BIOLOGY 300 FOUNDATIONS OF BIOLOGY  SPRING 2018
Tuesdays  4:00 - 7:05 pm  COURSE WEB SITE: https://canvas.losrios.edu/
ROOM: Davies 114  COURSE NUMBER: 11584  OFFICE HOURS: T 2 – 3 pm, 102 Howard Hall

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 COURSE DESCRIPTION:
Foundations of Biology is a survey of the very broad field of biological science. Instruction and learning activities focus on:

1. principles which are fundamental to understanding both ourselves and the creatures with which we share our world.
2. applying biological principles in everyday life.

Emphasis will be on understanding biology pertinent to making decisions about health and safety, decisions about consumer choices, and citizen decisions as leaders and voters.

EXPECTATIONS:

Attendance:
If you miss one day, you miss three hours of instruction. Most of what we do during class cannot be "duplicated" for one person, or by you at home – at best I will be able to give you materials we used during class. The course assignments are such that having missed some time will not cause you to be at a serious disadvantage, but the mid-terms and finals will cover material discussed during class time. If you are late – even a lot – still come! I'd rather you arrive late than not at all.

Respecting classmates:
Don’t do things that distract others. Turn off your phone, and do not use any form of electronic device during class – this includes laptop computers. If you think you need to use a laptop computer, get permission from me first.

Missed assignments and exams:
All assignments - discussion posts, study aid writings, selection assignment writings, and quizzes - must be completed/submitted on the course web site during the appropriate time period. The letter must be turned in as a hard copy at the beginning of class on the day it is due. A draft report, final report or letter submitted online late will receive only half of the normal earned credit; those submitted after one week will receive no credit. You can miss assignments or midterms without a grading penalty (see Evaluation and Course Grades); however, assignments except those noted above are not accepted late and missed midterm exams cannot be made up. There will be no extra credit assignments.

READINGS AND RECOMMENDED TEXTS:
After class, review and complete your understanding of the topics covered during class through supplemental reading of a text. The readings listed in the calendar are from:


This is an inexpensive physical text that provides clear but limited information. Alternatively, you can access a comprehensive text free online.


Finally, any comprehensive, current college biology text can be used to supplement the
materials provided in class. You will need to skim to find topics, but that should be easy.

**COURSE WEB SITE:**
You will find the course web site to be essential for studying and for completing assignments. The site is part of the "Los Rios Online" Canvas system and each weekly module includes:

- **Study Aid Writing Drop Box.** Submit Study Aid Writings here.
- **Discussion Board.** Participate in online conversations on current or controversial topics in biology by reading and posting on the board.
- **Quiz.** Reinforce learning and practice for exams.
- **Content.** Access all the in-class readings and handouts, so if you want to look ahead, or if you miss a session, you have access to all materials.
- **Assignment Drop Box.** Submit assignments the week they are due.

The site also includes:

- **Grade book.** Check your grades on assignments and tests online anytime.
- **Links.** Handy access to information for assignments is just a click away.

To access your Canvas account and the Biology 300 web page:
Open your web browser and go to [http://www.arc.losrios.edu/Distance_Education/D2L__Canvas_Login.htm](http://www.arc.losrios.edu/Distance_Education/D2L__Canvas_Login.htm)

**Logging in:** As a student enrolled in Bio 300, you already have an account. Your log-in username is your student ID, preceded by the letter w. Your password is your standard Los Rios unified password (the same one as eServices, Los Rios Gmail, etc.).

If you do not have convenient use of a computer with internet access, computers are available on campus at the Library and the Learning Resources Center.

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**EVALUATION & COURSE GRADES:**

**Core Items**
The following core items comprise 80% or 800 points of the possible 1000 points used to determine your final grade, based on the following point allocation.

