab at the end of the long indoor hallway [perpendicular to the main hallway] in the Science/Math building]. (These hours may change.) Use this time for asking questions, to obtain guidance and to get help with the class. The students who take advantage of office hours to ask questions about the material they are learning usually do better in the class. I am one of the many resources available to help you succeed in your studies in zoology at WVC. Use these hours!

Messages: The best way to contact me is via e-mail. My voice mail is (408) 741-2558. I have a mailbox in SM1 in case you need to drop something off.

E-mail: Peter_Svensson@westvalley.edu
Web Site: http://instruct.westvalley.edu/svensson [follow the link to Biology 41/ Zoology].
Lecture: The lectures take place on Tuesdays and Thursdays between 12:30 -1:55pm in SM30.
Labs: Tuesdays and Thursdays between 2:05 - 5:15pm in SM23.

Biology 41 is five unit class acceptable for credit at the California State University as well as the University of California.

Zoology: Animals are found all across the world from the depths of the ocean, across the continents as well as high up in the air. Animals have managed to survive in the extreme temperatures and aridity of the deserts to the numbing cold of the poles. The amazing diversity of animals continues to astound us. This majors course will give you an opportunity to study the field of animal biology in depth. After a fundamental excursion into biodiversity and evolution we will venture into a survey of the enormous diversity of invertebrates and vertebrates on our planet. Their evolutionary relationships, taxonomy, structure and basic physiology will be covered. At the same time we will integrate a comparative approach on how different animal taxa have solved physiological problems in both the aquatic and the terrestrial environment (e.g. gas exchange and excretion). Current topics related to organisms and the environment will be integrated into the course throughout the semester. In addition you will participate in several field trips. You are expected to attend all lectures and laboratory sessions.

Dissections: Many of the labs in this course contain a dissection component. It is pertinent that you understand that you will be required to participate in these dissections as part of the course requirements. As a biology student you need to get used to the fact that the field incorporates the study of both living and preserved specimens. The dissections are not the main focus of the course, but are an important tool to build an understanding of animal body plans, their structure as well as their
function. Participation in these exercises improves your ability to structurally compare different groups of animals and their evolutionary connections. It is paramount that you are observant and practice your ability to ask questions about animals as you carefully dissect your assigned specimens.

**Thoughts from students of the past:** On the web site I have posted comments from students that took this class in the past. Their words may serve as useful advice as you prepare yourself for the semester. Try to read their comments before next class.

**Required Materials:**
These can be purchased directly in our bookstore or from the internet via the links provided on the Biology 41 web page. I have made links directed towards sites selling used copies. Make sure to visit these links. Books are expensive and it is worth the time to consider your options as a student. You can save a considerable amount of money (up to $200) if you take advantage of these options (used copies).

- **Textbook:** Hickman/Roberts/Larson/I’Anson: *Integrated Principles of Zoology* 13th edition (2006), McGraw Hill. This is the core text as well as your main resource in the class and will accompany you many late nights. Feel free to purchase any of the two previous editions (12th & 11th) which can be found at very low prices. They are almost identical to the 13th edition for a fraction of the price. If you use the 12th/11th edition you are responsible for any differences between the two texts.
- **Laboratory Manual:** Lytle: *General Zoology Laboratory Manual* 14th edition (2004), McGraw Hill. Bring this well-written manual to lab. We will explore most of the exercises in the manual, which contains a wealth of information. The many drawings and photos will aid you as you explore the different animal taxa. Older editions of this manual will serve you just as well as the new one.
- **E. O. Wilson:** *The Diversity of Life* (1992). Wilson has brought the concept of biodiversity into the public sphere of awareness. How many species exist on our planet? Are they of any importance?
- **Richard Dawkins:** *The Ancestor’s Tale* (2004). A fantastic journey in which Dawkins brings the reader back through time to “visit” connection with other species on our planet.
- **Rosso/Ulhausen:** *Pacific Intertidal Life*. A treasure with lots of information about the invertebrates that live in the intertidal zone on the Pacific coast of North America. One cannot beat the price (a couple of dollars). In addition, it fits well into your back pocket and is needed on your intertidal field trip.
- **A Notebook/Journal** (you will need to keep a journal throughout the semester – see information on page 5). A large format bound journal with blank pages [300 pgs] (often referred to as sketch books) is the required format. The bookstore has one type in stock (not quite large enough for the required work). Borders (in particular) often carry these items on sale.
- **Scantrons** (5) – Form # 882-ES [with 50 questions on each side].
- **Color pencils** (for sketches in your labs as well as in your lecture notes – a set of six will do).
- **Pencils (#2), pens, erasers, a ruler, notepaper and a binder.**

Make sure to bring the laboratory manual and your journal to each lab.

