Biology 10 – Introduction to Biology

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**Required text:** Essentials of Biology w/Physiology, Campbell

Laney College Lab Manual

Recommended 🡪 Lecture workbook is available in the bookstore

**Description:**

This class is an introduction to the science of biology for non-majors. We cover the f**undamentals of biology for the non-major:  Scientific inquiry, biological chemistry, cell structure and function, DNA and genetics, evolution and ecology, and an overview of living organisms.**  This class also i**ncludes laboratory exercises designed to complement lectures.** As a first semester course, we will also be addressing study skills for Biology and biological thinking.

###### LEARNING OUTCOMES - My Practical Goals for you

* Take an active role in one’s own education by taking personal responsibility for learning, learn to explain topics in students own words, understanding the need to stay on top of material given
* Discuss the correlations between environmental and socioeconomic issues
* Differentiate between a hypothesis and a theory in writing on exams
* Discuss the principles of biology as the study of living things including biological hierarchies, classification of living things, chemical processes of the cell and organisms.
* Improve confidence in scientific knowledge and ability to apply knowledge to related situations.
* Read and discuss articles related to current issues in biology. Form opinions on these issues and express and defend those opinions biologically in discussions and written essays.

###### LAB GOALS -

* Take personal responsibility for your own understanding of the application of science
* Cooperate with others working as a group, delegate work to others, collaborate with group.
* Use microscopes and other equipment correctly and care for them properly.

##### ASSESMENT OF THESE GOALS

**WRITING ASSIGNMENT - To help you become more involved in the world of science…**

You are assigned two writing assignments to complete this semester. For each testing section, you need to find a current topic in the news that relates to what we are discussing in class. Then, you will to write a 2 page of analysis on your article, 5-paragraph form. In the essay, be sure you address the topic, the name of the researcher or research group and where the research was conducted. You should explain what the research is, what benefit it has to the world, how it relates to the course material (a sentence that starts with ‘this relates to class’ is good) and why the research is important. See attached essay grading rubric for specifics on what is required of you, include the rubric each time you turn it in so we can see if you are improving. **Due in lab the week after your lecture exam.**

**STUDY GUIDE ASSIGNMENT - To help you prepare for exams…..**

To encourage you to utilize the study guide to its fullest, you can earn points by answering all the questions on the study guide for exam 1 or 2. To earn full credit, you must write out the question then write out a complete answer. This may be a word, a sentence, or a long complex answer so be thorough. Try using a separate piece of paper for each section. We recommend that you complete the first one for credit, then you can increase your score if you need to with the second one. We’re hoping that once you see how much it improves your scores you do this for all the tests. As well as increasing your test scores, you can earn up to 30 pts this way, so make sure you put in the time. **Due the day of the lecture exam (except final exam).**

**HOMEWORK ASSIGNMENTS - To prepare you for lab activities…..**

There will be 2 assignments worth 15 points that you will finish at home before the lab on a similar topic. The first assignment will be preparation for your Chemistry lab. Both are on the website and due in lab.

**LECTURE EXAMS - To assess your understanding of the material presented in class….**

There will be three lecture exams (each worth 100pts) consisting of a material covered in lecture and reading from text. Tests may include multiple choice, true/false, matching questions, short answer and essay questions to help you learn to explain the reasons for your answers. **If you are late to an exam, you lose 1pt per minute after the start of the exam so be on time and there are no make-up exams are given**, so be sure you’re in class! If an emergency occurs, contact us ASAP.

It is a good idea to review your exam when it is returned to you. If you believe your answer is correct and you can explain it biologically speaking and also submit that in writing. **Due 1 week from the date you took the exam.**

**LAB WORK - To assess your ability to conduct experiments and answer questions on the material….**

You are responsible for completing the work in you lab book during the lab session. To receive full points, you must show me your completed lab (summary questions and all) before you leave each day. This will count as your attendance and your lab points (5 pts per lab x 13 labs). Be sure you read the lab before you come to lab. If you need to miss a lab, you can come to a different section if you tell us ahead of time. **You are welcome to check your answers at the end of lab or during office hours.**

**LAB PRACTICALS - To assess your understanding of the material you learned in the lab….**

There will be 3 lab practicals give during the semester. These exams are designed to test your knowledge of both the experimental procedures and the hypotheses tested for each experiment. The exams consist of stations with questions for you need to answer within a limited time as well as a few short answer questions. Plan on the exam taking 1 hour, leaving early may result in a penalty. You may not leave the exam before being released by your instructor. **We suggest making vocabulary and activity lists for each lab.**

*Be sure you are aware of tests that occur on a day that is not your usual lab day. Make arrangements beforehand, or talk with your lab instructor to pick a time that day if you have a conflict*

**PARTICIPATION - To be sure you are keeping up with the requirements of the class overall…**

Each person is expected to attend class regularly, to be prompt, and to be well prepared. In lecture, you are graded on not just showing up, but participating and being prepared. In lab, this includes cleaning up your lab area before you leave the classroom, putting your microscope away correctly, pushing in your lab stool and being respectful of your fellow students, the instructor and the class. You will be given points dependent upon how well you achieve these goals. Everyone starts with 70% of participation points and those points will go up or down depending on you!