- Final Exam 300 pts
- Letter assignment
  - 1st draft of report 50 pts
  - Final report 200 pts
  - Letter 50 pts
- Weekly study quizzes 100 pts **Due each week – 100 pts max**
- Weekly study aid writings 48 pts **Due each week – 12 required**
- Weekly discussion posts 52 pts **2 posts each week – 13 wks required**

**Selection Items**

Two more items will contribute the additional 20% or 200 points to your course grade. You may select to use both midterm exams, or your best exam and your best selection writing assignment.

Everyone must take the two midterm exams. But only one must be counted toward the final grade in the course if you have completed at least one selection writing assignment. If you do the selection writing assignments, you must first complete Biology in the News. If you complete Biology in the News and choose to submit a second writing, complete one of the other topics: To Your Health, Personal Impact Log, or Senior Citizen Interview

If you do not submit any selection writing assignments, both midterms will be your "default" selections. It is important for your learning to keep actively engaged with the
material and the course as best you can, therefore you cannot submit selection assignments after they are due, and there are no make-up options, either for exams or writings. Note that if you do not do either selection writing assignment, and then you miss the second exam, you have a problem because you cannot make either of them up. So to keep the greatest number of options available for calculating your grade, and more importantly to maximize your learning, complete the exams and submit selection assignments on time.

What is the best strategy for getting a good grade? If you want the greatest number of options for calculating your course grade, you will take both midterm exams and do both selection writing assignments, and then choose the highest exam grade and the highest of the remaining exam and writing grades to apply to your final course grade.

Course Grade
At the end of the semester, the combination of the two selection items as described above which add the greatest amount to your total grade will be combined with your scores from the core items to determine your final grade.

Letter Grade % of possible points
A 90% - 100%
B 80% - 89.9%
C 70% - 79.9%
D 60% - 69.9%
F less than 60%

Remember, you can check the points you have received for assignments at the course web site.

CORE ASSIGNMENTS:
Weekly Study Aid Writings
This assignment allows you to revisit, and therefore better process, the learning that occurred during class the week before. In each weekly module, submit a Word or RTF format file to the Study Aid Writing drop box. Make it at least one double-spaced page of reflections and observations about both topics covered the previous week during class and related assigned text readings. They will be accepted for only one week; after that, that drop box will not be accessible.

These should not be just your notes or simple statements of fact but, in your own words, the most important things to remember or consider about the topics. Don't only describe what topics we discussed or what the class did, but also why did we cover these topics and do these things? What was the main point or theme? How does everything discussed fit together or relate to each other? How do the readings relate? Comment on what you learned, or what is the most important things to remember from the class session and readings.

You benefit most if your writing is reflective and integrating; if it is merely descriptive, or does not cover the range of topics covered in class, the benefit as a study aid – especially for the final – is limited.

Reflective means you comment on why it is meaningful or significant: integrating means that you connect the week's topics to previous topics or other knowledge you possess, such as material from other classes.

Experience has shown those students who attend class and actively reflect and write on
the class exercises and the text readings do noticeably better on exams. But to reflect you must attend; reading does not suffice. If you missed class, left very early or arrived very late, do not submit.

To accumulate the maximum number of points, submit 12 study aid writings.

**Weekly Response to Discussion Topic**

Reading and responding to other students’ comments will expand and extend the conversations that we begin in class on ethical and other issues directly related to your life. To keep the conversation going, each week I will post to the discussion board a question or comment pertinent to the past week's lesson. That discussion topic will close in two weeks, and then no more posts will be accepted.

Some weeks there will be more than one forum available for posting. You need to post at least twice to any one forum within the two week window for posting. For best learning, post to all the available forums, but to earn the four points for any one week's forums, there needs to be two posts from you in one forum.

Any contribution you make to the weekly conversation by posting a comment or response to the board, or proposing a new question, will be given full credit. Therefore a simple "Me too." or "I disagree." will suffice as one of the two posts necessary to earn you the 4 points per week. Some times that may be all the opinion you have on a topic, but I still want you to share that.

However, being able to convey ideas and opinions informally with peers is a valuable skill to develop, and thinking more deeply about these biological topics will help make you a better decision maker about your health, as a consumer, and as a citizen, which is the main goal of this course.

