

COURSE SYLLABUS (final)

COURSE NUMBER & NAME: BIO 005—The Human Body: Levels of Organization for the English Language Learner

LECTURE HOURS: 3 lecture hours

CREDITS: 3 Institutional Credits

COREQUISITES: ESL 051/052, ESL 085, ESL 095 or permission of the Chair of the Biology Department and/or Director of ESL

PREREQUISITES: ESL Level 4 or ESL Placement Test

CATALOGUE DESCRIPTION:

This course is an introduction to the basic mechanisms underlying the organization of the human body. These levels of organization provide the building blocks upon which the human body functions; understanding this will enhance the students' ability to understand the fundamental concepts of anatomy and physiology. Students will also gain a level of comfort in using scientific vocabulary.

Through studying the foundations of life, chemistry and cells, the student will learn how the body uses these basic mechanisms to enable the body to function in a healthy state.

COURSE OBJECTIVES/STUDENT LEARNING OUTCOMES:

Upon completion of the course, students should be able to:

- 1) State the basic concepts of chemistry as they apply to living things.
- 2) List the fundamental concepts in cell biology.
- 3) Explain the anatomy of the healthy human body.
- 4) List the major tissues and organ systems of the human body.
- 5) State the fundamental structure and function of the integumentary system.
- 6) Appropriately use terminology related to the structure and function of the human body.

RATIONALE

The proposed linked Biology (BIO 005) and ESL courses (ESL 051/052, ESL 085 and ESL 095) have been successfully piloted during the Fall'08 and Spring '09 semesters, creating a comprehensive ESL Allied Health Learning Community for advanced ESL Level 5 students. The BIO 005 course will increase the success of ESL students in their future Biology courses.

TRANSFERABILITY

The course is non-credit and not transferable to other colleges.

RESOURCES AND COSTS

Courses will be staffed utilizing existing faculty. No new faculty will be required.

COURSE OUTLINE

Week	Unit/Content	Assignments/Readings
1 1/27	Taking a Science Course Study and Test Taking Skills Introduction to the Anatomy of the Body Language of Anatomy Body Planes and Cavities Body Regions	Introduction to Peer Tutoring Chapter 1 Power point presentation Handout Peer Group Work
2 2/3	Levels of Organization in the Body Hierarchy of Levels – Survey of Levels Emergent Properties Review for Exam	Chapter 1 Power point/Handout Peer Group Work
3 2/10	EXAM 1 – Based on Weeks 1 and 2 Level of Organization: Chemical Inorganic Chemistry Structure of the Atom Elements, Compounds and Molecules Chemical Reactions and Bond Formation Cations and Anions	Chapter 2 Power point/Handout Display of Elements Lab Demonstrations/Handouts* Peer Tutoring
4 2/17	Organic Chemistry: Chemistry of Carbon Carbohydrates Fats Proteins Enzymes and Enzyme Activity DNA –Human Heredity and Cancer	Chapter 2 Power point/Handout Lab Demonstrations/Handouts* Human Genetics Home Study* Reports on Diabetes and Heart Disease* Peer Tutoring
5 2/24	Level of Organization: Cellular Definition of the Cell Structure and Functions of the Cell Introduction to the Microscope Review for Exam	Chapter 3 Power point/Handout Lab Visit – Microscope Work Cheek Study/Handout *
6 3/3	EXAM 2– Inorganic Chemistry Organelles of the Cell and Their Functions Transport – The Cell Membrane Active Transport Passive Transport Diffusion, Osmosis and Filtration	Chapter 3 Power point/Handout Lab Demonstrations of Passive Transport/Handout* Peer Tutoring
7 3/10	Organelles (continued) Mitochondria, Nucleus, Endoplasmic Reticulum, Ribosomes and Golgi apparatus	Chapter 3 Power point/Handout Film: Cancer