**Calendar:** We’ve included a calendar to help you get organized. Write in the due dates for assignments of other classes or dates other exams, work schedules, study times, etc. **This is due in the 3rd week of class!**

**The grades you earn in this class are based on your performance:**

Syllabus Quiz 10 pts

Microscope Quiz 10 pts

Calendar (10 pts) & Grades Page (2 x 5pts) 20 pts

Essays (2 @ 25 points each) 50 pts

Study Guide (for 1 test) 30 pts

Homework Assignments (2 @ 15 pts) 30 pts

Exams (3 @ 100 pts. each) 300 pts

Labwork (5pts a day) 65 pts

Lab Practicals (3 @ 50 pts) 150 pts

Participation/Effort (15 lecture/20 lab) 35 pts

**TOTAL:** 700 pts.

Letter grades are determined by percent: A 90 – 100% (630-700 pts)

B 80 – 89% (560-629 pts)

C 70 – 79% (490-559 pts)

D 60 – 69% (420-489 pts)

F below 59.9% (<419 pts)

\*\*\*Any late work will be **penalized 2 points for each day is it late**, so 1 week late = 14 point loss\*\*\*

**ACADEMIC INTEGRITY**

In the long run, dishonesty will not help you in school, or your professional career. Cheating includes using cell phones for any reason during exams, attempting to copy (or copying) any information from others on quizzes, lab practicals, exams or lab notebook information or anything else deemed cheating by instructor. ***Do not talk during exams for any reason!*** Ask me for help in you need it. The penalty can be a 0 on the assignment, a subtraction of points from your total, an “F” in the course and/or referral to the Dean of the College. See Department Policy if you have questions

## Asking Questions/Asking for Extra Help:

If you have a question during lecture, please raise your hand. If there is still confusion after repeating the information, please see me individually at another time, or contact me through email. If you having a problem with the course, please feel free to meet with me as soon as possible. Questions are not only welcome, but also encouraged. Remember! This class is your responsibility; let me know if you need help.

# TENTATIVE SCHEDULE AND IMPORTANT DATES

May change if necessary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week of** | **Lecture Topic** | **Chapter** | **Monday/Wednesday Lab** | **Tuesday/Thursday Lab** |
| **1/25** | Intro to Biology/Chemistry | 1/2 | Scientific Inquiry | Scientific Inquiry |
| **2/1** | Chemistry | 2 | Chemistry  *Chemistry HW Due* | Chemistry  *Chemistry HW Due* |
| **2/8** | Molecules of Cell | 3 | Microscope | Microscope |
| **2/15** | Cell structure & function | 4/5 | Biological Molecules | Biological Molecules |
| **2/22** | Chemical Energy | 6 | Cells | Cells |
| **2/29** | **Lecture Exam 1 Wed or Thurs** | | **Lab Practical 1 Tuesday or Wednesday** | |
| **3/7** | Cellular Reproduction | 7/8 | Why We Breathe Oxygen **Essay 1 Due** | Why We Breathe Oxygen **Essay 1 Due** |
| **3/14** | Molecular biology | 9/10 | How Cells Make More | How Cells Make More |
| **3/21** | **SPRING BREAK** | | | |
| **3/28** | Evolutionary Thought | 11/13 | What Is DNA | What Is DNA |
| **4/4** | Evolutionary Processes | 14 | How Do Things Changes | How Do Things Changes |
| **4/11** | **Lecture Exam 2 Mon or Tues** | | **Lab Practical 2 Wednesday or Thursday** | |
| **4/18** | Unicellular Organisms | 15/16 | Microbes & Fungus  **Essay 2 Due** | Microbes & Fungus  **Essay 2 Due** |
| **4/25** | Multicellular Organisms | 18 | Plant Evolution | Plant Evolution |
| **5/2** | Multicellular Organisms | 18 | Animal Survey | Animal Survey |
| **5/9** | Ecology & Environment | 19 | Human Evolution  *Museum HW Due* | Human Evolution  *Museum HW Due* |
| **5/16** | Animal Overview | 21 | Lab Practical 3 Monday or Tuesday\*\* | |
| **5/23** | **LECTURE FINAL EXAM: Monday at 10am or Thursday at 10am** | | | |

\*\*last day to turn **anything** in!