Some tips on getting the most from this assignment are on page 12 of this syllabus.

To accumulate the maximum number of discussion points, complete **two** discussion posts in any one weekly forum for each week for thirteen weeks.

**Weekly Study Quizzes**

After a week has gone by, that is, after the end of the next class, a study quiz will be available on the course web page. Yes, this means you have to think about the material that was from the previous week! It will be available for one week, then will no longer be accessible, so you must complete it in the proper time period. This will help you to keep a steady focus on the topics of the course, and not wait until the test to review.

Everyone should be able to get the full 100 points possible from the quizzes. There are more than 100 questions for the entire course, so you can miss some and still get all the possible points. They are generally easy questions that focus you on important terms, principles and ideas. They are not like the in-class tests, but if you can answer the quiz questions, you are well on your way to doing well on the midterm exams and the final.

To accumulate the maximum number of points, complete at least 100 questions correctly over the span of the whole course.

**Letter Assignment**

This assignment is to investigate a biological topic of interest to you, and then to apply your knowledge in a way that may result in real-world change. You will write a convincing and knowledgeable letter to either a government official or agency, an advocacy organization such as the American Cancer Society or Sierra Club, or to a private organization such a Procter and Gamble or Exxon Oil Co.

This assignment has three parts. First you gather the information and compile it into a
draft report. This report is not written in the form of a letter – it addresses the biological topic only and does not include your personal opinion or recommendations for action. It is similar to any report you might do for another course. For the second part, you revise your draft to produce a final report that is accurate and knowledgeable. Finally, based on your knowledge developed in completing your report, you craft a persuasive letter.

Your draft report must:
1. include a statement separate from the report text that in general indicates to whom the letter will be addressed, and one or two sentences why the issue or problem of a biological nature is pertinent to the recipient of the letter. For example, "My letter will be to the Superintendent of the National Park Service about the management policies for bears in camping areas because she has the responsibility ...",
2. introduce the topic(s) and provide a reasoned and accurate explanation of the biological science involved. Your draft must present the general organization and structure of your anticipated final report, and a significant proportion of the content to be included in the final report. However, the draft will likely not be complete in terms of information. For example, you may include statements such as "Here I will get more information on the ..." It is expected that you will change and improve your draft for the final report.
3. list fully and accurately references from at least two different sources that were used. See Biology in the News, number 1, on page 6 of this syllabus.
4. be at least 1000 words in length, double spaced (4 pages). Save your report as a Microsoft Word document or RTF format file. Submit the report at the course Dropbox.

Your draft will be read and commented on by students – bring to class a hard copy of your draft on the day it is due.

Your final report must:
1. include significant improvements and/or additions to content when compared with the draft. Respond to the comments made by both me and your student colleague who reads your draft, and your own developing ideas. Use this as a time to also look at writing basics – word choice, sentence structure, paragraph construction, order of presented ideas.
2. be accompanied by a brief statement describing changes done to the draft and reflected in the final report.
3. be at least 1000 words in length, double spaced (4 pages). Save it as a Microsoft Word document or as an RTF format file. Submit the complete final report at the course Dropbox.

Your letter must:
1. be a letter – a communication between you and the recipient, written in appropriate letter format, and be accurately addressed to a real person. Do not just place a salutation at the beginning of your report and a signature at the end - it will be marked down significantly. See http://owl.english.purdue.edu/owl/resource/653/01/ for a good description and samples of the business letter.
2. introduce the issue or problem of a biological nature and address why it is pertinent to the recipient of the letter.
3. provide a reasoned and accurate explanation of the biology involved.
4. include your personal position and specific recommendation(s) for action.
5. be at least 500 words in length, typed, but not much more. If too long, it will not be read.
6. request that the recipient respond, and include your complete mailing address so that he or she may do so.
7. be saved as a Microsoft Word document or an RTF format file. Submit the file at the course Dropbox.
8. ALSO be turned in as a signed hard copy letter accompanied by a stamped #10 standard business size envelope addressed to the letter recipient because your letter will be mailed.