	Mitosis and Cancer	Cancer Assignment* Peer Tutoring
8 3/24	Level of Organization: Tissue Definition of a Tissue Formation of a Tissue from a Cell Stem Cell Research Basic Types of Tissues and Functions Review for Exam	Chapter 3 Power point/Handout Film: Stem Cell Research Stem Cell Assignment* Peer Tutoring
9 3/31	EXAM 3 – Organic Chemistry and the Cell Level of Organization: Organ Definition of an Organ Structure Complements Function The Humerus Bone The Heart The Stomach	Chapter 1 - Definition Power point/Handout Display of Organs Chap. 6; pp. 122-123 Chap. 12; pp. 300-305 Chap. 15; pp. 397-400 Peer Tutoring
10 4/7	Level of Organization: Organ Systems Definition of a System Survey of the Systems Review for Exam	Chapter 4 Power point/Handout Chap. 1 Chap. 4; pp. 80-92 Chap. 1; pp.14-16 Peer Tutoring
11 4/14	EXAM 4 – The Tissue and Organ Levels The Integumentary System (The Skin) Structure and Functions of the Skin Homeostasis	Chapter 5 Power point/Handout Film: The Skin Peer Tutoring
12 4/21	Structure and Functions of the Skin (Continued)	Chapter 5 Power point/Handout Peer Tutoring
13 4/28	Disorders of the Skin: Infection and Skin Cancer Burns and Decubitus ulcers Review for Exam	Chapter 5 Power point/Handout Selected Web Sites Peer Tutoring
14 5/5	EXAM 5 – Organ Systems, The Skin and Skin Disorders Three Major Health Concerns Cancer, Diabetes mellitus and Heart Disease (Reports turned in and reviewed)	Power point/Handout Class Discussion

***Written reports to be evaluated for the final grade**

CRITERIA FOR STUDENT EVALUATION:

Grading will be based on:

5 tests	70%
Written Reports	20%
Class participation	10%

REQUIRED TEXT

Structure & Function of the Body, Gary Thibodeau and Kevin Patton, 13th ed, Mosby, 2008

COURSE REQUIREMENTS:

Grades and related concerns may only be discussed with the student during office hours and/or after class. They may not be discussed via telephone or email.

Exams are designed to evaluate understanding and not just memorization and are primarily multiple choice. All information covered in class or assigned in the text may be used to prepare the questions you will need to answer. Bring a #2 pencil for all exams. Attendance for all exams, as scheduled, is required! Students should use scores on these exams to monitor their progress in the course and help understand their strengths and weaknesses as they prepare to move on to other courses.

Testing Policy: Rules regarding test-taking are always considered to be in effect from the moment you enter the room. This includes but is not limited to: you may not leave the room once you have started the test unless you hand in your test as finished; you may not have written material of any kind within your view; no talking; etc.

Students arriving more than 15 minutes late are considered to have missed the exam. Once the first student finishes and leaves the room, no test papers will given to any entering students.

Missed test policy and exam make-up policies are teacher specific; ask your specific instructor about the policies for your class/section.

The instructor may assign you to a different seat for an exam. Do not be insulted, this is to protect the integrity of the exam.

See your instructor one class BEFORE the exam if you have any issues affecting compliance with the above policies.

The participation grade is a judgment by the instructor, based upon your participation, behavior in class, attendance, being on time and the prompt submission of written assignments.

Pagers and cell phones must be turned off before entering class.

Attendance is mandatory and obtaining any missed information is the sole responsibility of the student.

SUGGESTED TEACHING METHODOLOGIES:

Teaching methodologies will include:

1. Lecture combined with laboratory demonstrations
2. Class discussions and small group peer tutoring
3. Power point presentations
4. Films
5. Several online resources.

BIBLIOGRAPHY OF ONLINE RESOURCES

Inorganic Chemistry

Atomic Structure

<http://library.thinkquest.org/10429/low/atomic/atomic.htm>

Basic Chemistry (excellent review)

<http://www.personal.psu.edu/staff/m/b/mbt102/bisci4online/chemistry/chemistry1.htm>

Periodic Table of Elements-Los Alamos Laboratories

<http://periodic.lanl.gov/default.htm>

Common Laboratory Tests

<http://library.thinkquest.org/2923/tests.html#gas>

Surface Tension

<http://www.galaxy.net/~k12/matter/surfacet.shtml>

Matter and Energy

<http://web.jjay.cuny.edu/~acarp/NSC/2-matter.htm>

The Electrolytes

<http://health.howstuffworks.com/question565.htm>

Medical Uses of Salt (sodium chloride)