**Recommended Materials:** (these are not mandatory but could be helpful in your studies)
These are not available in the bookstore, but most of the items can be found online (e.g. amazon.com and other sources)

- Van de Graaf: “Photographic Atlas for the Zoology Lab” – This book contains a wealth of different photographs and micrographs that are very similar to the ones you see in the lab exercises. Recommended for reviewing information before the lab exam.
- Elson: “Zoology Coloring Book”. Lots of great diagrams that you can use in the class. This is the perfect study tool if you enjoy graphics and coloring.
- Carl Zimmer: Evolution – The Triumph of An Idea (2002). A complement to your textbook that will enhance the theme of evolution that runs throughout the course.
- Elizabeth Royte: The Tapir's Morning Bath (2002). An interesting book focused a visit to Panama’s Barro Colorado Island and the research that is taking place there. I am sure that you often wondered about what biologists are up to in the field? Read this book and find out!
- We will be using insect nets for the insect collection this semester. The department has a set of nets available for check out on a rotating basis. In case you would like to buy your own insect net you can get one for about ten dollars at www.bioquip.com. The minimum purchase at the site is $20, so you will need to team up with one or more students if you would like to pursue this option. Ask me in case you would like to look at their catalog. I make this option available to you since it sometimes gets cumbersome to check out and check in the available nets.

Computers: This class takes advantage of the outstanding resources provided by the internet. You will access resources on the web as well as communicate with the rest of the class via e-mail. You can access campus computers in the library or in our technology center (or your home of course). A low fee of about $5/semester [subject to change] gives you access to all the resources at our technology center (computers, printers, scanners etc). Make sure to bring your student ID card as you sign up in the center. It is highly recommended that you take advantage of these resources to help you succeed at WVC.

E-mail: If you already have an e-mail account you are set. If you do not have an e-mail account you can sign up for one for free at several web sites. These are some examples of sites that provide free e-mail. Just sign up! There are many more providers (just do a search for free e-mail on www.google.com). Examples:

The World Wide Web: You can access my instructional web page at http://instruct.westvalley.edu/svensson

On the page you can access a link devoted towards our Zoology class (please bookmark the page in your browser). The site will be updated continuously throughout the semester. These pages will contain information about the class, assignments, links to resources and other pertinent material. Study questions will be available on the site. View, copy or print them at home, at the library or at the Technology Center.

Textbook Support on the web: Read the resource page on the class web site. If you have internet access it is highly recommended that you use the excellent zoological support that is provided at the following URL: http://highered.mcgraw-hill.com/sites/0072830565/student_view0/.

The support includes reviews of each chapter, quizzes, flash cards as well as links to many interesting and amazing biological web sites. I recommend the following URL for the lectures on ecology and evolution: http://www.whfreeman.com/thelifewirebridge2/

Hopefully these resources will aid you throughout the semester. Please bookmark these pages in your browser.

The Biology 41 Listserv: As part of the class you are required to join the Biology 41 listserv. You will earn 20 course points by enrolling on the listserv. However, you will need to do so by Friday February 3 at 11 pm. To do so you will need an e-mail account (of your choice – see below). You can sign up for the listserv via a link on the Biology 41 instructional web page. After doing so you communicate directly with the whole class by sending e-mails from your regular e-mail account. You can also post or check messages directly on the bulletin board, but it is easier to just send out regular e-mails. I continuously send out information about the class and current events linked to zoology on the listserv. The initial password can be found on the core syllabus given out on the first day of class.

The Class Room: Please follow these rules to enrich your lecture experience:
  o Be an active participant in the class. Zoology will come to you much more easily if you prepare for class (lectures and labs).
  o Arrive and leave on time. It is disruptive for all the students in the class to have other students arriving late or leaving early.
  o Our lecture halls are cell phone free environments. Turn off the ringers on pagers and cell phones. Do not take or make calls in the lecture hall nor lab.
  o Do not talk in class unless you are participating in an instructor initiated discussion or are asking direct questions about the material.
  o Make sure to record your attendance during each lecture.

