

Developmental Biology Bio 370 Spring 2018

Online Course Syllabus

Instructor: Dr. James Berry 107 Dorsheimer Lab and Greenhouse (camjob@buffalo.edu)
Dr. Berry's office hours: Mondays and Wednesdays 11:00 – 12:00
or by appointment

Lab Support staff: Shanna Snyder Hochstetter 222
Kristie Reilly Hochstetter 222

Teaching Assistants:

Alexander Bowitch abowitch@buffalo.edu
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Secondary Instructor: Nitasha Sehgal nsehgal@buffalo.edu

*****Important:** all e-mail correspondence with Dr. Berry or the TAs *must be from the student's UB email account* and include "Bio 370 lab day" at the start of the subject line (where lab day must be your lab day, either Tuesday or Wednesday). E-mails sent from other sources will be deleted without reading, and those without "Bio 370 lab day" in the subject may not be acknowledged or opened.

Laboratory Sessions: Hochstetter 212 Tuesday 1:00 - 3:50
Wednesday 1:00 - 3:50

Recitation: NSC 216. Friday 1:00 – 1:50

Attendance Policy:

Attendance for recitation is mandatory! Recitations will cover information on upcoming labs, and present other lab-related topics that will be on the exams, but that may not be covered directly in lab. Exam questions will be taken from the material covered in the recitation lectures, assignments as well as the labs and lab protocols themselves.

Plan on attending recitation every week. There *may* be a week when a recitation will not be given (this will be clearly announced ahead of time), but you must be there for all scheduled recitations. Students will be penalized 10 points for every unexcused absence, and will be dropped from the course for after 2 unexcused absences. Attendance at recitation will be taken through Top Hat. Exams will be given during recitation on 3/2/17, 4/6/17, and a final exam to be scheduled during final exam week.

You must attend each laboratory session and arrive on time. Fifty points will be subtracted from your overall score for the first unexcused lab. You may miss one, *only with a valid medical excuse*. If you miss 2 or more labs for any reason, you may receive an F for the course. There are no make up labs.

Only *valid medical excuses* will be accepted for missing a recitation, exam, or lab. If you miss an exam with a valid medical excuse, Dr. Berry (not your TA) *must be notified within 24 hours of the exam*. Send him an e-mail at camjob@buffalo.edu. All medical excuses must be

accompanied by a signed doctor's excuse with the doctor's phone number. All excuses will be checked.

Makeup exams with an approved valid medical excuse must be taken within 24 hr of having missed an exam. Exams taken more than 24 hr late will lose 25 points. An additional 25 points will be subtracted from your total score for each additional 24 hr that the make-up exam is delayed.

Missed exams may be re-administered as oral exams.

Missed quizzes cannot be re-taken.

There is no lab manual. Experimental protocols will be available on line at least a week before the scheduled lab. You are required to print them out and bring them with you to lab. This will be checked by the teaching assistants.

*******A detailed schedule of laboratories is posted on UB learns*******

The labs are three hours long. Occasionally, you may finish before the end of the session. If that happens, you may leave *only with the permission of your teaching assistant*. There may also be times when the lab runs longer than three hours. Make every effort to stay until the experiment is finished. There are several occasions when observations must be made on experimental organisms grown overnight or longer, or experimental procedures must be continued after an incubation period. In those cases, you are responsible for coming in outside of regular lab hours and performing the next steps of the experiments. These additional observations or manipulations generally require less than thirty minutes.

Textbook: “Developmental Biology” by Scott Gilbert and Michael Barresi (11th edition)
Sinauer Associates Inc., ISBN 978-1-60535-470-5 (hardcover) or
ISBN 978-1-60535-604-4 (looseleaf)

The accompanying website (www.devbio.com) can also be searched by topic.

You will also need access to the online companion site “Vade Mecum³”. Your textbook has instructions about how to access this site.

Exams:

Three exams will be given during the course of the semester. The first two (3/2/18, 4/6/18, given in class during recitation) will focus on material from the first two sections of the course. The last exam will be longer and will test material from the third section of the course and any material from the first 2 sections. That is, **the final will be cumulative**. The final exam will be scheduled during finals week.

Quizzes:

Up to eight unannounced quizzes will be given in lab during the course of the semester. The quizzes may cover what will be performed during that day's laboratory, what was done in the previous week's laboratory exercise and perhaps some unavoidable cumulative aspects of experiments that run more than 2 weeks. Quizzes will be given at the beginning of a laboratory

session, and may not be on the same week or cover the same material in all lab sections. Students who arrive after the quiz has finished will receive zero points for that week's quiz.

Lab Reports:

For each of the experiments, each student will submit a lab report, to be printed and turned in to your lab TA at the start of the lab session, on the due date listed on the schedule. *Please see the instructions for the Lab Reports posted on UB Learns.* Each lab report needs to be prepared independently, and each student needs to hand in their own report separately (one report per person, different names at the top).

Note that your reports must be in your own words, not copied and pasted from the lab handouts or other sources. Late reports will be penalized 1 grade point per day, for up to three days. After three days, the report will not be graded.

