**General Biology: BI 103 The Dynamic Plant**

**LBCC, Spring 2019**

**CRN: 40935**

**Section: 01**

**Credits:** 4 credits

**Instructor:** Diana Wheat

Office: WOH 207

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**Office Hours: 1:00 –1:50 pm M, W’s and 12:30-1 pm T & R’s.**

Students may contact the instructor via email (preferred) or by phone to make a special appointment outside of these office hours. Generally speaking, I can meet you for a pre-arranged appointment after class on Monday and Wednesdays.

**Introduction:**

An introductory lab science course intended for majors in disciplines other than the biological sciences, structured particularly for those with an interest in horticulture or botany. The theme for this course is the structure and function of flowering plants, with emphasis on crop and ornamental plants. Topics include plant classification, cell biology, plant reproduction and plant diversity. Biology 101, 102 and 103 need not be taken in numerical order, but **only one theme course in Biology 103** can be used to meet graduation requirements i.e. a student cannot take two BI 103’s.

**Schedule:**

Lecture in WOH 214 **M, W** 10:30 –11:50 am

**Lab** in WOH 214 **Fri..**……**10:00** – 11:50am

**Prerequisite:** Recommended MTH 75 – Elementary Algebra

This course is taught as a discrete and separate course in biology. It is not necessary to have any other biology courses before taking this course for non-majors in biology.

**Required Texts:**

* Stern's Introductory Plant Biology, 13th ed. Bidlack & Jansky, McGraw Hill (2014)
* Dynamic Plant Lab Manual, Wheat, Published – LBCC (Spring 2018)

**Advised Materials:**

* Three-ring notebook binder to collect all materials & handouts.
* Hand lens – ***optional***, but may be very helpful.
* Colored pencils 10-12 set package
* Two Scantron forms – Student must supply – these will be shown in week 1 of class
* Notecards for Wednesday reading quizzes (optional)

**Grading**: Final grades for the course will be determined by each student’s ***cumulative*** point total by the end of the term. The following is an approximation of points for each respective category, and is *subject to change*, as deemed appropriate by the instructor.

**Assessments**:

Midterm = 60 pts

10 Labs @ 8 points each = 80 pts – some labs finish weeks after start.

10 Prelab sheets @ 2 points each = 20 pts

Weekly reading quizzes\* 9 @ 5 pts = 40 pts (lowest quiz dropped)\*

Lab Practicum = 10 pts

Group Experimental Project - PBL = 25 pts (requires attendance presentation day)

Plant Families Collection: 7@ 2pts each = 14 pts (extension extra credit up to 6 points)

Homework/Activities**+** (Variable pts) = ~10-12 pts

Vermicompost Journal & Teamwork = ~15

Final Comprehensive exam = 75 pts

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Total = ~**350 points** (Approximation)

**\***Lowest quiz score dropped – no retakes, no make-up quizzes, missed quiz is dropped.

**+**In class activities must be in class to gain points e.g. videos.

**Grading Scheme:**

A: 90 - 100%, B: 80 – 89%, C: 70 – 79%, D: 60 – 69%, F: 59.4% or below

**Course Outcomes:**

* **List ways that organisms communicate or respond to the environment.**
* **Be able to explain the ways that organisms acquire and utilize nutrients.**
* **Be able to explain the role of transport in organisms.**
* **Be able relate an organisms structure to its functions.**

**I. Classroom Policies**

**Attendance**: You are **required and expected to attend all lectures**. If a situation arises that makes it necessary to miss a class it is the student’s responsibility to obtain notes from a peer, this is not the same as just capturing the Moodle pdf, which is just a brief summary.

🡪No quizzes or lab work will be accepted if you were not in attendance for the class when the work was performed. This course is a lab science course, so it is expected that you will attend at least 70% of the labs to gain a passing grade. ***If a student misses more than 3 lab periods this will result in automatically failing the course, regardless of the overall percentage for the remainder of the course.***

**Children are not allowed in the classroom while students are attending class, this is in consideration of your peers to maintain a professional learning environment.**

**Wait List Priority:** If the class is full, registered students not attending the first session, without advance notice to the instructor, will be dropped from the class after the second class session and then students from the wait list can sign in for that position (on the lab day). Waitlisted students must attend class and get instructor signature to become registered students.

**Late Adds:** Students will not be added to the course after the first week of classes. All material covered the first week, including labs, is subject to being on the exams. Missing more than one week is very detrimental to a student’s grade. If a person adds by the last day of the first week, that student will make an appointment with the instructor to get caught up with the lectures, activities and lab exercises - and only then will the instructor sign the add form.