Important Exam Dates: It is YOUR responsibility to keep up with the class, turn in assignments as well as to take the exams on the specified dates. Look at your Biology 41 schedule for other important dates. It is your responsibility to follow the deadlines posted by West Valley College. If you do not notify admissions/records you can end up with an 'F' as a final grade. Exam dates are not negotiable. Record the following dates in your planner or schedule:

| Exam 1 (120 pts) | Tuesday Feb 28 |
Exams: Written exams will consist of multiple choice questions, figures as well as essay questions. The first three exams (120 pts each) are not cumulative. The final exam is worth 180 pts. You will also take four visual tests during the semester. In these test you will need to recognize different animals and the taxa they belong to. If you for some important reason miss an exam you will need to notify me within 24 hours by phone (408 741-2558) or via e-mail. If you fail to do so you will not be able to make up the exam. There will be no make-up exams unless you have a valid documented reason (e.g. medical emergencies etc. [e.g. vacations or dental appointments do not qualify]). Do not make appointments or plans (including vacations) that conflict with your scheduled class hours. During your exams you are only allowed to use your pencil/pen unless instructed otherwise. You cannot use dictionaries, calculators, walkmans etc. unless you have received special permission. Hats/caps need to be removed during the exams.

Assignments: There will be a number of assignments given to you throughout the semester. These assignments are due on a given date and time. Late assignments will not be accepted. Follow the deadlines for the assignments. Plan ahead!

Point Distribution

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Lab Journal (60 + 120 +120)</td>
<td>300 points</td>
</tr>
<tr>
<td>Insect Collection</td>
<td>130 points</td>
</tr>
<tr>
<td>Field Trip Assignments (Intertidal &amp; MBA in journal[2x30])</td>
<td>60 points</td>
</tr>
<tr>
<td>Written Assignments (2x30, 1x20)</td>
<td>80 points</td>
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<tr>
<td>Listserv</td>
<td>20 points</td>
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<tr>
<td>Presentation</td>
<td>60 points</td>
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<tr>
<td>Visual Tests (1x20; 2x40; 1x60)</td>
<td>160 points</td>
</tr>
<tr>
<td>Exams (3x120)</td>
<td>360 points</td>
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<tr>
<td>Final Exam (180)</td>
<td>180 points</td>
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<tr>
<td>Total points possible:</td>
<td>1350 points</td>
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</table>

Grades: The grade is based on the number of points you accumulate during the semester.

Grading Scale: A 90-100%; B 80-89%; C 65-79%; D 55-64%; F < 55%

Keeping track of your grades: Approximately once per month (after each exam) I will post a score sheet on the web as well as on the bulletin board outside my office so you can get an idea of how you are doing in the class. I do highly recommend that you keep track of your own grade during the semester by recording the scores you receive as well as the highest score possible. With those figures you can easily calculate your percentage. The scale above will give you your current grade.
Cheating: is not tolerated and is unfair to the other students in the class. Cheating includes plagiarism (copying material from a source, e.g. a book or the web), looking at another student’s exam/scanner, using notes or talking/whispering during an exam. Plagiarism is a serious and common problem. Do not copy any sentences or paragraphs from any source into the pages of your written assignments. The copy/paste function of your word processor is a fantastic tool. However, write your own papers/assignments. The student will be reported to the chairman of the division, and the incident will be recorded in the student’s permanent record. A student found cheating will immediately be dropped from the course and receive an ‘F’ as a final grade. Read this section one more time. It is essential that you understand the consequences of this class policy. I will fail a student found cheating in my class or on any of the course assignments.

The Lecture Component: The lecture introduces and covers an array of zoological topics from evolution, ecology and biodiversity to the structure and function of organisms. Take good lecture notes and read the accompanying chapters from Hickman’s text to master this aspect of the course. It is important that you are an active note taker. The process of note taking keeps you alert and focused on the main components of the lecture. A student that just sits back and “enjoys”/“suffers through”/“absorbs” the lecture is likely to not remember much of the material when the exam is coming up a few weeks later. Even if you do not study your notes at a later date the activity of taking them helps you to learn and comprehend the material. Personally I find notes to be a useful tool to actively learn material as I am making them and an excellent review in preparation for the exams.

The Laboratory Component: This is the time when you are expected to actively explore the different types of animals we are covering in the course by examining specimens, performing dissections as well as by watching some outstanding films. It is important that you are organized, creative and observant during the labs. Make sure to take advantage of the time allocated to the study of the animals. The more time you spend with the material the more you will learn. In my experience there is a direct relationship between a good grade (A/B) and using the time allocated in lab. The laboratory component accounts for almost 50% of your grade and is required. If you are absent from more than six laboratory exercises without being excused you will be dropped from the class (and possible receive an ‘F’ as a grade depending on when this occurs during the semester. Missing a lab will strongly affect your journal entries (see below) as well as your exams. I expect you to be an active participant in the laboratory exercises. Labs take place between 2:05-5:15pm. I usually take roll towards the end of the laboratory. If you are not present at that time you will be considered absent. Six absences results in the student being dropped from the class.