An effective letter – your letter – should include the following:

- an opening that makes your topic and interest immediately clear. Do not start with "My name is…" – that is obvious from your closing and signature.
- a brief description or exposition of the biological topic written in your own words reflecting your own understanding. Personal or specific examples are helpful.
- a clear statement of opinion and a request for a specific action to be taken
- a request that the recipient respond, and your complete mailing address so that he or she may do so.

Additionally, an effective letter
- recognizes the needs of the reader. Shell Oil Co. needs to be profitable. It will not voluntarily take action that will result in big financial loses, but it may be persuaded to change from one profitable activity to another, such as alternate fuels marketing rather than drilling in wilderness areas.
- sets a realistic goal. Legislators may be willing to support systematically increasing funding for AIDS research, but not diverting all medical research funding to that particular area
- benefits from considering opposing ideas and arguments. Mentioning these increases your credibility, and allows you to refute these arguments in a constructive manner.

Example topics:

- A letter to Honda Motor Co. inquiring about their line of electric vehicles; describing your understanding of how electric vehicles may reduce CO₂ emissions and therefore contribute to solving global warming and its many related biological impacts; and urging them (to / not to) work to make electric vehicles economically and socially accepted transportation alternatives.
- A letter to the California Interscholastic Federation describing the biological and health issues involved with steroid use to enhance performance, urging the (banning / changed regulation) of anabolic steroid use and reconsideration of policies for high school athletes in California.
- A letter to the National Park Service regarding the re-introduction of wolves into the Yellowstone ecosystem providing biological background on topics such as wolf predation behaviors and population growth, and also noting the realities of regional livestock economics, and then urging them to (change / stay the course) on re-introduction policy.
- A letter to (your national church or religious body, or a local or regional religious organization as appropriate) responding to or suggesting a specific policy statement on the issue of biodiversity and environmental protection which includes pertinent
biological information as well as theological reflections.

**SELECTION WRITING ASSIGNMENTS:**

The four topics – Biology in the News, To Your Health, Personal Impact Log, and Senior Citizen Interview – provide you with choices for your selection assignments. Remember, if you choose to do only one, it must be Biology in the News. For your second submission, choose among the other three.

**Biology in the News**

The purpose of this assignment is to give you practice in assessing the ever-increasing amount of biology "news" information that bombards us in the media.

Select any recent written account of a news event or current biological topic – magazine, newspaper, or journal article that is available online. A link to that article must be included as part of the report.

Your report should contain the following:

1. Appropriate and accurate citation information on the article or written account. This means provide everything necessary for someone else to find the same material; author, title, date, source or publisher, pages or specific web page address. Note! Sacramento Bee September 6, or health.yahoo.com is not complete; it is not enough to find the article again. Additionally, do not use the library web link in your citation; the library link does not directly access the material unless you are in the library online environment. Use the original source citation.

2. A live link to the article or written account.

3. A one or two paragraph overview of the topic, indicating the circumstances for it being newsworthy (for example, Congress is considering a bill..., a new United Nations report indicates..., researchers reported a breakthrough as a Florida man left the hospital today...).

4. In your own words, a brief 2 to 3 paragraph summary of the biology involved as you understand it – do not simply repeat the material in the article.

   Additionally, within the context of your report, answer the following:
   a. Does the information in the article seem plausible or believable to you? Why or why not?
   b. Does it make sense? Common biology sense?
   c. What is the source of the information? Do they have credentials that make you confident the science is accurate and believable? Explain.
   d. Do the sources have any possible biases? Do they have any conflicts of interest? Explain.
   e. Is this topic something that will impact you as an individual? If so, how? Is this something that will impact society, or segments of society? If so, how?
   f. What do you predict will be the news regarding this topic five years from now? Twenty five years from now? Explain your answers.

