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### BIOO 105.00: Introduction to Botany

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# BIOO 105 - Introduction to Botany – Spring 2015

## Meeting times and place

Monday and Wednesday 10:10-11:00 am, CHEM 123

## Instructor Information

Dr. Anna Sala, NS 117a

Phone: 243 - 6009

email: [sala@mso.umt.edu](mailto:sala@mso.umt.edu) (please write BIOO 105 in email subject)

Office hours: Thursday 1:10-2 pm

## Lecture text

I will not follow any specific textbook. For unfamiliar students, I recommend 'Plants and People' by James Mauseth. Jones & Bartlett Learning, but other Introductory Botany textbooks will be useful as well.

## Laboratory manual

BIOO 105 Introduction to Botany Lab Manual. Anna Sala. Course pack. UM Bookstore.

## General Course Content

BIOO 105, Introduction to Botany, is a one-semester exploration of the world of plants that combines lectures and laboratory exercises. Plant Biology (Botany) is a very broad and rapidly growing discipline. In this course we will address some of the principal areas of botanical sciences, including a general understanding of plants from molecular, cellular, physiological and evolutionary (diversity) perspectives. An emphasis will also be placed on the societal uses of plants.

While the lecture and labs complement each other, the lab portion is a stand-alone component of the course. Some laboratory exercises will follow what has been covered in lecture, but others will not. Therefore, it is very important that you **read the lab manual in advance**. Laboratory materials and expectations will be discussed in lab. **Attendance in lectures and laboratories is mandatory**; you cannot pass the course without a lab grade, and **if you miss three labs or more you will not get a lab grade**.

## Course Objectives

- Learn and appreciate the importance and biological beauty of plants
- Acquire a basic understanding of the structure and function of plants
- Learn and appreciate the extraordinary diversity of organisms within the plant kingdom.
- Learn and appreciate the remarkable ability of terrestrial plants to grow, survive and reproduce despite the fact that they cannot move to search for food, shelter or mates.
- Learn how plants cope with their surrounding environment (including the presence of other organisms)

## **Exams and grading**

There will be 2 regular session exams and a final. The final will be partly comprehensive, but with an emphasis on the material covered after exam II. Each midterm exam will be approximately 100 points and the final approximately 150 points. The lab portion will be approximately 240 points (about 40% of the total grade). Again, you will not get a lab grade if you miss three labs or more. Your overall final grade for BIOO 105 combines lecture and lab exams & assignments.

## **Suggestions for success**

Regular attendance in lecture and lab is critical and mandatory. You will get the most out of classroom time if you prepare in advance. **I do not post full lectures online. I only post the visuals (pictures, drawings, etc.) but not the text in the slides.** I do this on purpose to encourage students to take good notes and remain engaged. I believe that learning is not simply the accumulation of information, but rather the ability to process this information and to place it into a broader, relevant context. A very effective way to do this is by taking good notes in class and then completing the notes after class. I encourage students to ask questions any time during lecture. I enjoy very much when student participation in class leads to spontaneous class discussions. This creates a more interactive teaching/learning environment which is beneficial to all of us. Study groups and discussions are extremely helpful and fun and I highly encourage it. I am glad to participate in study sessions if students ask me to. While working in groups is beneficial, students are expected to work alone during all exams, lab quizzes and completion of lab worksheets.

## **Office Hours**

My office hours are Thursday 1:10-2:30 PM. Please, come and see me if you need any help. It is very helpful when students have specific questions that they have thought about beforehand and they have tried to find an answer. If my office hours conflict with your schedule please let me know via email and we will set up a different time. In your email subject, please write BIOO 105, so I know you are a student requesting information. Otherwise, emails may inadvertently go unnoticed.

## **Special circumstances**

There will be no makeup exams. If you must miss an exam, compelling evidence must be provided, preferably in written form in advance of the scheduled time of the exam. Makeup exams will take place at one time only, approximately one week after the scheduled exam. NOTE: there will be NO early or makeup final exams, so please plan your travel ahead of time.

Please contact [Disability Services for Students \(http://www.umt.edu/dss/\)](http://www.umt.edu/dss/) if you need any accommodation. DSS is located in Lommasson 154. Only students registered with DSS will be considered for accommodation during exams. Please contact me one week before each exam if you require any service through DSS.

## **Drops, withdraws, change of grade status**

It is your responsibility to consult the Spring Class Schedule for important dates such as drop without penalty, traditional letter grade or pass/no pass option. It is also your responsibility to understand conditions allowing such status changes (consult student handbook).