**Late Work:** Will **NOT** be accepted without supporting documentation to show your inability to meet deadlines e.g. a doctor’s note, jury summons, military duty or hospital admission form.

**Cell Phones**: As a courtesy to your fellow students and instructor, please turn off all cell phones and pagers during the instructional period. Please do not talk or text-message on your cell phone during a class session. Answering a phone call or text in class is considered disruptive and unprofessional.  ***If you leave class to answer/place a call/text message, you will be expected to leave for the rest of the day.\**** If during class (including lab days) the student will be warned only once, thereafter work for that day will not be scored, simply put your full focus is needed in class. ***Anyone who needs to have a phone connected*** (e.g., spouse close to labor, a child sick at home, on-call situation for one’s employer etc.) must clear it with the instructor *at the beginning* of the class period. Cell phones ***may not*** be used for calculators or during class, labs, or exams – it is expected that you will use calculators if necessary for computations these will be provided if you do not have one. Cell phones also should not be used for video or camera purposes to keep a comfortable, safe & positive learning environment for all students. If you wish to take pictures of specimens in the lab period, please communicate with the instructor before using it to understand use of media/phone guidelines.

**II. Credit Policies**

**Midterm Exam**: One 60 pt midterm in week 6 and one 75 pt ***final comprehensive*** exam. Tests are objective consisting of, but not limited to, multiple choice, matching, fill in the blank, short answer, identification, labeling, short lists, analysis of data sets, explaining correlations/associations etc. Scantron form needs to be supplied by student, purchase when you purchase books and other items in bookstore.

**Make up exams:** There will be **NO** make-up exams unless I am informed**, in writing**, PRIOR to the exam that you will need to miss it for a documentable reason. You need to talk with me directly for approval to make up an exam, exceptions are rare, but I do understand complications that can make it impossible to meet an exam date. Exams may NOT be taken early. An approved late takes must be made up before the next class session following an exam. I do not drop any exam grades. If you miss an exam, the grade will be a zero. On the exam day if you have a life situation arise then you must call me and leave a message on my voice mail ***541-917-4772*** or send me an immediate email (see page 1 for address). Only then, with your instructor’s expressed approval, will you be eligible to take an exam. You will then need to come into the next scheduled office hour period to take that exam. Early exams will not be allowed for any reason (including the booking of airline or events tickets) – so please plan accordingly.

**Pre-labs:** It is expected that you will ***bring your lab manual AND textbook to each lab period***. Additional materials may also be provided in the lab for reference, but these books and any photo atlases must stay in the classroom. You will be expected to submit the "Pre-lab" for a given week to demonstrate that you have read the associated textbook reading and the lab that will be performed for a given week. These pre-labs must be ***turned in at the beginning of the lab period.*** These are worth 2 pts each week. No credit will be given for labs not attended.

**Labs:** ***Unless instructor communicates otherwise*** assume lab sets are due at the end of the lab period. It is advisable to ***preview the lab and answer whatever questions from the textbook readings that you can BEFORE attending the lab***. Please be on time, sometimes we will go to the green house or possibly on a campus field trip and if you are not on time you will feel left out or possibly experience confusion because of missing the intro to the lab. Labs will be graded typically by Monday of the following week. Each student must turn in their own review question set, a group or pair submission of one lab report is NOT allowed. ***Subsequently each student must come prepared with their own lab manual.***

**Plant Families Collection:** Will be explained in more detail in week 2 of the course and is due week 8 of the course. This involves a collection of 7 specimens that are prepared on index cards identifying the unique plant family for 7 different groups, with identified characteristics unique to the family. These must be prepared in a standardized format and all be the same card stock size, the specimen thoroughly dried and prepared. This collection will be returned to the student on the day of the final exam.

**Weekly Reading Quiz:** On Wednesdays, starting in week 2 students will be given a 5 point quiz over that week’s reading material. This means that it is advisable to start the reading early in the week, if not the weekend before to be prepared. Students will be allowed to use a 3x5 notecard of hand written notes from the chapter to use for taking the quiz, card is optional. No make up quizzes are possible, but the lowest quiz or one missed quiz will be dropped. This is to ensure that students are coming prepared to lab day and can fully discuss the material assigned for a given week. These quizzes will be collected no later than 10 minutes after class has begun – arrive on time, ***no late takes because of tardiness***. Quiz material is solely over the textbook readings.

**Extra Credit:** On a few occasions, such as on the exams, there may be extra credit, which will be in the form of high-challenge questions that can aid your score. Even if you do not know the answer you are encouraged to try. This credit will generally not influence a grade more than 2% for the overall grade, but it could make a big difference in borderline grade situations.