The Journal: You will be asked to keep a journal in zoology (see separate handout/download). There are no formal lab reports in this course. The journal covers both the lecture and the laboratory components of the course with an emphasis on the laboratory exercises. I require a large format bound journal with blank pages (often referred to as sketch books) since they allow you more creative flexibility. In your journal you are expected to record your observations during
each lab, field trips as well as between classes/lectures. These observations can be "pure" observations in a written form, sketches, labeled drawings, thoughts, questions, and ideas. I would like to emphasize that the journal should be composed during class hours as well as between classes. Keep it in your backpack and write in it when you have the time. It is a good rule to schedule 20 minutes each day for writing/drawing reflections in the journal. The time used to prepare a "standard lab report" (in e.g. chemistry) should be allocated to each lab in zoology. Most students spend at least two hours on each lab outside of class. However, you have a "free" format to work with in this class. Keep in mind that the journal is not a class notebook (for lecture). Take a look at the examples provided at the beginning of the semester (past student journals).

Feel free to add information from any source at any time (you may copy drawings but do not plagiarize the written word). It will become an extremely useful study tool as well as an indicator of how well you record information. Most importantly, it will mirror your reflections on the amazing world of animals. Occasionally students have a difficult time to compose the journal (i.e. what am I supposed to write?). You should download a separate handout on aspects of journal writing that hopefully will aid you in this creative process.

I will collect and evaluate your journal three times during the semester. The first time you are given a maximum of 60 points, the second 120 points, and finally 120 points. The journal is an important part of your learning experience in zoology.

The Insect Collection: On 2/7 you will be introduced to the project (see separate handout). You are expected to build a minor collection of 50 insect species during the semester. Your collection will be previewed on 4/11 and is formally due 5/4. Insects prefer warm weather so it is recommended that you build the bulk of your collection during February to May. You should get started on this project by mid February. Ideally you will have completed most of the work by the end of April. You will learn to recognize the major orders of insects as well as gain an appreciation of the enormous diversity of this group of animals. You are expected to collect all the insects in local habitats during the current semester (February - May 2006). You may trade insects with other students during the current semester. However, you are not allowed to use insect that have been collected during past semesters or by somebody not currently in the class. If any such specimen is detected in your collection you will fail the project as well as the course.

Field Trips: We will venture out to different sites to explore the natural history of animals. Your first field trip takes place during class time. One of the field trips will occur on a Saturday (3/25 between 12:15-2:30pm – determined by tide level) so please plan for the excursion (see schedule). Talk to me in case you have difficulty making the Sunday field trip. The remaining field trip is an independent assignment. i.e. you are given a due date and need to visit the site before that date (give yourself enough time to write up the accompanying assignment). You will receive information about each field trip in advance as well as a map to the area. The field trip is timed to the content of the class, so do not expect to do this assignment before the material is covered in lecture. You will be responsible for your own transportation as well as any cost related to admission to the site/s. It is recommended that you car pool to reduce fuel emissions into the atmosphere.
Written Assignments: You will be given written assignments during the course. There are two book reports (Wilson’s and Dawkin’s books). You will also need to write a summary of the field trip assignment (see schedule).

Hours by Arrangement: A portion of these hours are allocated towards field trips that occur outside of class hours. In addition to time spent in lecture and lab, weekly hours by arrangement are available for supported study time utilizing tutors and electronic resources. These arranged hours will be made available to the student during scheduled open lab time. Our class has access to such support in rm SM26 on Tuesdays between 10:30am-12:30pm.

Study Techniques: The course will follow the outline of the text. I will work hard to present the material in the class and serve as a resource to you. Unfortunately, I am not taking your exams ☹. You are expected to keep up with the assigned readings. It is a good idea to regard a class and its associated study time in the same way as you would a job [i.e. one shows up on time, leaves on time and do the work one is expected to do in and outside of class]. You will do poorly in the course if you fall behind. I strongly encourage looking over the assigned chapter/s before lecture, and reading it/them as soon as possible after lecture. It is important to take good lecture notes (i.e. to not only copy the board/screen but to actually record keywords, concepts and facts from the lecture). Try to make an outline of the concepts and terminology covered in lecture as you take notes. Make an effort to go over your notes within a day or two. The best setting for such a review is with one or two other students from the class. The students should preferably be at your own level (i.e. equally motivated and interested). Forming a study group is often a key to success in this course. Let me know if you are interested in forming such a group as soon as possible. Contact me in case you have questions about the material and take advantage of the provided office hours.