<http://health.howstuffworks.com/uses-for-salt-medical-treatments-ga.htm/printable>

Suspensions and Solutions

<http://www.galaxy.net/~k12/matter/suspsol.shtml>

Organic chemistry

Cholesterol in Depth

<http://healthguide.howstuffworks.com/cholesterol-in-depth1.htm>

Enzymes

<http://www.goldiesroom.org/Note%20Packets/04%20Biochemistry/06%20Biochemistry--Lesson%206.htm>

All About Enzymes

<http://www.lewport.wnyric.org/jwanamaker/animations/Enzyme%20activity.html>

Learning about Calories

http://kidshealth.org/kid/stay_healthy/food/calorie.html

Cellular Level

The Virtual Cell

<http://personal.tmlp.com/Jimr57/tour/cell/cell.htm>

Molecules on the Move – Effect of Temperature on Diffusion

<http://www.galaxy.net/~k12/matter/movemol.shtml>

Tissue Level

Loyola University Histology

http://www.meddean.luc.edu/LUMEN/MedEd/Histo/frames/histo_frames.html

University of Delaware Histology

<http://www.udel.edu/biology/Wags/histopage/colorpage/colorpage.htm>

University of Kansas Medical Center Histology

<http://www.kumc.edu/instruction/medicine/anatomy/histoweb/>

University of Wisconsin Medical School Histology

<http://www.histology.wisc.edu/histo/uw/htm/ttoc.htm>

University of Florida Histology Tutorial

<http://medinfo.ufl.edu/year1/histo/>

Delta Base Histology Atlas

<http://www.deltagen.com/target/histologyatlas/HistologyAtlas.html>

MSU Histology Study Guide

<http://kobiljak.msu.edu/CAI/Histology/HistologyTitle.htm#>

Organ Level

The Femur

<http://www.bbc.co.uk/science/humanbody/body/factfiles/leg/femur.shtml>

How the Heart Works?

<http://health.howstuffworks.com/heart2.htm>

What are the Symptoms of Heart Failure?

<http://health.howstuffworks.com/heart-failure-symptom.htm>

What are the Odds of a Heart Attack

<http://videos.howstuffworks.com/science-channel/4948-what-are-the-odds-heart-attack-video.htm>

The Heart

<http://www.bbc.co.uk/science/humanbody/body/factfiles/heart/heartbeat.shtml>

The Integumentary System

See What Skin Cancer Looks Like

<http://www.revolutionhealth.com/conditions/cancer/skin-cancer-melanoma/see-what-skin-cancer-looks-like>

Pictures of Skin Cancer

http://www.righthealth.com/Health/Pictures_Of_Skin_Cancer/-od-definition_adam_2%25252F19679-s

Ringworm of the Scalp

<http://xpedio02.childrenshc.org/stellent/groups/public/@Manuals/@PFS/@Condill/documents/PolicyReferenceProcedure/018294.pdf>

Skin Cancer Videos

<http://www.healthination.com/Videos/Skin-Cancer>

Common Skin Infections

<http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/dermatology/commonskin/commonskin.htm>

What is Cellulitis?

<http://www.medicinenet.com/cellulitis/article.htm>

Skin Cancer

<http://www.skincancer.org/blogsection/skin-cancer/>

Definition of Skin

<http://www.medterms.com/script/main/art.asp?articlekey=7901>

How the Skin Works?

<http://health.howstuffworks.com/define-the-skin.htm/printable>

Common Skin Infections

<http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/dermatology/commonskin/commonskin.htm>

