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 the week before 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 and will be taken in the computer lab with a written section. You must be in the lab to take the exam with few exceptions. **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 us 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 & Grades Page:** 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 4th week of class! The Grades Page due dates will be provided in class, so make sure you write it down.**

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

Syllabus & Microscope Quizzes (10 pts each) 20 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 Questions are not only welcome, but also encouraged. Remember! This class is your responsibility so 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** |
| **8/22** | Intro to Biology | 1 | Scientific Inquiry  *Syllabus Quiz* | Scientific Inquiry  *Syllabus Quiz* |
| **8/29** | Chemistry | 2 | Chemistry  *Chemistry HW Due* | Chemistry  *Chemistry HW Due* |
| **9/5** | Molecules of Cell | 3 | W - Microscope  *Microscope Quiz* | Microscope  *Microscope Quiz* |
| **9/12** | Cell structure & function | 4/5 | Biological Molecules  *Calendar Due* | Biological Molecules  *Calendar Due* |
| **9/19** | Chemical Energy | 6 | Cells  **Essay 1 Due** | Cells  **Essay 1 Due** |
| **9/26** | **Lecture Exam 1 Mon or Tues** | | **Lab Practical 1 Wed or Thurs** | |
| **10/3** | Cellular Reproduction | 7/8 | Why We Breathe Oxygen | Why We Breathe Oxygen |
| **10/10** | Molecular biology | 9/10 | How Cells Make More | How Cells Make More |
| **10/17** | Evolutionary Thought | 11/13 | What Is DNA | What Is DNA |
| **10/24** | Evolutionary Processes | 14 | How Do Things Changes  **Essay 2 Due** | How Do Things Changes  **Essay 2 Due** |
| **10/31** | **Lecture Exam 2 Wed or Thurs** | | **Lab Practical 2 Mon or Tuesday**  **Lab Thurs – Microbes & Fungus** | |
| **11/7** | Unicellular Organisms | 15/16 | M - Microbes & Fungus | Tues – Microbes &Fungus  Thurs - Plant Evolution |
| **11/14** | Multicellular Organisms | 18 | Plant Evolution | T - PE; Th - Animal Survey |
| **11/21** | Multicellular Organisms | 18 | Animal Survey | T – AS; *Th - Thanksgiving* |
| **11/28** | Ecology & Environment | 19 | Human Evolution | Human Evolution |
| **12/5** | Animal Overview | 21 | Lab Practical 3 Monday or Tuesday\*\* *Museum HW Due* | |
| **12/12** | **LECTURE FINAL EXAM: Monday at 10am or Tuesday 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 me 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. You will turn it in through Moodle.

**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 before 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  (web-link needed) | Article from monthly magazine | Article from last month | Article from last semester | Article from past year or no date provided |
| 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

Comments:

**FALL 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 |
| Aug 22 | Aug 23 | Aug 24 | Aug 25 | Aug 26 | Aug 27 |
| inquiry | inquiry | inquiry | inquiry |  |  |
| Syllabus Quiz |  |  |  |  |  |
| Aug 29 | Aug 30 | Aug 31 | Sep 1 | Sep 2 | Sep 3 |
| chemistry | chemistry | chemistry | chemistry |  | **9/4**: Last day to add |
| Chemistry HW |  |  |  |  | & to drop w/o W |
| Sep 5 | Sep 6 | Sep 7 | Sep 8 | Sep 9 | Sep 10 |
| HOLIDAY (Labor | microscope | microscope | microscope |  |  |
| Day) | Microscope Quiz |  |  |  |  |
| Sep 12 | Sep 13 | Sep 14 | Sep 15 | Sep 16 | Sep 17 |
| micro/molecules | molecules | molecules | molecules |  |  |
| Calendar DUE |  |  |  |  |  |
| Sep 19 | Sep 20 | Sep 21 | Sep 22 | Sep 23 | Sep 24 |
| microscope/cells | cells | cells | cells |  |  |
| **Essay Due** | **Essay Due** |  |  |  |  |
| Sep 26 | Sep 27 | Sep 28 | Sep 29 | Sep 30 | Oct 1 |
| Lab meets Wed | Lab meets Thurs | **Practical 1** | **Practical 1** |  |  |
| **Lec Exam 1** | **Lec Exam 2** |  |  |  |  |
| Oct 3 | Oct 4 | Oct 5 | Oct 6 | Oct 7 | Oct 8 |
| breathing oxygen | breathing oxygen | breathing oxygen | breathing oxygen |  |  |
|  |  |  |  |  |  |
| Oct 10 | Oct 11 | Oct 12 | Oct 13 | Oct 14 | Oct 15 |
| making new cells | making new cells | making new cells | making new cells |  |  |
|  |  |  |  |  |  |
| Oct 17 | Oct 18 | Oct 19 | Oct 20 | Oct 21 | Oct 22 |
| DNA | DNA | DNA | DNA | Last day to file for |  |
|  |  |  |  | AA/AS |  |
| Oct 24 | Oct 25 | Oct 26 | Oct 27 | Oct 28 | Oct 29 |
| changing DNA | changing DNA | changing DNA | changing DNA |  |  |
| **Essay Due** | **Essay Due** |  |  |  |  |
| Oct 31 | Nov 1 | Nov 2 | Nov 3 | Nov 4 | Nov 5 |
| **Practical 1** | **Practical 2** | Lab meets Mon | microbes & fungus |  |  |
|  |  | **Lec Exam 2** | **Lec Exam 2** |  |  |
| Nov 7 | Nov 8 | Nov 9 | Nov 10 | Nov 11 | Nov 12 |
| microbes & fungus | microbes & fungus | microbes & fungus | plants evolution | HOLIDAY |  |
|  |  |  |  | (Vet's Day) |  |
| Nov 14 | Nov 15 | Nov 16 | Nov 17 | Nov 18 | Nov 19 |
| plants evolution | plants evolution | plants evolution | animal survey | Attend. Verif. Day |  |
|  |  |  |  | Last day to drop w/W |  |
| Nov 21 | Nov 22 | Nov 23 | Nov 24 | Nov 25 | Nov 26 |
| animal survey | animal survey | animal survey | HOLIDAY | HOLIDAY |  |
| Museum HW |  |  | Thanksgiving | Thanksgiving | NO SAT. CLASSES |
| Nov 28 | Nov 29 | Nov 30 | Dec 1 | Dec 2 | Dec 3 |
| human evolution | human evolution | human evolution | human evolution |  |  |
|  |  |  |  |  |  |
| Dec 5 | Dec 6 | Dec 7 | Dec 8 | Dec 9 | Dec 10 |
| **Practical 3** | **Practical 3** | lab meets Mon | Lab meets Tues |  |  |
|  |  |  |  |  | Sat. class Finals |
| Dec 12 | Dec 13 | Dec 14 | Dec 15 | Dec 16 | Dec 17 |
| 10 - Final |  |  | 10 - Final |  |  |

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 pts & activity** | **Overall Total** | | **%**  **& letter grade** | **What grade do you want to earn?** | | **How many points do you need for that grade?** | | **Are there enough points left in class? (#)** | |
|  | **1)** | |  |  | |  | |  | |
|  | **2)** | |  |  | |  | |  | |

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