

BIO102 Course Syllabus

Biological Sciences II



COURSE TITLE:	<u>Biological Science II</u>	PREFIX & NUMBER:	<u>BIO 102</u>
LECTURE HOURS:	<u>4.5/week</u>	LAB HOURS:	<u>4.5/week</u>
CONTACT HOURS:	<u>6.0</u>	CREDIT HOURS:	<u>4.0</u>

Catalog Description:

This course is a continuation of introductory biology and includes classification of organisms, structural and functional considerations of all kingdoms, particularly major phyla as well as viruses. Vertebrate animals and vascular plants are emphasized.

Prerequisite: BIO 101

Required Materials:

- Sylvia Mader BIOLOGY, Ninth Edition, 2007
McGraw – Hill Publishing Company, Inc.
- Sylvia Mader, BIOLOGY Laboratory Manual, 2007
McGraw-Hill Publishing Company, Inc.
- Dissection Kit, Rubber Gloves, and Protective Eyewear for Dissections



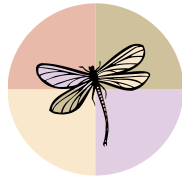
Each student is responsible for securing instruments for the dissection of preserved organisms. An individual or a group of not more than three students may meet this requirement.

- **IMPORTANT:** Due to the fact that we are working with chemicals, preserved specimens, and dissection instruments, students are not permitted into the laboratory with sandals or open-toed shoes.

Suggested Materials:

- Dissection Guide: Van de Graff and Crawley, Photographic Atlas for the Biology Laboratory, Publishing Company.
- Lab Coat or Cover Shirt





Core Competencies:

All courses approved for the general education core curriculum develop a student's critical thinking and communication skills. This course develops critical thinking skills through instruction that emphasizes the understanding of the interrelationships between all phyla of biological organisms. This will be demonstrated by assessments throughout the semester and on the final exam. Students will demonstrate critical thinking in the following areas:

- Understanding how the structures of viruses, bacteria, protists, plants, and animals are related through their cellular nature and a taxonomic scheme.
- Dissecting specimens and comparing external and internal structures and describing the distinguishing anatomical and physiological characteristics that pertain to basic metabolic functions and morphogenesis.
- Comparing anatomical and physiological systems of lower animals to those found in the human body.

This course develops communication skills through instruction that emphasizes a presentation of organism based biology and their interrelationships in appropriate and clear language. The student will demonstrate the following communication objectives:

- The student will be able to properly spell and pronounce the scientific names and anatomical structures of the organisms discussed in the class.
- The students will collaborate in groups in the laboratory during specimen dissection. They will discuss the structures observed and their function and compare them to other organisms observed in prior lab exercises.
- The students will discuss anatomical and physiological systems of the human body.

Accommodations for Students With Special Needs:

The College will make reasonable accommodations for persons with documented disabilities. Students should notify the Counselor for Students with Disabilities (located in Building 410, Room 210) and their instructors of any special needs.



<u>Grading Scale for BIO102</u>	<u>Make-up Test Policy</u>																												
<p>Grading is accomplished by combining all points that you have earned for lecture exams, quizzes, laboratory assignments/practicals and converting this sum to a percentage score. Grades will be generated according to the following scheme.</p> <p>4 Lecture Exams @ 100 Points = 400 Points 2 Laboratory Exams @ 100 Points = 200 Points 10 Laboratory Quizzes @ 15 Points = 150 Points 5 Lecture Quizzes @ 20 Points = 100 Points 1 Final Exam @ 150 Points = 150 Points</p> <table style="margin-left: 40px;"> <tr> <td>1000</td> <td>-</td> <td>910 Points</td> <td>=</td> <td>A</td> <td>=</td> <td>91%</td> </tr> <tr> <td>909</td> <td>-</td> <td>810 Points</td> <td>=</td> <td>B</td> <td>=</td> <td>81%</td> </tr> <tr> <td>809</td> <td>-</td> <td>710 Points</td> <td>=</td> <td>C</td> <td>=</td> <td>71%</td> </tr> <tr> <td>609</td> <td>-</td> <td>650 Points</td> <td>=</td> <td>D</td> <td>=</td> <td>65%</td> </tr> </table>	1000	-	910 Points	=	A	=	91%	909	-	810 Points	=	B	=	81%	809	-	710 Points	=	C	=	71%	609	-	650 Points	=	D	=	65%	<p>Make-up tests require the student to document a serious reason for having missed the examination. A doctor's note or other letter explaining the absence will be required. If the conditions are not met, the student will receive a zero for the exam. Only one make-up exam is allowed per term. All make up exams will be essay in nature and must be taken within one week of the students return to class. Lecture quizzes and lab quizzes cannot be made up. However, the lowest score will be dropped.</p> <p>Make-up exams will not be provided for missed lab midterm or final exams.</p>
1000	-	910 Points	=	A	=	91%																							
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Students may determine how well they are progressing by dividing the number of points earned by the number of points attempted and multiplying the result by 100. For example, if a student has earned a total of 257 points by taking the first three 100 point lecture tests, the student's average grade would be 85.6% according to the following calculation.