Cellulitis

<http://www.medicinenet.com/cellulitis/article.htm>

Bad Bugs Picture Slideshow

<http://www.medicinenet.com/bad-bugs-pictures-slideshow/article.htm>

Skin Cancer Foundation

<http://www.skincancer.org/blogsection/skin-cancer/>

The Skin

<http://www.medterms.com/script/main/art.asp?articlekey=7901>

How Sunburn Works

<http://videos.howstuffworks.com/howstuffworks/131-how-sunburns-work-video.htm>

Common Adult Skin Problems

http://www.emedicinehealth.com/slideshow-skin-problems/article_em.htm

Bad Bugs and Their Bites

http://www.emedicinehealth.com/slideshow-bad-bugs/article_em.htm

Organism Level and Disease

Mayo Clinic

<http://www.mayoclinic.com/>

American Institute for Cancer Research

<http://www.aicr.org/site/PageServer>

CNN - Health

<http://www.cnn.com/HEALTH/>

Centers for Disease Control and Prevention

<http://www.cdc.gov/>

Loyola University Medical Education Network – Anatomical Cross Sections
http://www.lumen.luc.edu/lumen/meded/grossanatomy/x_sec/mainx_sec.htm

National Library of Medicine – Lesson Plan: Preventing the Spread of Disease
http://apps.nlm.nih.gov/againsttheodds/online_activities/lesson_plan_society.cfm

National Library of Medicine – Games and Other Resources
http://apps.nlm.nih.gov/againsttheodds/online_activities/index.cfm

American Medical Association – Atlas of the Body
<http://www.ama-assn.org/ama/pub/category/7140.html>

Symptom Checker – Where does it hurt?
<http://www.qualityhealth.com/psp/symptomChecker.jsps>

The Human Body
http://hrsbstaff.ednet.ns.ca/kmason/human_body_webquest.htm

**CORRELATION OF PROGRAM or GENERAL EDUCATION OUTCOMES,
 STUDENT OUTCOMES, ASSESSMENT METHODS, & DATA COLLECTION**

Union County College Goals	Biology Department-Human Biology and Anatomy and Physiology Goals	Outcome Assessments
Goal I: Provide a series of relevant general education courses for all students	Students will be able to describe how scientific theories explain the natural world. 1. Students will describe an understanding of living organisms as part of the world and the impact of living organisms on the world. 2. Students will define the chemical relationships in biology and how these affect the living organism. 3. Students will state the biological principles underpinning the structure and function of the human body. 4. Students will apply an understanding of the terminology, concepts and principles of biology. 5. Students will be able to apply critical thinking and problem solving skills to solve and understand problems. 6. Students will be able to utilize effective verbal and written communication skills.	Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations
Goal II: Provide transfer programs and courses for students who want to continue their education at four year institutions.	Through the development of improved learning and study skills, and increased knowledge and awareness, students will be encouraged to continue their education. 1. Students will be able to transfer skills and abilities learned at UCC to other institutions of higher education including those institutions granting baccalaureate or higher degrees.	Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations
Goal III: Provide career	Students will develop an awareness of the ramifications, interrelationships, and impact of science/technology on economic,	Examinations, assignments,

programs to prepare students to function in a technologically and socially changing world.	<p>social, and political arenas.</p> <ol style="list-style-type: none"> 1. Students will state how biology department courses enable them to learn and enhance skills that will allow them to improve their career skills. 2. Through practice in the educational settings, graduates will be able to independently and appropriately utilize technology. 3. Students will become proficient in utilizing basic laboratory and field methods, equipment, and techniques. 	practical examinations, research paper(s), group discussions, oral presentations
Goal IV: Provide developmental courses for students who need to prepare for college level credit courses.	<p>Students will demonstrate effective learning strategies to allow them to succeed in biology courses.</p> <ol style="list-style-type: none"> 1. Students will have successfully completed ESL courses prior to taking any biology courses. 2. Students will be encouraged to form study groups to increase learning and study skills. 3. Students will be able to utilize tutoring services in the Academic Learning Center to demonstrate improved learning and study strategies. 	Assignments, group discussions, oral presentations
Goal VI: Provide support services for all students.	<p>Students will recognize the support services offered by UCC as well as biology department faculty.</p> <ol style="list-style-type: none"> 1. Students will participate in activities that encourage interaction with fellow students thus improving their understanding of the growth which comes from interacting with others. 2. Biology department faculty will make students aware of their office hours and other instances in which they will be available to help students succeed in UCC course offerings. 3. Students will be reminded of the availability of tutoring in the Academic Learning Centers on all campuses. 	Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations
Goal VII: Provide college services and resources to accommodate a diverse student population.	<p>Students will be able to state how biological issues have a local, national, and global impact on human beings.</p> <ol style="list-style-type: none"> 1. Students will demonstrate the ability to communicate effectively with others in a diverse society. 2. In order to accommodate differing learning styles, students will participate in multi-media learning environments. 3. Courses will be scheduled to meet the needs of working students. 4. Students will be encouraged to work in small groups to establish and enhance learning skills. 5. After meeting with the Counselor for Students with Disabilities, students with disabilities will meet with program faculty to jointly plan how reasonable accommodations can be structured. 6. Tutoring will be provided by the Academic Learning Center and, where appropriate, by peers or faculty members to enable students to succeed. 	Research paper(s), group discussions, oral presentations
Goal VIII: Provide opportunities for life-long learning and personal enrichment.	<p>Students will be able to describe the scientific method and give examples of how it is used in everyday life.</p> <ol style="list-style-type: none"> 1. Students will identify the benefits of continuing their education. 2. Students will demonstrate the ability to learn independently. 3. Students will demonstrate competency in utilizing assistive technology to enable them to enhance their knowledge. 4. Students will state the relationship of the scientific method to 	Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations, surveys

