NORTH SHORE COMMUNITY COLLEGE
DANVERS, MASSACHUSETTS

COURSE OUTLINE
Winter/Spring 2009

COURSES: *BIO 103-R1 (13539), Anatomy and Physiology I*
BIO 103-R2 (14740), Anatomy and Physiology I

INSTRUCTOR: *Professor Noel Ways*

TEXT: *Anatomy and Physiology, by Frederic Martini, Pearson/Benjamin Cummings Pub. Co., © 2007*

LAB MANUAL: *Laboratory Manual for Anatomy & Physiology, 3erd edition, by Michael G. Wood, Pearson/Benjamin Cummings Pub. Co., © 2006*

ADDITIONAL SUPPLIES: tape recorder, safety glasses or goggles, colored pencils, dissection kit, 2 1/2" binder.

LOCATION	*Lec (R1 & R2):*	*H 211*	*MWF*	*1:30 – 2: 40*
AND TIME:	*Labs:*	*H 217*	*(R1 – M) (R2 – W)*	*3:00 – 4: 50*

COLLEGE COURSE DESCRIPTION:

Anatomy and Physiology 1

Pre: Communications Proficiency
This is the first semester of a one-year course that studies the human body. It is primarily designed for those students pursuing majors in the health professions. Topics include basic chemistry, cells, tissues, and the skeletal, muscular, and nervous systems including the organs of special sense. Laboratory work is designed to supplement the lecture material. Fulfills, open, liberal arts, and with BIO 104, the laboratory science sequence electives. (4 hours of lecture and 2 hours of laboratory per week)

INSTRUCTIONAL OBJECTIVES:

The course, Human Anatomy and Physiology I, is designed to begin the process of building an essential foundation of the human body for students who will pursue a career in the medical and paramedical curricula or other related fields. The following is a broad listing of major course objectives. Note that this list is

partial, and designed only to provide an overview of course objectives.

1. *Students will describe and use anatomical terminology applicable to writing of medical reports and reading of professional literature associated with their discipline.*
2. *Students will be able to identify all major body systems with their essential functions, particularly as they relate to homeostatic maintenance.*
3. *Students will be asked to describe the homeostatic paradigm, and provide and example of both positive and negative feedback systems.*
4. *Each student will be exposed to essential chemical principles necessary for further discussion of physiological concepts in both A&P I and A&P II.*
5. *Each student will recognize about twelve different tissues found in the body and relate how they function in several locations where they can be found.*
6. *The student will identify major components of the Integumentary System and their functions. The students will also explain the relationship of the integument to associated homeostatic control mechanisms. The student will explain in writing the process of deep wound healing, while taking into account the logical progression of events through time.*
7. *The student will be able to describe the structural makeup of osseous tissue and explain why the system exists. Key homeostatic mechanisms involved in the maintenance of normal blood calcium levels will be explained and illustrated. Lastly, the process of bone growth will be explained in writing, and how growth hormone affects the overall process.*
8. *The student will then be required to identify both name and function of most bones of the body as well as numerous processes, fosses, etc. of the same.*
9. *The student will then focus on articulations and be able to identify the various types of joints, identify essential range of movements, and lastly understand the basic anatomy of the synovial joint.*
10. *The next unit will revolve around muscle tissue and the muscular system. Here, the students will be able to recognize essential anatomy of muscle tissue and their associated physiology.*
11. *Following this the student will take a close look at how energy, in the form of ATP is produced in cellular respiration. The entire essential metabolic pathway will be examined and the student will be expected to identify all critical actions and processes for these metabolic pathways.*
12. *The student will be able to identify select muscle groups as well as their origins and insertions and the specific action of each muscle.*
13. *The final unit of study will be an examination of the nervous system. Here*

the student will recognize nervous tissue types and be able to identify their respective functions. The students will also demonstrate in writing his/her understanding and explanation of nerve impulse propagation.

14. *Following nervous tissue, the students will look at the function of the spinal cord with particular emphasis on spinal reflexes. The student will be able to illustrate select reflexes and appropriately label them.*
15. *The student will then be required to identify the basic parts of the human brain and their respective functions. But beyond this, the student will be able to explain how the different parts work in a coordinated manor.*
16. *Lastly, the student will have a basic understanding of the autonomic nervous system and how each branch effects the viscera, with particular emphasis on the "fight and flight response" vs. maintenance of homeostasis.*

TEACHING PROCEDURES:

The lecture sequence will be presented in a systematic fashion with accompanying overheads to facilitate organization and understanding of the lecture material. Significant emphasis will be placed upon physiological processes, where appropriate, with an aim toward an appreciation for the integration of various physiological processes.

The laboratory is designed to give the students a "hands on" appreciation for the anatomical considerations being discussed in lecture and to familiarize the student with some of the more basic physiological considerations as they relate to gross anatomy. The laboratory period will also be used for lecture purposes.

