MILWAUKEE AREA TECHNICAL COLLEGE
Liberal Arts and Sciences Division
NATSCI 184-500: Plant Biology
Fall 2008

Course: Plant Biology		**Credits:** 3
Subject Abbreviation: NATSCI	**Course Number:** 184	**Section Number:** 500
Class Meets*:* Tuesday and Thursday 4:00 - 5:55 pm in room A203		
Instructor: Mrs. Terry Bott		
Office: A211	**Office Hours:** Thursdays 3:00 – 4:00 pm	
Phone number: answering machine only 414-297-7777 ext. 73420		
E-mail: bottt@matc.edu **When emailing, you must always reference your course in the subject line, Plant Biology 184**		

Course Description:
This lecture/laboratory course provides students with an in depth study of the plant kingdom. The content includes, but is not limited to, plant cell anatomy and physiology, plant genetics, plant classification, plant anatomy and physiology, plant responses, plant life cycles and ecology. A survey of viruses, prokaryotes, protista and fungi as they pertain to plants is presented.

Prerequisites: None

ADA Statement:
If you have a disability that impacts your classroom performance and wish to request an accommodation, contact the Center for Special Needs at (414)297-6838. They may require documentation regarding your disability to enable them to comply with your request. Admission of a disability is voluntary and will be handled in a confidential manner. MATC does not discriminate against individuals with disabilities and fully complies with the Americans with Disabilities Act.
To ensure your academic success in this program, you are strongly encouraged to provide your instructor with a copy of the Instructor Notification Form from the Center for Special Needs. This should be done at the beginning of the semester.

Textbook: **Introductory Plant Biology** 11th Edition: Kingsley Stern, James Bidlack, Shelley Jansky. McGraw-Hill, 2008.

Course Schedule:
See calendar for lecture topics and lab schedule.

Assessment Activities*:*
Participants will be receiving a final grade based on the total number of points they accrue on the course work as described in the grading section below.

Grading

Four (4) **Exams** at 100 pts each	400 pts
Topic research paper	50 pts
Oral report	35 pts
Two (2) Lab Practicals at 100 pts each	200 pts
Lab exercises and reports at 10 pts each	130 pts
Participation	50 pts
Total	865 pts

Assignments	Points	Date Due	Brief description
Ecology research paper	50	October 30 Choose topic November 20 Final draft	Library research paper on ecology topic
Oral report	35	November 25	PowerPoint on research topic

The participant's final grade for the course will be determined in the following grading scale:
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Grade	Percentage	Total Points
A	94 – 100	813-865
A-	92 – 93	796-812
B+	89 – 91	770-795
B	85 – 88	735-769
B-	83 - 84	718-734
C+	80 - 82	692-717
C	75 - 79	649-691
C-	73 - 74	631-648
D+	70 - 72	605-630
D	68 – 69	588-604
D-	67	580-587
U	Below 67	Below 580

Tests/Assignments/Projects, etc. Make-up Policy: If the work is not turned in on the due date, it will be considered late. If it is turned in by the next class period, you will receive half credit. **If it is more than one week, you will get zero points.** If you fail to attend the lecture exams or lab practical without prior notice to the instructor, there will be no make-up opportunity and you will get a zero.

Attendance Policy: Attendance is required. Any student missing three or more classes will be automatically withdrawn from the class. Students are expected to attend class regularly and to arrive on time. Students who miss class will still be expected to meet deadlines for all course work and tests except with prior approval from instructor.

Instructor Recommended Withdrawals: You may be dropped for absenteeism when:

1. Your consecutive absences exceed the number of class meetings per week, or on the third consecutive absence in the case of classes that meet once each week.
2. Your attendance is sporadic (e.g., you miss seven class periods for a class meeting three periods a week), and you are unable to make up the instruction missed.
3. You fail to meet attendance requirements of licensing agencies.
4. You pose a safety hazard to yourself or others because of missed instruction critical to safe class or lab performance.
5. You are unable to make up instruction missed in a lab/shop class.
6. You have not attended class during the first two weeks of the term.