$$\frac{\text{Points earned } 257}{\text{Points attempted } 300} \times 100 = .856 \times 100 = 85.6\%$$

Incompletes:

The grade of Incomplete (I) represents incomplete work and is a temporary grade that must be approved by the instructor at the end of the course. In the instances where a grade of (I) may be requested, documented evidence of medical or family emergency must be provided and the student must have a passing grade in the course. The student must complete the requirements by the following midterm or the grade will be changed to an (F).

Lecture Preparation:

Biology lecture notes and practice exams can be downloaded from the BIO102 web page at <http://home.comcast.net/~jroyce> Specific course objectives can be found on the web page and are provided at the beginning of each chapter. These objectives serve as an instructional guide to the material in the chapter. Lecture and lab schedules will be provided as a supplement to this syllabus.

At least six 20-point unannounced quizzes will be given in each lecture section.

Laboratory Procedures:

Lab topics have been chosen and organized to follow closely the lecture topics. A schedule of lab activities is included in this syllabus and should be referred to PRIOR to each lab meeting. Students are expected to prepare for lab by reading the scheduled exercise. Data is usually collected and logged on forms included in the lab manual. Therefore, it is imperative that you bring your lab manual to every session. Students are required to wear safety glasses, latex gloves and protective footwear during laboratory dissections.

Due to the large enrollment, lack of lab space, and complexity of lab set ups, lab exercises you miss will not be made up in the lab. However, two of the lab quiz grades may be dropped from your final lab total. If you can attend another lab section where seating is available, full credit will be given. Twelve 10-point quizzes are scheduled to be given the end of each lab period. The questions will be derived from the information in your lab manual and from the techniques used during the lab.

Each student is responsible for securing instruments for the dissection of preserved organisms. A group of not more than three students may meet this requirement.

Laboratory Practical Examinations will be given at midterm and at the end of the term. They will consist of questions related to materials and techniques used in the lab exercises.

Due to the complexity of the lab tests with specimen dissections, microscope set-ups and the lab time required to take the tests, make-up exams will not be provided.

For your safety, if you have a medical condition that results in seizures, blackouts, etc. (e.g., from epilepsy, diabetes), please inform your instructor before the first laboratory session. This information will be kept confidential. If you wish to seek accommodations due to a disability, please contact Services for Students with Disabilities, Building 410, Room 210.
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Electronic Communication Devices in the Classroom:

To minimize classroom disruptions and protect the integrity of test-taking situations, activated electronic communication devices such as pagers and telephones are generally not permitted in classrooms at Trident Technical College. The exception to this policy will be for on-call emergency personnel (police, fire, EMS), who will be required to notify their classroom instructor of their need for such devices at the beginning of the term.

Veteran Students Enrolled in Online & Distance-Learning Sections:

To confirm that you are actively involved in this course you need to contact the instructor at least once per week. Forms of contact can include (but are not limited to) posting/receiving emails, participating in online class discussions or chat rooms, and completing and submitting course assignments. Please see the instructor's addendum for any additional instructions.

Department of Biology Attendance Policy:

Regular attendance in lecture and lab is mandatory. Although students will not be graded on their attendance directly, class attendance and punctuality are vital both for better comprehension of the material and for participation in class activities.

Each student is responsible for any and all materials covered in class, including lecture notes, quizzes or assignments that are missed if absent. Quizzes may be given at any time during the lab or lecture and may not be made up if missed.

In accordance with college policy, the final course grade for any student whose absences exceed 20% of the scheduled meeting time, 18 hours for this course, may be reduced by one letter grade.

Instructor Availability:

Your instructor is available to you outside of class for academic assistance. Full-time faculty maintain and post regularly scheduled office hours. Part-time faculty are accessible in a variety of ways, which may include conferences before and after class or by appointment, telephone conferences, and E-mail.