GRADING POLICY

Five non-comprehensive lecture exams are given. Three laboratory practical exams will be administered. The first two practicals will be combined into one exam grade equivalent. The third practical will be the equivalent of one lecture exam. A semi-cumulative final exam will be administered at the end of the semester and equivalent to one lecture exam; the topics for which will be provided toward the end of the semester. Grade assignment is based upon an absolute scale, see chart below. To summarize:

Five Lecture Exams	=	*500 points*
First Two Laboratory Practicals (50 points each)	=	*100 points*
Third Laboratory Practical (100 points)	=	*100 points*

Final Exam	=	*100 points*
Drop lowest Grade	=	*-100 points*
		700 points

Grading Policy:

A	*4.0*	*93-100*	*B-*	*2.7*	*80-82*	*D+*	*1.3*	*67-69*
A-	*3.7*	*90-92*	*C+*	*2.3*	*77-79*	*D*	*1.0*	*60-66*
B+	*3.3*	*87-89*	*C*	*2.0*	*73-76*	*F*	*0.0*	*0-59*
B	*3.0*	*83-86*	*C-*	*1.7*	*70-72*			

ATTENDANCE POLICY:

Attendance of every lecture and every lab is strongly encouraged, as material will be presented that may not be otherwise covered in the text. A student will not be penalized for failure to attend a class; however, it should be noted that lecture exams and laboratory practicals will have strong representation from class instruction. A name call will be taken for registrar tracking purposes.

NOTES

- ***Students with Learning Disabilities*** *- North Shore Community College welcomes students with disabilities to engage in an interactive, collaborative partnership with Disability Services and faculty in order to meet your educational and academic needs. If you have a disability-related need for reasonable academic accommodations in this course and have not yet met with a Disability Counselor, please visit www.northshore.edu/disability and follow the outlined procedure to request services. If Disability Services has formally approved you for an academic accommodation in this class, please present me with your "Faculty Notice of Academic Accommodations" during the first week of the semester, so that we can address your specific needs as early as possible. If you will require assistance during an emergency evacuation on campus, please notify me immediately. For your reference, evacuation procedures are posted in all classrooms.*
- ***The Syllabus*** *Please keep a copy of this syllabus as a record of course content for future application purposes.*
- ***Recording of Lectures*** *Recording of the lectures is always permitted. The use of lap-top computers or word processors is encouraged if it helps the student integrate the material. Feel free to use a digital camera to photograph laboratory dissections, models, or any other supportive tool.*

You may videotape the lecture if you like. In short, you may do anything you deem necessary to master the subject matter as long as it is legal, ethical, and non-disruptive.

- ***Attendance*** *of every lecture and every lab is strongly encouraged, as material will be presented that may not be otherwise covered in the text.*
- ***Tardiness*** *Please be on time. Tardiness is disruptive to both the students and the instructor. If you are late, please make sure that you are marked down on the attendance sheet before you leave.*
- ***Cellular Phones*** *Unless you anticipate an emergency call, please turn your phones off.*
- ***Alternative Textbook*** *If the student chooses to use an alternative textbook, or an edition other than the one required for this course, it is the responsibility of the student to obtain information that is either not covered or otherwise not approached in similar manner as in the required text, as deemed necessary by the student.*
- ***Textbook Usage*** *The role of the textbook is to be a supportive tool to the lectures. The student is not expected to memorize the entire textbook, but to use it to reinforce concepts and material presented during lecture.*
- ***Web Site*** *The web site associated for this course can be found by doing a search on you browser for your instructor's name, or typing in the following address: http://faculty.necc.mass.edu/nways/index.html*
  Once the site is accessed, select your course and there you will find your lecture outlines, handouts, and other support material. There is also an email button for correspondence with your instructor.
- ***Lecture Outlines and Supplemental Materials*** *are to be found on the internet. Should you have difficulty downloading any of the material at home, then you are encouraged to do this task at the school. All materials should be downloaded and organized in a three ring binder by the third week of classes.*
- ***Computer Lab Access*** *may require a current student ID.*
- ***The Schedule*** *below is a tentative but probable schedule of topics and dates. The schedule will be modified according to the progress of the lectures. The exam dates are target dates and will represent only material actually covered in class. Specifics regarding content will be given as the exam date approaches.*
- ***Exam Dates*** *Please note exam dates on the schedule below.*
- ***Exam Filing*** *All exams are returned to the instructor and filed after being handed back for review.*
- ***Make-up Exams*** *are to be avoided! If a make-up exam is needed, fill out a*

make-up petition form (found on web) and provide requested documentation. If a doctor's note is submitted, then a make-up exam is permitted. If a doctor's note is not submitted, a penalty is applied at the discretion of the instructor, and the instructor reserves the right to refuse the make-up. If there is to be a make-up, this task must be accomplished as soon as the student returns to school in good health, and within 5 school days. Lab practicals are very difficult to make up. Generally, if you miss a lab practical, this will be the exam grade you drop.