	<p>the real" world.</p> <p>5. Students will state how biological advancements may have a positive or negative impact on society.</p>	
<p>Goal IX: Develop workforce development programs through alliances with hospitals, universities, business, industry and professional and governmental groups to met the changing workforce requirements.</p>	<p>The biology department will reach out to the community to assist in providing programs that are responsive to their needs.</p> <ol style="list-style-type: none"> 1. Students will identify the benefits from participating in community/service learning. 2. Program faculty will, where appropriate, maintain membership in national, state and /or county professional organizations. 	<p>Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations</p>
<p>Goal X: Serve as a cultural center for the community and surrounding areas.</p>	<p>Through participation in UCC courses and programs, students will partake in diverse educational experiences both within and outside of UCC.</p>	<p>Assignments, research paper(s), group discussions, oral presentations</p>
<p>Goal XI: Enhance teaching and learning through the use of instructional technology.</p>	<p>Students will be able to select a scientific theory, discovery, or technology and discuss its impact on society.</p> <ol style="list-style-type: none"> 1. Students will demonstrate an understanding of the scientific method and be able to utilize it to understand the real world. 2. Students will demonstrate entry level competency in using basic laboratory and field methods, equipment and techniques necessary to perform the tasks to complete their biology courses. 3. Students will indicate which technology can best aid them in performing job tasks. 4. Students will state which technology best enables them to effectively achieve the required data to answer the questions raised by their biology courses. 5. Students will demonstrate competency in using the computer as a research and learning tool. 	<p>Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations, surveys</p>
<p>Goal XII: Offer distance learning courses and programs.</p>	<p>Students will enhance their ability to use the computer as a research and learning tool.</p> <ol style="list-style-type: none"> 1. Students will distinguish between effective and non-effective Web sites for accessing current information relating to learning needs. 2. Students will, where appropriate, identify the benefits from contacting each other via chat rooms or email in order to assist each other with program related learning needs. 3. Students will demonstrate the ability to contact instructors through electronic means. 	<p>Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations</p>
<p>Goal XIII: Provide the UCC community with state of the art information resources and services in facilities designed to foster intellectual, technical, and vocational growth.</p>	<p>Students will have an appreciation of the positive and negative impact of biological advancements on society.</p> <ol style="list-style-type: none"> 1. Students will identify the availability of, and proficiently utilize, program related library resources. 2. Students will recognize the role of the library as a resource tool for professional and personal needs. 3. Students will demonstrate the ability to contact the library from remote areas. 4. Students will inform faculty of additional resources which may 	<p>Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations</p>

	be of benefit to the educational program.	
Goal XIV: Increase the diversity of the College faculty, staff and administration.	<p>Students will gain an understanding an appreciation of the diversity of the living world through their participation in biology department lecture and laboratory experiences.</p> <ol style="list-style-type: none"> 1. Students will participate in learning situations in diverse environments. 2. Students will appropriately interact with people of culturally diverse backgrounds. 	Examinations, assignments, practical examinations, research paper(s), group discussions, oral presentations