Your Biology in the News report must be at least 600 words typed, double spaced (about 2 pages). Save your report as a Microsoft Word document in RTF format. Submit the report at the course Drop Box.
To Your Health

The purpose of this assignment is to encourage you to consider the opportunities we have to make informed choices and exhibit positive behaviors that have significant impacts on our health, or the health of our loved ones. To do so, you need to have a good understanding of the biology that underlies maintaining a strong and healthy body. In the best of all worlds, the result would be that you make changes in your life that provide a long-term improvement to your health.

Select a topic that is pertinent to your personal health, and find some information on that topic. (You may also select a topic that relates to someone for which you are a caregiver – a child or dependent adult). Possibilities are almost endless, but select a topic that relates to maintaining general good health, or managing a long-term physical condition. Specific examples include

1. making good nutritional choices: vitamins and supplements; energy drinks; consuming fast foods; organic foods; vegetarian diets; using the food pyramid.
2. Being active: increasing strength and size; increasing endurance; exercise and aging; personal or family fitness plans; personal goals– running a mile or marathon, cycling a century, learning to swim.
3. Changing behaviors: managing addictions – drugs, alcohol, tobacco; maintaining a healthy weight; reducing risk of heart disease; practicing safe sex; body image and eating disorders.
4. Finding a balance: practicing relaxation techniques, managing stress, spiritual practices and emotional well being..

Your report should include the following:

1. A complete citation for the article or written account. See Biology in News about citations
2. A live link to the above article or account.
3. A synopsis or review of the issues involved or the information you obtained, with an emphasis on the underlying biology.
4. A personal response to this issue. What will you now do with this information or awareness? Can you make a commitment to change your choices of behaviors? Will you set specific, measurable goals and enlist others to help you succeed?

Your “To Your Health” report must be at least 600 words typed, double spaced (about 2 pages). Save your report as a Microsoft Word document in RTF format. Submit the report at the course Drop Box.

Personal Impact Log

The purpose of this assignment is to allow you to consider and assess the personal responsibility that you have for impacting the environment, and to give you an opportunity to consider preferable alternatives.

John Muir eloquently gave us the idea that "everything is connected to everything else". Ecologists tell us that all organisms live in relationships – to others of their kind, to all other living organisms, and to the physical environment. For this assignment, keep a time log – from when you wake up until you go to bed - all you do that you believe may have a biological impact on other living creatures. This does not mean only obvious ones, like feeding your pet or sharing your flu virus with members of your household. Consider the food you eat, the clothes you wear, and the technology you employ. How are they produced? What impacts or interactions result to provide you with these often invisible amenities of life? Where are these impacts taking place – locally or at a distance? What impacts occur after your interaction? Is there waste produced? pollution? impacts on other creatures?
Your report should:

1. Follow the time sequence of a day log – listing the time and activity or action, along with your review and assessment of the immediate and more distant impacts that are connected to your action.

How will you know what all the impacts are? You won't, but you can certainly make some educated guesses, or do some research that will better inform you.

*Example:* 9:30 am. Bought a cup of coffee at Starbucks. Beans were probably grown in South America in an area cleared for agriculture. The beans were transported here in large ocean tankers that often pollute water ways, but are pretty energy efficient for moving heavy cargo. Beans were roasted and ground, using natural gas and electricity, which usually causes air pollution to be generated. The cup was paper, some of it probably from recycled material. I threw the cup into the trash, which will become landfill someplace, but it is a wood product so will eventually degrade. The plastic lid however won't. I wonder what they do with all the used grounds – the coffee beans that were grown half a world away in the hills of South America…?

2. Indicate whether you see these as positive or negative impacts. Explain.

*Example:* The cleared land in S. America is probably a negative impact for the native plants and animals there… The paper cup is biodegradable, better than the plastic lid. If they use the grounds for producing organic mulch, that would be good, but I suspect they probably toss it in with the rest of their trash…

3. Each entry should also contain some alternative or optional strategies that you might employ that may be preferable to your current practice. Indicate why you think this would be so, and whether you would realistically consider the alternative behavior.