## BIOO 105 Spring 2015 Tentative Lecture/exam schedule

<b>Date</b>	<b>Lecture topic</b>
26 Jan	Introduction: What are plants and why are they important?
28 Jan	Introduction: What are plants and why are they important?
02 Feb	What are plants made of? Chemistry of life, Plant cells
04 Feb	Plant tissue
09 Feb	Plant organs
11 Feb	Plant life histories: annuals, biennials, perennials
16 Feb	<b>Presidents Day (no class)</b>
18 Feb	Nutrients and water
23 Feb	Nutrients and water
25 Feb	Nutrients and water
02 Mar	<b>Exam I</b>
04 Mar	Photosynthesis and respiration
09 Mar	Photosynthesis and respiration
11 Mar	Photosynthesis and respiration
16 Mar	Genes, environment and development
18 Mar	Genes, environment and development
23 Mar	Reproduction
25 Mar	Reproduction
30 Mar-03 Apr	<b>Spring Break</b>
06 Apr	Genetics
08 Apr	Genetics
13 Apr	<b>Exam II</b>
15 Apr	Evolution and diversification
20 Apr	Evolution and diversification
22 Apr	Biogeography
27 Apr	Climate change
29 Apr	Climate change
04 May	Agriculture
06 May	Food plants
<b>13 May</b>	<b>Final exam (10:10 – 12:10)</b>

# **BIOO 105. Introduction to Botany. Laboratory Syllabus. Spring 2015**

## **Meeting place and times**

Natural Sciences (NS), room 202. Tuesdays.  
Sect. 2, 10:10-12:00; Sect. 3, 1:10-3:00; Sect. 4, 3:10-5:00

## **Lab Instructors**

- Gerard Sapés ([gerard.sapes@mso.umt.edu](mailto:gerard.sapes@mso.umt.edu))
- Nicole Hupp ([nicole.hupp@umontana.edu](mailto:nicole.hupp@umontana.edu))

## **Lab Manual**

Introduction to Botany Laboratory Manual. Spring 2015. Anna Sala.  
Course pack available at the UM Bookstore

## **Overview**

The laboratory component of this course provides an opportunity for hands-on learning. Your lab grade will contribute to about 40-50% of your overall course grade. Your laboratory instructor will explain student responsibilities for the lab during your first meeting. Be sure to read the laboratory exercise in the manual before each lab.

## **Grading**

Grading will be based on three scientific reports (detailed instructions and example on ERE), weekly worksheets submitted at the end of each lab, and weekly quizzes about the lab conducted the prior week. Some questions in the weekly quizzes will be about the lab to be conducted that week (i.e. read the manual ahead of time).

## **Homework**

Worksheets completed during the lab are due at the end of the lab. Reports are due at the beginning of the next lab. Late reports will be penalized with a 10% reduction of the grade per day late.

## **Lab Grading**

- |                                       |           |
|---------------------------------------|-----------|
| • Worksheets (9 @ 10 points each)     | 90        |
| • Quizzes (9 @ 10 points each)        | 90        |
| • <u>Reports (3 @ 20 points each)</u> | <u>60</u> |
| • Total                               | 240       |

## **Lab attendance**

There are no "make-up" labs, so attendance is essential and mandatory. If you miss three labs or more you will not pass the class.

## Lab Schedule

<u>Date</u>	<u>Lab</u>	<u>Topic</u>	<u>Assignment due</u>
Feb 3	Lab 1	Introduction; Plant Products; Planting; Data Management	
Feb 10	Lab 2	Experimental manipulations; Microscope	Quiz Report lab 1 Worksheet
Feb 17	Lab 3	Plant cells and tissues	Quiz Worksheet
Feb 24	Lab 4	Plant structure: leaves, stems and roots	Quiz
Mar 3	Lab 5	Secondary Growth and wood types	Quiz Report lab 4 Worksheet
Mar 10	Lab 6	Reproductive structures. Flowers fruits and seeds	Report lab 5 Worksheet
Mar 17	Lab 7	Photosynthesis	Quiz Worksheet
Mar 24	Lab 8	Non vascular plants	Quiz Worksheet
March 31		<i>No lab: Spring Break</i>	
Apr 7		Mount Sentinel Restoration (Field trip)	Quiz
Apr 14	Lab 9	Seedless vascular plants	Worksheet
Apr 21	Lab 10	Gymnosperms	Quiz Worksheet
Apr 28	Lab 11	Angiosperms, plant identification	Quiz Worksheet
May 5		Lab wrap-up and synthesis	Quiz lab 11, Final