Extra Credit will NOT be issued or allowed for missed work – there are no exceptions to this rule. My general policy for all students is that “I cannot do for one student what I cannot do for all.” Please do not ask for exceptions due to poor performance, no extra credit work will be granted, that is not equally accessible to all students.

**Problem Based Learning Experiment:** This group activity is an opportunity to improve your investigative and experimentation skills. It will be a project that begins in week 2 of the course, and involves coordination and collaboration with others that will require experimental set up, data collection and a brief write up of the experiment due in week 10 of the term. Points will accumulate throughout the term; the final lab report will be worth 10 points. ***One lab report is submitted per group,*** not one per person. Ten points is based on the poster presentation in week 10, and 5 points will be based on participation and demonstrated planning activities throughout the term.

**Vermicompost journal:** Starting in Week 2 students will engage in a term long project to set up and study a worm compost bin in teams of 8 people (we have currently 3 bins). Each week on a Monday when classes are held there will be approximately 10 minutes devoted somewhere in the class period to learn or investigate what is happening in the worm bin. A journal will be set up in week 1 and it is the student’s responsibility to add to the journal each week. Each activity is ~2pts

**III. Special Considerations**

**Special Accommodations**: I will be happy to make accommodations for students with disabilities or those with special needs. It is the student’s responsibility to make any needs known to me within the first week of the semester, *in writing*, so that I can give appropriate accommodation. This includes but is not limited to disabilities of visual, hearing, learning, dates needed for religious holidays, court dates etc. If you have not accessed disability services and think that you may need them, please contact CFAR (Center for Accessibility Resources) at 917-4789 or visit RCH 105. For those students with declared disabilities or note-taking needs a letter of accommodation should be brought to the instructor by the end of week 1.

**Academic Misconduct**: This will not be tolerated and includes any form of cheating. If a student is found to have cheated on a quiz or exam, after due process, the resulting grade may be a zero on the given assessment. All group work *must be written in the students* ***own handwriting*** *and language*. You must turn in your own interpretation and work even if doing team lab projects. When submitting group projects a rubric involving a score sheet and guidelines will be provided for expectations. Following group projects students will be expected to provide a self-critique report designed to communicate to your instructor the component of your individual contribution to a group project.

**Computers (Notebook/Laptop/PDA):** Students may NOT take notes on a computer such as a Notebook or Laptop or during class, without first discussing your need to do so with the instructor BEFORE bringing the laptop/tablet to class. On a wireless campus it is distracting to other students when a peer is not fully participating in the class due to attention on the web or other computer applications – the same policy is held for all hand held devices to keep your learning experience free from distractions.

**Incomplete Policy**: An incomplete (IN) will only be issued when a student is unable to complete the last exam by the end of the term, but has otherwise completed 75% of the work in class prior to the final exam. Each incomplete grade will be accompanied by a signed contract specifying the conditions necessary to complete the course. Incompletes are at the discretion of the instructor.

**Withdrawing from Classes (Dropping a Class After the Refund Deadline)**   
To drop a class or withdraw from school, you must turn in a Schedule Change form at the Registration Counter or at an community center or use the SIS system. If you withdraw from a course after the refund deadline, you will receive a "W" grade in the class. The student will forfeit all claims to refunds, and will be financially responsible for any tuition & fees. Failure to drop a class may impact your grade point average and financial aid eligibility. Note: For classes meeting 8 or more weeks, the deadline to withdraw from the class is 5 p.m. on Friday of week 7.

**Behavioral Expectations:** To create an engaging, safe and respectful classroom environment we will honor and appreciate that LBCC offers a learning environment free of discrimination. This course will honor a diverse array of perspectives, free of judgment and encouraging of free discourse. All students are expected to contribute to the learning environment and to share viewpoints in a respectful manner. Please be mindful that a mature, college environment recognizes that though there are differences we all seek to be recognized as a valuable member of our community.

**Comprehensive nondiscrimination policy:** LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws (for further information <http://po.linnbenton.edu/BPsandARs/> ). Policy 1015.

**Inclement Weather Policy:** If the campus is open class will be given (including lab days) and also including any scheduled exams. Only if the campus is closed will an exam be postponed, and this will occur on the next scheduled class date following the closure. If a late start is announced classes will resume on their usual scheduled times, early labs may resume and be held if the college opens during the scheduled lab period. No special exceptions will be made for those who could not make it to class - be prepared for alternate methods. Please listen to local media coverage for notice of closures such as T.V. & radio stations.