**Extra Credit** is available through participating in Lake Clean-up throughout the semester. If you work on Saturdays, see the Moodle site for alternative projects. Some options include visiting local museums and zoos. There is a limit of 1 extra credit assignment per testing section with a total of 30 points maximum. Once the test has been taken, the opportunity is lost so try to plan ahead.

**It is your responsibility to drop out from the class by College due date. Do Not Depend on Me to Do That for You!** Protect yourself from receiving an "F" for a class that you stopped attending at some point in the semester!

**Biology Writing Assignment Grading Chart**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1) Date \_\_\_\_\_\_\_\_\_\_2) Date\_\_\_\_\_\_\_\_\_\_

You are assigned two writing assignments to complete this semester. These essays will be your evaluation of a recent article in the newspaper or on the Internet concerning a topic we are covering in class. I recommend using [www.sciencedaily.com](http://www.sciencedaily.com) and check out that day’s news.

1. Find a current topic in the news that relates to what we are discussing in class.
2. Write about 2 page of analysis on your article following the chart below using 5-paragraph form:

*Introductory paragraph*

A. Catches the reader's interest

B. Gives brief background on your topic

C. Begins or ends with the [thesis statement](http://www.sheboyganfalls.k12.wi.us/staff/dehogue/FSSH/thesis.htm)

*Body (paragraphs 2, 3, & 4)*

A. Develops, expands, and/or supports the thesis statement

B. Includes a [topic sentence](http://www.sheboyganfalls.k12.wi.us/staff/dehogue/FSSH/parag.htm) for each paragraph

C. Includes supporting details which reinforce the topic sentence.

d. **Make sure you explain how it relates to class**

i..“This relates to class because…”

*Concluding paragraph*

A. Restates the thesis or sums up the argument.

B. Tells the reader what you think is important to remember

C. Never introduce new information in the conclusion

\*\* These are due the week after the lecture exam, yet you can turn it in any time before then.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Points | 5 – Great! | 4 – Good | 3 – Okay | 2 – Not okay | 0 |
| Relevance Article | Specifically about application of a class topic and well tied to class | Inaccurate data or analysis | General topic of class or not tied to class | General topic & not tied to class | Not relevant, no analysis |
| Current Article | Daily publications article from this month  (date required) | Article from monthly magazine | Article from last month | Article from last semester | Article from past year |
| Paragraph Structure | Topic statement first, strong intro & conclusion | Good topic statement, new data mid-way | Missing intro or conclusion paragraph | No obvious paragraph topic | No intro, conclusion or topics |
| Summary of Information | Presented:  Summary of data  Named researchers  Goals of projects, Relevance of information | Missing one of the previous items | Missing two of the previous items | Missing three of the previous items | Missing all of the previous items |
| Followed Directions | 5 paragraph form, article analysis, good paragraph & sentence structure, no misspelling or grammatical errors | Missing one of the previous items | Missing two of the previous items | Not correct form or analysis but no errors | Poor paragraph or sentence structure, misspellings |