*Example:* I could not drink coffee, and then there would be less land cleared in S. America. I could certainly use my own cup rather than a paper one and plastic lid. I will probably not stop drinking coffee, but will stop using paper cups that just fill the landfills.

Such a log could theoretically be never-ending, so you will have to do some prioritizing of the events and actions you list. Select the ones that you feel are most interesting or surprising to you. Your impact log report must be at least 600 words typed, double spaced (about 2 pages). Save your report as a Microsoft Word document in RTF format. Submit the report at the course Dropbox.

**Senior Citizen Interview**

The purpose of this assignment is to help you to assess our changing understanding of the biological world. Research and technology is rapidly changing the way we feed ourselves, the way we care for our health, the choices we make as a consumer, and the way we recreate and live in the natural environment.

For this assignment, interview at least one senior citizen, covering the content below by using variations of these questions. Make sure they express an opinion or judgment about whether things are now better or worse.

*Note!* Not everyone appreciates being labeled as a senior citizen – but most will accept that wisdom comes with age, so choose your words carefully. How old should they be? The greater span of years between you and them, the more interesting your conversation will be.

Your Senior Citizen Interview report should include:

1. A bit of background – where they grew up and lived, and what their parents and their own occupations have been.
2. Food. Is the food today different compared to when you were younger?
   If necessary, prompt them with the following: Are there different varieties? Are they produced differently? Do you get them from different sources? Are they produced in different areas than they were? Available for longer periods of times or seasons? How about taste? What are some of the changes you have seen in the food we have – the way it is produced, preserved or prepared - or the way we eat? What do you think has caused these changes in the food that we eat? Overall, do you think the changes you have seen in the food we eat have been for the better?

3. Health. Is health care different than when you were younger?
   If necessary, prompt them with the following: What childhood diseases were common or of concern? When you got sick or injured, who treated you? Were you sick or injured for any length of time? Were you ever hospitalized or have surgery? What did you do to get well? What did people do as part of daily routines to stay healthy? What are changes you have seen in our ability to prevent or treat disease and in our concern about keeping healthy? What do you think has caused these changes in our health care? Overall, do you think the changes you have seen in the way we care for our health have been for the better?

4. Environment. Is awareness or concern for the environment different when you were younger?
   If necessary, prompt them with the following: How did people value or relate to wildlife? Was there concern about preserving, or access to, natural areas, wilderness, or open space? What about soil conservation and protecting agriculture, forestry or fisheries? What about the quality of air and water? Pesticides, carcinogens or pollutants? Have you seen changes in the way we live our individual lives due to environmental concerns, or the way we care for our environment as a society? What do you think has caused these changes? Overall, do you think the changes you have seen in the environment have been for the better?

Most likely you will not have answers to all of these topics. But be sure to include some information about the three areas of food, health and environment that are most interesting to you, or most different from what you have experienced. Your senior citizen interview report must be at least 600 words typed, double spaced (about 2 pages). Save your report as a Microsoft Word document in RTF format. Submit the report at the course Drop Box.
SUGGESTED STUDY STRATEGIES FOR BIO 300

The best way to learn the most and get the best grade in this course is to do a little studying each day. This may not be realistic for all of you, but the principle of working steadily and consistently still holds. By all means try to spend some time each week studying and working on assignments. This is the best way to truly learn the material, and the course grading scheme is designed to encourage and reward this study strategy.

Each Week
Weekly class sessions are designed to introduce the material to you and to build from the knowledge you may already have. Therefore, you do not need to read before attending class, but of course, you may if you so choose. After being introduced to the material in class, you should:

1. Quickly produce a very rough sketch of your weekly study aid writing, recalling what was done in class and reflecting briefly on the topics as described in the section of this syllabus on weekly study aid writings.

2. Review the questions or tasks worked on during class to provide direction and perspective for your reading, then read the relevant topics in an appropriate text and review or finish any readings provided in class.