**Course Objectives:**

**By taking this course a student will be able to:**

* ***Recognize/Identify*** plant structures on various scales.
* ***Understand*** ***the relationship*** between structure and function of plants, and then will be able to ***explain this relationship*** in terms of adaptation(s) to the environment.
* ***Extract***, ***interpret***, critically ***evaluate*** and ***apply*** biological information from various media, such as books, articles, lectures and the Internet.
* Safely and skillfully ***use*** basic biological equipment and techniques to ***collect and evaluate data***. This includes but is not limited to plant specimens, microscopes, electrophoresis equipment, computer spreadsheets and models.
* ***Organize data*** into tables and graphs, to extract information and find patterns to ***draw sound conclusions***.
* ***Describe*** symbiotic relationships between plants and other organisms such as pollinators and fungi and ***understand*** the inter-dependence of these relationships.
* ***Discuss*** how plants can be manipulated for food production, fiber production and aesthetic purposes.
* ***Understand*** how plant science may help address ecological and societal issues such as hunger and global warming.
* ***Demonstrate*** the basic principles of Mendelian genetics, and ***explain*** how traits/characteristics are expressed by the genes.
* ***Paraphrase*** in simple terms some the major techniques of recombinant DNA technology, and ***describe applications*** of DNA technology in various fields.
* ***Identify*** the opposing viewpoints regarding the controversies and ethical concerns related to recombinant DNA technology. Evaluating the benefits and potential dangers of this technology.
* ***Discover*** and ***appreciate*** the unity, diversity, complexity and interdependence of life.

*"Gardening is a way of showing that*

*you believe in tomorrow."*

***Tentative Schedule: Dynamic Plant***

***Spring 2019***

**Week Chapter**

**Dates Readings Monday Wednesday Friday Lab Homework**

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| 1  4/3 | **Ch 1**  pg 250-252  pg 283-292  pg 150-152 | *No class* | Unit 1:  Intro to Plant Sci  & Sci. Method | Plant domestication  Seed Anatomy  & germination  **pg 137-145** | Buy materials  for class. |
| 2  4/8 | **Ch 3** | Plant Cells & Different types of microscopy.  *PBL projects* | Plant cell components  PBL sign-up (W) | Lab 2: Microscope &  Plant Cells | Parts of a Plant Cell –Labeling & Definitions (2)  **due 4/10 (W)** |
| 3  4/15 | **Ch 4**  **Ch 14**  pg 260-266 | Intro to Tissues | Plant tissues & Meristems  **Set up PBL group projects – PBL pts** | Lab 3:  Plant Tissues & Meristems | PBL outline (2)  **Due 4/15**  Tissues Table (2)  Due 4/17 or 4/19 |
| 4  4/22 | **Ch 11**  **Ch 9**  pg 159-162  **Ch 14**  Pg 260-266 | Plant Responses  Tropisms  Phytochromes | Plant Hormones & Regulation of Growth | Lab 4:  Plant nutrients  & propagation | Learning Table  Plant Nutrients  **HW use 160** (2)  Due 4/24 |
| 5  4/29 | **Ch 5** | Unit 2: A&P  Roots Anatomy  & Soils | Root variations,  Symbiosis & Soils | Lab 5:  Root lab | Botany #1 (2)  Root Anatomy  Due 5/3 |
| 6  5/6 | **Ch 6 &**  **Ch 9**  pg 153-159 | **Midterm Exam**  All material from week 1-5. | Stems  Anatomy & Fcn  Stem specialization | Lab 6: Stems & Transpiration expt. (groups) | Botany #2 (2)  Labeling parts of a tree stem  Due 5/10 |
| 7  5/13 | **Ch 7** | Leaf A&P | Stomata function  Special leaf adaptations | Lab 7: Leaves  ***Nutrients observ***  ***Lab 4 finish.*** | Botany #3  Labeling parts of leaf in class exercise - NG |
| 8  5/20 | **Ch 8**  Pg 125-129  **Ch 34**  pg 446-450 | Unit 3: Plant Repro  Parts of a flower | Pollination  Film: *Pollination Syndromes* | Lab 8: Flowers | In class video guide 5/22 (2)  **Plant Families**  **Project Due (M)** |
| 9  5/27 | **Ch 8 cont** | *Monday holiday* | Fruit Anatomy  **Monocot/Dicot Table Review** | **Lab Practicum**  Lab 9: Fruits & Adaptations | **Practicum** – Fri (10) **Plant Families**  **Project Due (W)** |
| 10  6/3 | **Ch 13**  pg 238-244  **Ch 14**  Pg 252-260 | Intro to genetics | **Poster Presentions**  & Finals review | Design a Plant Genetics Lab  Supplemental | **Group lab reports due 6/5**  **Must attach**  **1 article/student** |

**Comprehensive Final Exam: Time: 8-9:50 (WED)**

**Campus Closure days: April 1 (M) & May 27 (M)**