BIO 102 Lecture Schedule for Spring 2009

WEEK	TOPIC	ASSIGNMENT
Week 1:	Introduction and Orientation to Biology II	
	Classification of Living Things	Chapter 20 pp. 341-357
	Viruses	Chapter 21 pp. 360-367
Week 2:	Bacteria	Chapter 21 pp. 367-376
	Algal Protists	Chapter 22 pp. 379-388
	Animal Protists	Chapter 22 pp. 389-394
Week 3:	EXAMINATION 1	
	Fungi	Chapter 23 pp. 397-409
	Seedless Nonvascular and Vascular Plants	Chapter 24 pp. 413-423
Week 4:	Seed Plants – Gymnosperms	Chapter 24 pp. 424-427
	Seed Plants – Angiosperms	Chapter 24 pp. 428-434
	Plant Structures and Function	Chapter 25 pp. 437-443
Week 5:	Roots, Stems, and Leaves	Chapter 25 pp. 444-456
	Plant Nutrition and Transport	Chapter 26 pp. 459-470
	EXAMINATION 2	
Week 6:	Animal Development – Phylum Porifera	Chapter 29 pp. 517-521
	Phyla Ctenophora, Cnidaria, Nemertea	Chapter 29 pp. 522-526
	Phyla Platyhelminthes, Nematoda, Rotifera	Chapter 29 pp. 526-533
Week 7:	Protostomes and Phylum Mollusca	Chapter 30 pp. 535-541
	Phyla Annelida and Arthropod Crustaceans	Chapter 30 pp. 542-549
	Phylum Arthropoda – Uniramians	Chapter 30 pp. 550-553
Week 8:	Chelicerates & Echinoderms	Chapter 30 pp. 553-556
	EXAMINATION 3	
	Lower Chordates and Primitive Fishes	Chapter 31 pp. 559-562
Week 9:	Higher Fishes: Chondrichthyes & Osteichthyes	Chapter 31 pp. 563-565
	Amphibians	Chapter 31 pp. 565-570
	Reptiles	Chapter 31 pp. 571-573
Week 10:	Birds	Chapter 31 pp. 574-576
	Mammals	Chapter 31 pp. 574-576
	Primates	Chapter 32 pp. 577-592
Week 11:	EXAMINATION 4	
	Circulatory System	Chapter 34 pp. 611-623
	Blood	Chapter 34 pp. 624-628
Week 12:	Digestive System	Chapter 36 pp. 653-663
	Nutrition	Chapter 36 pp. 664-666
	Neurons	Chapter 39 pp. 697-705
Week 13:	Brain Function	Chapter 39 pp. 706-715
	Senses – Taste, Smell, Vision	Chapter 40 pp. 719-727
	Senses – Hearing & Touch	Chapter 40 pp. 728-732
Week 14:	Male Reproductive System	Chapter 43 pp. 773-779
	Female Reproductive System	Chapter 43 pp. 780-791
	FINAL EXAMINATION	

BIO102 Laboratory Schedule for Spring 2009

Mader Biology Lab Manual 9th Edition

LAB WEEK	ASSIGNMENT
1	Lab Orientation, Lab Safety, and Microscope Review Lab Exercise 2.4 + Microscope Handout Sheet
2	Lab Exercise 14.1 Taxonomy and Survey of Bacteria Lab Exercise 14.1 Gram Stain of Bacteria
3	Lab Exercise 14.2 Kingdom Protista – Photosynthesizing Protists - Algae Lab Exercise 14.2 Kingdom Protista – Heterotroph Protists - Protozoa
4	Lab Exercise 15 Survey of the Kingdom Fungi Lab Exercise 16 Survey of the Plant Kingdom - Nonvascular Plants
5	Lab Exercise 16 Survey of the Plant Kingdom - Lower Vascular Plants Lab Exercise 17 Survey of the Plant Kingdom - Gymnosperms
6	Lab Exercise 17 Survey of the Plant Kingdom – Angiosperms Lab Exercise 18 Plant Anatomy
7	MIDTERM LAB EXAM
8	Lab Exercise 22 Phyla Porifera and Cnidaria Lab Exercise 22 & 33 Phyla Platyhelminthes, Nematoda, & Rotifera
9	Lab Exercise 23 Phylum Molluska – Clam & Squid Lab Exercise 23 Phyla Annelida – Earthworm
10	Lab Exercise 23 Phylum Arthropoda - Crayfish Lab Exercise 23 Arthropoda & Echinoderms – Grasshopper & Starfish
11	Lab Exercise 24 Lower Chordates Lamprey Eel and Perch Dissections
12	Lab Exercise 24 Frog Dissection
13	Lab Exercise 26 & 27 Fetal Pig Dissection
14	FINAL LAB EXAM

Due to the irregularities of scheduling and vacation dates, some of the labs may vary from week to week. Lecture and lab schedules are tentative and are subject to change with approval from the Chairman of the Department of Biological Sciences.