3. Review your answers and finish answering any questions or assignments worked on during class.

4. Spend some time reflecting and pondering on the material, and integrating it with what you already know. While not all questions will apply to all topics, these are the kinds of questions you should consider.

5. Revise the rough sketch of your weekly study aid writing to reflect your readings, your question answers, your reflecting and pondering. Submit it before the Dropbox closes, which will be the start of the next class.

6. Check the discussion board on the course website. The conversation will be related to the previous week’s lesson. Read comments from your colleagues. Make a contribution, then check back again, and react to the comments of others. Two or more per class session! The discussion board will accept comments for two weeks after opening.

7. The following week, take the study aid quiz to refresh your memory and prepare you for the exams.

8. Note any questions you have, and ask Will before or after the next class, or e-mail him if that is more helpful.

Prior to an Exam
Review your weekly study aid writings and the handouts provided during class. Ask yourself what was emphasized in class and in the materials and readings. If you were the instructor, what would you ask on the exam to reinforce those emphasized elements?

- Is this familiar? Have you heard of it before? Is it similar to something else we’ve studied, or something you’ve learned in another course?
- How does this relate to the other topics we’ve covered?
- Can you think of other examples of this?
- How might you apply this idea?
- Do you recognize this in your everyday life?
- Is it important to you or impact you personally?
- Who wrote this or who/what is the source of the information? Who is advocating or opposed to this?
Tips for Contributing to the Discussion Board

Write a note, not a novel. Remember that you have to read as well as write, so short and sweet is just fine. Writing in electronic discussion is informal, so don't spend a lot of time on the style and structure of your writing, but do make sure that what you write is clear and communicates what you want. One good way to do that is to read your post aloud before sending it.

Don't butt-in. The discussion is organized by the thread headings (a new idea or line of discussion) and by the order of replies. So if you want to make a major change in the topic – that is, start a new idea or line to the conversation - you need to use the "Compose" button. If you want to specifically respond to a post by another student, use the reply link. At first this all seems rather complex, but when you begin working with it, it becomes quickly clear.

Pay attention. Read through all the postings before responding. That way you avoid making comments that others have already made. It is, however, perfectly fine to add your agreement or to reinforce other's comments.

Choose your words wisely. Attempts at humor and sarcasm may be misunderstood. Evolution and culture combine to make us adept at communicating face to face – using and interpreting gestures, body language, voice inflection and eye contact to add layers of meaning to our actual words. Writing on discussion boards does not employ all of those communication mediums, so beware.

Don't yell. Refrain from using all capital letters or other visual means of strong emphasis. We are listening.

You can't whisper. When submitting a post, remember that you are addressing all the members of the class, not just one individual. Even though one person wrote the previous comment, we will all be reading all the posts. That means don't say something to that person that you wouldn't want everyone to read.

Learn from others. Keep an open mind and be open to changing your opinion. See this as an opportunity to learn from and to support the learning of your fellow students, not a chance to "win an argument".

Help others learn. Avoid criticizing your student colleagues; instead, respond to the content of what they said. Share the information or the reasoning that convinces you, or identify the areas where more information might change your mind.

Be cool. If you feel offended or attacked because of a comment posted by a fellow learner, it is likely that was not the intent. Choose the "high road" and do not respond in kind, but keep the conversation impersonal and on the topic and we all will learn more. Waiting a bit before responding often helps.

Respect diverse opinions. You do not have to agree with what is said, and you do not have to accept statements without comment, but you do need to remain courteous and keep the focus on the ideas, recognizing that we all bring different experiences, value systems and decision making processes to the discussion.

Enjoy yourself. All the above should not limit your potential, squelch your creativity, or make this a dull exercise. Learning is enjoyable, and interacting with well-meaning and supportive fellow learners is always pleasant.
LEARNING OUTCOMES

You will learn a great amount of biology in Biology 300. When you have completed this course, you should be able to:

- explain basic cellular, anatomical, and physiological mechanisms by which organisms, including humans, maintain homeostasis. For example, you should understand how we keep a relatively constant body temperature even as environmental temperatures fluctuate.