Grading:

Grades will be assigned based on the student's performance on the exams, quizzes, laboratory reports, and laboratory bench work. The relative weight of these will be as follows: Exams: 40%, Lab Reports: 44%, Quizzes in lab and TA evaluation of bench work : 16%

*Lab reports (30 points each) = 390

*Lab report #2 50

*Lab quizzes (15 points each) 105
(7 highest out of 8, drop one)

*TA points 35

***Total from lab 580**

*Exam 1 80

*Exam 2 80

*Final exam 160

***Total from exams 350**

***Course Total: 900**

Incomplete grades can only be given in cases where a student is unable to complete the course due to unforeseen problems. The reason a student wishes to receive an I must be documented. The student must be receiving a passing grade in the class at the time the I is issued. The student will be given up to 15 months to complete only that portion of the work that was not completed. An I grade does not allow you to "start over" next year. The website for UB's policy on receiving an I is found here:

<http://undergrad-catalog.buffalo.edu/policies/grading/explanation.shtml#incomplete>

Re-grading:

Requests for re-grades go to Dr. Berry. Your request must be made in within one week after the graded exam or lab report has been handed back to the class. Please note that this time limit is the same for everyone, even for students who weren't present to pick up their exams or

lab reports. If it takes you more than a week to pick up your exam or lab report, then you will not be able to request a re-grade. Re-grades are available to correct mistakes, not to fish for points or re-interpret the answer key. Note that the entire exam may be regarded, so think carefully before asking for a re-grade. Re-grade request must be in writing, with a clear explanation for the request attached to the exam.

Electronics in Lab:

For some labs, you will need to use your phone to take pictures of your data. Other than that, electronics, including computers, phones, and music players, are not allowed to be used in the lab under any circumstances. If you receive an emergency call/text, please leave the lab to answer it.

Calculators:

Only numeric calculators may be used on exams. Alpha-numeric and graphing calculators are not allowed. Cell phones are not allowed to be out during exams.

Lab Safety:

1. Lab aprons are provided and you are required to wear either the apron, or a lab coat if you have your own.
2. Since you will be using glass pipettes and chemicals, you must wear shoes that cover your entire foot (i.e., no sandals, open-toed shoes or slings/clogs).
3. Open flames are used frequently. For that reason, you may not wear scarves or clothing with loose sleeves.
4. Also because of open flames, long hair must be pulled back from the face.
5. Mouth pipetting is NEVER allowed. Anyone observed mouth pipetting will lose credit for that day (i.e., zero for the quiz and the day counted as an absence).
6. When necessary for safety, you will be provided with eye protection and/or disposable gloves.

Disability Accommodations:

If you are registered with the Office of Accessibility Resources and have a diagnosed disability which will make it difficult for you to carry out the course work as outlined or requires accommodations such as recruiting note takers, readers, or extended time on exams, please advise Dr. Berry during the first week of the course. Arrangements for reasonable accommodations will be made.

Breakage fee:

You will be using some very expensive equipment for these laboratory exercises. If you break something due to carelessness or not following directions, you may be charged the replacement cost of the item.

This is the official outcomes & assessment grid that is required by UB:

Bio 370, Developmental Biology Laboratory

| Number | Program Learning Outcome | Depth | Specific outcome objectives for your course | Assessment instrument | Defined Success Level |
|--------|--|-------|--|--|---|
| 1 | Students will develop a broad background in the biological sciences and achieve an understanding and appreciation of basic biological concepts and principles . They will become proficient in five broad areas of biology: evolutionary biology, cell biology, physiology, biochemistry, and genetics. | 0 | | | |
| 2 | Students will acquire laboratory and field skills necessary to answer biological questions and an ability to understand and employ scientific methodologies. They will be able to understand how to obtain, critically evaluate, and communicate experimental results | | Demonstrate ability to understand advanced experimental procedures and how these are utilized to understand specific genetic, environmental, hormonal, and molecular regulation processes that control organismal development. | This outcome will be addressed in one or two questions from exam 2 and in one graded lab report assignment that will be selected at random in each year. | At least 70% of class earns 60% of available points |
| 3 | Students will gain understanding of how to integrate knowledge across biological sub disciplines and to synthesize examples, facts, or hypotheses from more than one level of organization into a coherent whole. They will also obtain the ability to integrate the physical sciences (chemistry, physics, and mathematics) with biology. | 1 | Relate and compare basic findings obtained from different experiments | This outcome will be addressed in one integrated lab report that combines results from two separate but related experiments | At least 70% of class earns 60% of available points |
| 4 | Students will develop effective quantitative reasoning skills and be able to operate as a scientist to formulate and test appropriate biological hypotheses. They will be engaged both independently and collaboratively in the scientific process and learn to critically evaluate the veracity and value of published information. | 1 | Post-evaluation of experiments. Be able to explain how results relate to proposed hypothesis, weakness and strengths of experimental plan, practice, and findings. | This outcome will be addressed in one graded lab report assignment that will be selected at random in each year. | At least 70% of class earns 60% of available points |
| 5 | Students will be able to retrieve information from multiple sources, to analyze this information and communicate it precisely in both written and oral forms. | 0 | | | |
| 6 | Students will develop an interest in lifelong learning and be able to evaluate and advance knowledge in biology. Students will be exposed to current problems in biology, as well as develop an appreciation for the nature of living organisms, the mechanisms of life function, the different levels of biological organization and the interactions among organisms and their environments. | | Gain an appreciation of the significance of Developmental Biology research as it relates to cancer research, genetic disease, defense against pathogens, and agricultural development. | This outcome will be evaluated in one or two questions from exam 3 | At least 70% of class earns 60% of available points |
| 7 | Students will learn to appropriately place biological knowledge into an ethical context, appreciate the importance of ethical conduct in science and demonstrate knowledge of contemporary social and ethical issues related to biology and the professional responsibilities of a biologist. | | Students will learn appropriate conduct in a laboratory environment through cooperation with other students, planning and performance of experiments. | Evaluated based on students total discretionary performance points, obtained from direct observations of laboratory preparedness and performance | At least 70% of class earns 60% of available points |
| 8 | Students will complete a more advanced level of study in areas of their choice to obtain a deeper coverage of at least one of the five broad areas. | 0 | | | |