Earning a Grade:
1. Focus on the fact that you are immersing yourself in the field of zoology for the next 15 weeks. You are in a biology majors class (voluntarily 😊). You now need to put on the shoes and the hat of a budding biology student. Your goal this semester is to establish a foundation in animal biology. How do animals work? How do they interact? Where did they come from? How are they related to each other? View it as a fascinating journey into the world in which we all live and interact!
2. Attend all lectures and labs. Never skip a lecture/lab because you have to complete the journal/assignment etc. Plan ahead! Being a student is not much different from having a job (i.e. you show up to work every day).
3. Be an active participant [listen, take notes and ask questions]
4. Plan your study time
5. Continuously review the material throughout the semester
6. Always turn in your assignments and projects on time. I may not accept late assignments.
7. Ask for help when you need help (each other, the tutors, your instructor)

According to college guidelines, in order to earn a 'C' in the class, one should study two hours for every hour one spends in class [3 hours of lectures per week is equivalent to 6 hours of active and focused studying per week]. The laboratory component adds to the commitment. However, higher grades demand more of an
effort. Gear your time based on the grade you hope to receive. I recommend a time allocation of 12 to 15 hours per week for an A in the class (that is about 1.5 to 2 hours per day). Zoology is a lot of fun but it is also time consuming. We will discuss study techniques during the first week. The following web site contains several useful links in regards to study skills:

http://www.mhhe.com/links/pages/General_Biology/Writing_Papers_and_Study_Tips/

There is also a useful link to different study techniques (reading, note taking, studying etc) on the Biology 41 web site.

**Tutors:** There are tutors available in zoology (for free). Go to the tutorial services center next to the library and sign up. The tutors are students from past semesters. These students did excellent in the class and will be very helpful to you. Take advantage of the services that the college is offering you to succeed in this majors class.

**References in Zoology:** In case you would like to read more about specific animals (or their physiology) covered in the class I have included a few recommendations below. These are great as resources in case you are thinking about becoming a biologist (esp. in zoology or marine biology) or if you need to look something up for the class. They are used in upper division classes in biology across the country. As a consequence they include much more information than we are covering in our course (i.e. treat them as resources).

- **Brusca/Brusca:** *Invertebrates* [Textbook; a huge book about invertebrates that follows a cladistic approach. Lots of information and line drawings]
- **Pearse/Buchsbaum:** *Living Invertebrates* [An old classic with lots of information. More readable than Brusca and tons of black and white photographs. It covers the different phyla in a more traditional manner. However, it is an experience just to view the photos in this book].
- **Pough:** *Vertebrate Life* [the standard upper division text on vertebrates. It is definitely a little dry but very factual as it paints the rich evolutionary and natural history of the fishes, amphibians, reptiles, birds and mammals].
- **Schmidt-Nielsen:** *Animal Physiology – Adaptation and Environment* [Further information about animal physiology in case you would like to read more about how animals handle different physiological problems. The book has a holistic approach and is covering themes such as oxygen, food/energy, temperature, water and movement. A very interesting book but may not always be easy to read (recommended towards the end of the semester)].
- **Willmer, Stone and Johnston – Environmental Physiology of Animals** [A slightly more advanced book about animal physiology than the previous one. Its comparative approach focused on the specific challenges of different kinds of environments makes it very interesting reading. I find it fascinating].

**Recycling:** There are special containers devoted towards recycling glass, plastic and aluminum cans outside each classroom. As a class you go through an enormous
volume of recyclable materials during the semester. There are also containers for recycling paper in the main hallway of the Science Math building. Please use them.

**Special Accommodations:** West Valley College makes reasonable accommodations for persons with documented disabilities. Students should notify DESP (Disability & Educational Support Program) located in the Learning Services building (408-741-2010) of any special needs.

**Counseling:** The college provides free initial counseling sessions for students in need of such services. Feel free to contact Counseling Services in case you are having problems at school or at home (x2009).

**Recycling:** There are special containers devoted towards recycling glass, plastic and aluminum cans outside each classroom. As a class you go through an enormous volume of recyclable materials during the semester. There are also containers for recycling paper in the main hallway of the Science Math building. Please use them!

**Emergencies:** Call 911 (9-911 on a campus phone) for life threatening emergencies. Other important phone numbers are: Student health services (x2222); Safety escort services (x2092).

In case of an emergency in which we need to evacuate the room you should follow the following directions:

- Leave the room through the backdoors
- Head out towards the parking lot (steer to your right)
- Meet at the very end of the parking lot and wait for further instructions.