- ***Exam Grades*** *are not given over the internet.*
- ***Tutoring*** *The college provides free tutoring services during Fall and Spring semesters. Contact the academic support center for the days and times. Tutoring is a free service of the college and designed to assist students who desire to excel in their mastery of the material as well as those struggling.*
- ***Identification*** *of all texts, recorders, and lab manuals is important. Please put you name and phone number on all personal belongings. If you leave something behind, you may be contacted as to where to pick it up.*
- ***Unscheduled School Cancellations*** *Should class be cancelled, the student is expected to master the material that is scheduled for that day on the downloadable outline. Should additional instructions be necessary, they can be found on the web site, under "announcements". During the subsequent class period, some topics may be reviewed, but responsibility for mastery of the material is upon the student.*
- ***Contact Information*** *See email address for contact link. When emailing, always identify yourself and the class that you are in. Always have the subject line appropriately filled in. I will not open mail that is not properly identified.*
- ***Recommendations*** *Should you seek a letter of recommendation to future programs, please provide the instructor with appropriate information and deadlines that you are facing and a stamped and addressed envelope. Finally, to assure that your application is complete, please contact the school after a reasonable period of time to assure their having received the letter. Contact me if there are any problems.*

Laboratory

- ***Clothing in Lab*** *Students are advised to never wear valuable clothing to lab as laboratory procedures may result in permanent damage to clothing.*
- ***Safety Eyewear*** *must be used during dissection exercises. Acceptable eyeware must have a rating of "Z87.1".*
- ***Eating*** *during laboratory time is prohibited.*

- **Children** *Due to safety concerns, children are never permitted in the lab.*

Winter/Spring, 2010 Schedule

This schedule is tentative and will be adjusted according to the progress of the lectures. Please also be aware that this course is accelerated and unabridged, and therefore significant daily study time is mandatory for mastery of the material. Lastly, due to the accelerated nature of the course, exams are frequent.

Week of	*LECTURE*	
January 24	*Organization of the Human Body*	*Ch 1*
January 31	*Chemistry of Life*	*Ch 2*
February 7	*Cytology -* ***EXAM #1***	*Ch 3*
February 14	*Histology*	*Ch 5*
	February 15 (M) College Closed - President's Day	
February 21	*Histology, cont,. The Integumentary System*	*Ch 5, 6*
February 28	*Skeletal Tissue, Axial Skeletal Sys -* ***EXAM #2***	*Ch 7*
March 7	*Axial and Appendicular Skeletal Sys -* ***Lab Exam #1***	*Ch 7*
March 14	*Cellular Respiration -* ***EXAM #3***	*Ch 4*
	March 17 (W) College Closed- Evacuation Day	
March 21	*Spring Break – No Class*	--
March 28	*Cellular Respiration, Myology -* ***Lab Exam #2***	*Ch 4, 9*
April 4	*Articulations and Muscular System*	*Ch 8, 9*
April 11	*Nervous Tissue -* ***EXAM #4***	*Ch 10*
April 18	*Nervous Tissue -* ***Lab Exam #3***	*Ch 10*
	April 19 (M) College Closed - Patriots' Day	
April 25	*Spinal Cord, Brain, Auto NS*	*Ch 11*
May 2	*Brain, Auto NS, cont.; Special Senses*	*Ch 11*
May 9	***EXAM #5*** *and Review*	
May 17-19	***Final Exam Period***	

Anatomy and Physiology I Exam Contents

(Modification of content or dates will be announced in class, should any be made)

Exam #1:

Organization of the Human Body
Chemistry of Life

Exam #2

Cytology
Histology
Integumentary System

Laboratory Practical #1

Tissues

Exam #3

Skeletal Tissue
Axial Skeletal System
Appendicular Skeletal System

Laboratory Practical #2

Bones

Exam #4

Articulations
Myology
Muscular System

Laboratory Practical #3

Movements
Cellular Respiration

Exam #5

Nervous System
Spinal Cord
Brain
Autonomic Nervous System

Final Exam

List to specific topics will be available on line
Toward the end of the semester

Anatomy and Physiology I Grade Sheet:

Name: _____

Drop any lowest Grade:

Exam #1 ☐

Exam #2 ☐

Exam #3 ☐

Exam #4 ☐

Exam #5 ☐

Lab Practicals 1 and 2 (Average) ☐ 1. ☐ 2. ☐

Lab Practical 3 ☐

Final Exam ☐

_____

Average ☐

_____

Numerical/Grade Equivalents

A	4.0	93-100	B-	2.7	80-82	D+	1.3	67-69
A-	3.7	90-92	C+	2.3	77-79	D	1.0	63-66
B+	3.3	87-89	C	2.0	73-76	D-	0.7	60-62
B	3.0	83-86	C-	1.7	70-72	N	0.0	0-59

Letter Grade ☐