Academic Integrity & Other Behaviors: All MATC policies regarding academic misconduct (Plagiarism, cheating, etc.) will be enforced in this class. **Aggressive, offensive or other inappropriate behaviors will not be tolerated.** It is expected that you will conduct yourself in a professional manner at all times.

Instructor Support: Students are encouraged to contact the instructor before or after class, and during office hours, if they have questions or problems related to the class. It is suggested that students contact the instructor immediately in order to avoid falling behind in class. Please do not wait until the end of the semester to discuss issues that should have been resolved much earlier.

Academic Support Services: In addition to obtaining course-related assistance from the instructor, students can obtain assistance from the Academic Support Centers located at the Milwaukee, North, South, and West campuses. These centers are open to all MATC students. Services include, but are not limited to, assistance in computer applications, course assignments, Internet use, math, science, social studies, study skills, and writing. Please call the Academic Support Center at your campus for more information.

Dropping or Changing Courses: Students who are considering dropping the course should first discuss this with their instructor, counselor, or faculty advisor before dropping. They may be able to recommend an alternative course of action.

Students who wish to drop a course may voluntarily withdraw from the course up to two weeks before the last day of the semester. Course Change forms are available in the Registration office at the Milwaukee Campus or in Student Services at the regional campuses.

Student Complaint Procedure: MATC has established a formal system to assist students in resolving academic problems and course-related issues. In order for a complaint to be valid, the following steps must be followed in order:
Step 1: Meet with the instructor to discuss any questions related to the course (e.g., requirements or assignments) or if you are experiencing academic problems. If the issue is unresolved after meeting with the instructor,
Step 2: Meet with the associate dean of the department. If the issue is unresolved after meeting with the associate dean,
Step 3: Meet with the dean of the department. If the issue is unresolved after meeting with the dean,
Step 4: Go to the Office of Student Life for assistance.

Exit Learning Outcomes Addressed In This Course

Core Abilities

A. Communicate effectively.

Indicators

1. Learner uses effective oral communication skills.
2. Learner uses effective written communication skills.
3. Learner applies standard rules of language structure, including grammar and spelling.
4. Learner listens actively to others.
5. Learner derives meaning from text.
6. Learner communicates in a bias-free manner.
7. Learner supports viewpoints with evidence.

* Collaborate with others.

Indicators

1. Learner demonstrates respect in relating to people.
2. Learner cooperates and resolves conflicts effectively.
3. Learner participates in shared problem-solving.

* Respect diversity.

Indicators

1. Learner acknowledges personal prejudices and biases.
2. Learner appreciates perspectives of people outside his/her own background/culture.
3. Learner works collaboratively with people from other backgrounds/cultures.
4. Learner demonstrates sensitivity to global issues.

* Demonstrate responsibility.

Indicators

1. Learner attends class as scheduled.
2. Learner turns in quality work.
3. Learner adheres to safety rules and regulations.
4. Learner acts professionally to fulfill job duties within chosen field.
5. Learner demonstrates flexibility and self-directedness in learning.
6. Learner acknowledges a responsibility to the global community (cultural, economic, environmental, political).
7. Learner practices environmental sensitivity in his/her profession.

* Think critically.

Indicators

1. Learner differentiates between fact and opinion.
2. Learner considers other viewpoints and perspectives.
3. Learner presents logical arguments.
4. Learner evaluates sources of information to solve problems.

* Utilize technology.

Indicators

1. Learner uses technology to communicate.
2. Learner solves problems using technology.
3. Learner uses appropriate technology to manage information.
4. Learner recognizes the impact of technology.

* Apply math and science.

Indicators

1. Learner applies math concepts and principles appropriately.
2. Learner applies scientific concepts and principles appropriately.
3. Learner interprets meaning from quantitative data.
4. Learner interprets meaning from scientific data.