Overall Point Total

Total Points \_\_\_\_\_\_/25 Total Points \_\_\_\_\_\_/25

**SPRING 2016 SEMESTER SCHEDULE Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Gather all the syllabi from your other classes and any other schedules that you know ahead of time and write in those dates. If you’d rather do this digitally, you download this from your Moodle shell.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| Jan 25 | Jan 26 | Jan 27 | Jan 28 | Jan 29 | Jan 30 |
| inquiry | inquiry | inquiry | inquiry |  | Saturday class |
| Syllabus Quiz |  |  |  |  | begin |
| Feb 1 | Feb 2 | Feb 3 | Feb 4 | Feb 5 | Feb 6 |
| chemistry | chemistry | chemistry | chemistry |  | **Jan 31**: Last day |
| Chemistry HW |  |  |  |  | add & drop w/o W |
| Feb 8 | Feb 9 | Feb 10 | Feb 11 | Feb 12 | Feb 13 |
| Microscope | microscope | microscope | microscope |  |  |
| Microscope Quiz |  |  |  |  |  |
| Feb 15 | Feb 16 | Feb 17 | Feb 18 | Feb 19 | Feb 20 |
| molecules | molecules | molecules | molecules |  |  |
| Calendar |  |  |  | HOLIDAY |  |
| Feb 22 | Feb 23 | Feb 24 | Feb 25 | Feb 26 | Feb 27 |
| HOLIDAY | cells | cells | cells |  |  |
|  |  |  |  |  |  |
| Feb 29 | Mar 1 | Mar 2 | Mar 3 | Mar 4 | Mar 5 |
| cells | **Practical 1** | **Practical 1** | Lab meets Tues |  |  |
|  |  | **Lec Exam 1** | **Lec Exam 1** |  |  |
| Mar 7 | Mar 8 | Mar 9 | Mar 10 | Mar 11 | Mar 12 |
| breathing oxygen | breathing oxygen | breathing oxygen | breathing oxygen |  |  |
|  |  | **Essay Due** | **Essay Due** |  |  |
| Mar 14 | Mar 15 | Mar 16 | Mar 17 | Mar 18 | Mar 19 |
| making new cells | making new cells | making new cells | making new cells |  |  |
|  |  |  |  |  |  |
| Mar 21 | Mar 22 | Mar 23 | Mar 24 | Mar 25 | Mar 26 |
| Spring Break | Spring Break | Spring Break | Spring Break |  |  |
| Mar 28 | Mar 29 | Mar 30 | Mar 31 | Apr 1 | Apr 2 |
| DNA | DNA | DNA | DNA |  |  |
|  |  |  |  |  |  |
| Apr 4 | Apr 5 | Apr 6 | Apr 7 | Apr 8 | Apr 9 |
| changing DNA | changing DNA | changing DNA | changing DNA |  |  |
|  |  |  |  |  |  |
| Apr 11 | Apr 12 | Apr 13 | Apr 14 | Apr 15 | Apr 16 |
| Lab meets Wed | Lab meets Thurs | **Practical 2** | **Practical 2** |  |  |
| **Lec Exam 2** | **Lec Exam 2** |  |  |  |  |
| Apr 18 | Apr 19 | Apr 20 | Apr 21 | Apr 22 | Apr 23 |
| microbes & fungus | microbes & fungus | microbes & fungus | microbes & fungus |  |  |
|  |  | **Essay Due** | **Essay Due** |  |  |
| Apr 25 | Apr 26 | Apr 27 | Apr 28 | Apr 29 | Apr 30 |
| plants evolution | plants evolution | plants evolution | plants evolution |  | Attend. Verif. Day |
|  |  |  |  |  | Last day drop w/W |
| May 2 | May 3 | May 4 | May 5 | May 6 | May 7 |
| animal survey | animal survey | animal survey | animal survey |  |  |
|  |  |  |  |  | NO SAT. CLASSES |
| May 9 | May 10 | May 11 | May 12 | May 13 | May 14 |
| human evol | human evol | human evol | human evol |  |  |
| Museum HW |  |  |  |  |  |
| May 16 | May 17 | May 18 | May 19 | May 20 | May 21 |
| **Practical 3** | **Practical 3** |  |  | HOLIDAY \_Mal X | Sat. class Finals |
| May 23 FINALS | May 24 | May 25 | May 26 | May 27 | May 28 |
| 10 – F710 |  |  | 10 – F170 |  |  |

GRADES RECORD - This needs to be updated turned in to your lab instructor – see calendar for due dates. If you are not earning at least a C when you turn this in the first time, please include an Action Plan for how you are going to pass the class.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lecture Exams** |  | **Lab Practical** | |  | **Quizzes (10pts)** |
| **1)** |  | **1)** | |  |  |
| **2)** |  | **2)** | |  |  |
| **3)** |  | **3)** | |  |  |
|  |  |  | |  |  |
| **Lab work (5 pts each)** | | **Study Guide (30 pts)** | | **Essay (25 pts each)** | |
| 1) | 11) | 1) | | 1) |  |
| 2) | 12) |  | | 2) |  |
| 3) | 13) |  | |  |  |
| 4) |  | **Calendar (10pts)** | |  |  |
| 5) |  | 1) | | **Homework (15 points each)** | |
| 6) |  |  | | 1) |  |
| 7) |  | **Grades Page (5 each)** | | 2) |  |
| 8) |  | 1) | |  |  |
| 9) |  | 2) | |  | |
| 10) |  |  | |
| **Lab work total** | **1)** |  | |
|  | **2)** |  | |
|  |  |  | |
|  |  |
| **Extra Credit** | **Overall Total** | **% /ltr grade** | What grade do you want to earn? | | Are there enough points left in class? |
|  | **1)** |  |  | |  |
|  | **2)** |  |  | |  |

* To find your %, divided the points you’ve earned by the total possible