- describe the basic processes of cellular reproduction and genetics. For example, you should be able to describe mitosis and meiosis, and how the molecules of DNA contain the information the cell needs to make all the protein necessary for the cell to function.

- analyze the implications of modern biotechnologies. For example, you should be able to make informed predictions on how DNA manipulation might influence agricultural, medical, legal and social practices and principles.

- apply evolutionary theory to various organisms. For example, you should be able to explain from an evolutionary perspective how and why populations of organisms change over time in terms of their structure, function and behavior, and under what circumstances one species may diverge into two or more.

- analyze new situations using the scientific method, evaluate the validity of data, and form appropriate conclusions. For example, given an appropriate scientific question, you should be able to then propose a application of the scientific method to develop an answer, and identify how valid data might be obtained to test the hypothesis.

- propose solutions to biological problems. For example, you should be able to identify how biological knowledge can be used to better understand areas as diverse as agriculture and health care, and allow us to improve the quality of human life.

- analyze data using quantitative reasoning and basic mathematical concepts. For example, you should be able to calculate growth rates and employ graphing skills to understand changes to a population of organisms over time.

- analyze changes in biodiversity over time. For example, you should be able to evaluate measures such as richness and evenness to determine diversity, and how that may change.
C A L E N D A R
Readings refer to Edwards, Gabrielle I. *Biology the Easy Way*, but any biology text will have similar topics.

1. January 16. Biology is studying living things, and we are all biologists.
   Activity to reinforce learning: Buy the textbook. Re-read the syllabus, assignment descriptions, and handouts. Log on to Los Rios Online and check out the Biology 300 site. Send me an e-mail and say hello!


   Readings to reinforce learning: review the syllabus directions for the core assignments and the selection assignments.


   Due: First selection writing assignment
   Readings to reinforce learning: Chapter 4, pgs 73-75 - Some Basic Principles of Chemistry; Matter and Energy; Atoms, Elements and Compounds; General Structure of Atoms. Chapter 5, pgs 95-99 - The Cell as a Chemical Factory; Inorganic Compounds; Organic Compounds; Carbohydrates, Lipids, Proteins, Nucleic Acids.

   Readings to reinforce learning: Chapter 6, pgs 120-122 - Prokaryotes. Bacteria, General Characteristics of Prokaryotes. Chapter 6, pgs 130-131 - Importance of Bacteria, Bacteria and Disease, Helpful Bacteria. Chapter 3, pgs 41- 52 - The Cell as a Basic Unit, Parts of a Cell, Comparison of Plant and Animal Cells.

   Due: First draft of letter assignment report. Submit online and hard copy in class – see assignment description.
   Activity to reinforce learning: review letter draft comments and incorporate as appropriate.

   Readings to reinforce learning: Chapter 9, pgs195-201 - Photosynthesis. Chapter 5, pgs 105-108 - Cellular Respiration.
   Due: Second selection writing assignment

    Readings to reinforce learning: Chapter 6, pgs 131-134 - Viruses. Chapter 15, pg 371 - Table 15.5 Common Virus Diseases. Chapter 6, pg134 - Prions.

**March 27. Spring Recess – no class**

    Due: Letter assignment final report & changes statement

12. April 10. Organisms are organized… Maintaining the internal environment… the muscular-skeletal system and the cardiovascular system in health and disease.


    Due: Letter assignment. Submit online and hard copy in class – see assignment description.
    Readings to reinforce learning: E-Z Biology does not have any material on human population growth. A very good web site can be found by Googling "human population growth" and looking for the University of Michigan site - http://resilience.earth.lsa.umich.edu/units/population/index.html


    Readings to reinforce learning: review handouts and previous readings from entire course.

17. May 15. Applying your learning - final exam. Start time later! Final exam is scheduled from 5:45 – 7:45 pm.