Plant Biology: NATSCI: 184-500
*Course Calendar Fall 2008

Week of	Lecture Topics	Lab
August 24	Orientation and introduction to course *Chapter 1: What is Plant Biology?*: Human dependence on plants; scientific method; hypothesis	
August 31	*Chapter 2: The Nature of Life* characteristics and organization of living things; bonds; macromolecules	Use of microscope Tour campus grounds Observations
September 7	*Chapter 3: Cells:* cell types; organelles; cell walls; mitosis; cell cycle *Chapter 9: Water in plants:* diffusion; plasmolysis; active transport, nutrients	Cell components; mitosis; osmosis
September 14	*Chapter 4: Tissues* : Meristems; tissue types, xylem; phloem; epidermis *Chapter 5: Roots and Soils*: root structure; growth patterns; soil profile; soil texture and structure Chapter 24: *Flowering Plants:* overview of plant families	**Thursday**, **Sept. 18 - Meet at the UW-Milwaukee Field Station in Saukville** Tissues Roots Soil
September 21	**EXAM 1 – Tuesday, September 23** *Chapter 6: Stems:* woody stems; dicot; monocot; specialized stems; wood uses *Chapter 7: Leaves: different* types; arrangements; structure; leaf and stem modifications	**Thursday Sept 25 -- Meet at the UW-Milwaukee Field Station in Saukville** Stems Leaves Flowers Fruits Seeds
September 28	*Chapter 8: Flowers, Fruits and Seeds:* Monocot; dicot; flower structure; inflorescence types; fruit types; fruit and seed dispersal; seed structure	Flower and seed dissection Supermarket botany
October 5	*Chapter 10: Plant metabolism*: energy transfer; photosynthesis; respiration *Chapter 11: Growth:* plant hormones; Growth movement and light; phytochrome	**Lab Practical 1** **Thursday, October 9**
October 12	**EXAM 2 – Tuesday, October 14** *Chapter 12: Meiosis and Alternation of Generations* *Chapter 14: Plant Propagation (pp 258-264)*	Tree identification Plant propagation

October: 19	*Chapter 13: Genetics*: DNA structure, replication, Mendelian genetics *Chapter 15: Evolution*: Darwin; natural selection; Hardy-Weinberg law; gene pools; speciation; co-evolution	Genetic problems DNA extraction
October 26	*Chapter 16: Plant Names and Classification:* nomenclature; Kingdom concept cladistics *Chapter 25: Ecology* *Chapter 26: Biomes*	Riveredge Nature Center
November 2	*Chapter 17:Domain Bacteria, Domain Archaea, and Viruses* : Cyanobacteria; methane bacteria; virus structure Chapter 18: Kingdom Protista: Green, brown, yellow and red algae	Bacteria Algae Ecology topic
November 9	**EXAM 3 – Tuesday, November 11** *Chapter 19: Fungi: Chytrids, Zygomycota, Sac Fungi, Basidiomycota (club fungi), life cycles, lichen* *Chapter 20: Introduction to the Plant Kingdom: Bryophytes:* Liverworts, hornworts, mosses, life cycles	Fungi Lichen moss
November 16	*Chapter 21: The Seedless Vascular Plants: Ferns and their Relatives:* whisk ferns, Lycopodium, Selaginella, Isoetes, horsetails, ferns, fossils **Ecology Research Paper due Thursday, November 20**	Vascular plants
November 23	**Oral Reports – Tuesday, Nov. 25** *Chapter 22: Introduction to Seed Plants: Gymnosperms:* conifers, life cycle, Ginkgo, Cycads, Gnetophytes	**Thanksgiving break – Thursday, November 27**
November 30	*Chapter 23: Seed Plants: Angiosperms:*	Plant families
December 7	**EXAM 4 and Lab Practical 2 – Thursday, December 11**	

The instructor reserves the right to modify this schedule as student progress, resource and/or curricular needs arise.