Human Biology (w/ Lab) Syllabus

BIO K115 (4 semester hour credits)
CRN – 10212 -- Lecture Section T1
M & W (8:00-9:15am) Room D-124
CRN – 10213 -- Laboratory Section T1A
F (8:00-10:55am) Room A-215
Spring 2018

Instructor: Peter Jukkola, PhD
Phone: (860) 942-2986
Email: pjukkola@trcc.commnet.edu
Office hours by appointment
Three Rivers Community College
Norwich, CT 06360

Required Text: Goodenough J and McGuire B (2014). Biology of Humans: Concepts, Applications and Issues, 5th Ed, Pearson/ Prentice Hall, 527p.

Catalog description: This introductory course focuses on a presentation of human structure and function, including a survey of the body's system for students who want to be more knowledgeable about the life processes of their own bodies. Lab procedures do not involve animal dissections. This course does not meet the pre-admission requirement for the Nursing Program. Three-hour lecture; one three-hour laboratory period.

Primary Objectives: In addition to developing an understanding of human life processes, the student will be aided in developing understandings of the normal structures and functions of the human body. The student will also be aided in developing an understanding of the biological sciences as it may relate to other disciplines and the interdependence of all life forms and the natural laws in operation that ensure stability to these life forms. Finally, the student will be encouraged to become more aware and/or more knowledgeable in relation to current biological concerns such as pollution, chemical food additives, and genetic engineering and their physiological effect on the human body.

Attendance policy: Students are expected to attend class and laboratory sessions. If a class or lab is missed due to circumstances beyond your control, please be sure to notify your instructor and make the necessary arrangements to obtain the lecture notes. You will be responsible for the material. If 4 classes or labs are missed, 5 points will be deducted from your final grade. If 6 or more classes or labs are missed, 10 points will be deducted.

College Withdrawal Policy: A student who finds it necessary **to** discontinue a course once class has met must provide written notice to the registrar. Withdrawal forms are available at the Registrar's office on both campuses and the office at the Sub-base. Non-punitive "W" grades are assigned to any withdrawal requested before the various unrestricted withdrawal deadlines, **See Registrar for dates.**

Grade Evaluation: There will be three examinations and two laboratory practicals. Exams will not be cumulative, but will test the material covered since the previous exam. The third exam will be given during Final Exam week. There will be eleven quizzes, and the lowest quiz grade will be dropped. Exam and quiz questions will consist of multiple choice and/or short answers.

Grading: The final grade will be based on the following percentages:

Semester grade: 60% = 50% exams + 10% quizzes

Laboratory grade: 40% = 30% lab practicals + 10% lab reports

Final Grade:

Grade	Grade%	GPA		Grade	Grade%	GPA
A+	100.0-99.0	4.00		C+	79.9-79.0	2.33
A	98.9-92.0	4.00		C	78.9-72.0	2.00
A-	91.9-90.0	3.67		C-	71.9-70.0	1.67
B+	89.9-89.0	3.33		D+	69.9-69.0	1.33
B	88.9-82.0	3.00		D	68.9-62.0	1.00
B-	81.9-80.0	2.67		D-	61.9-60.0	0.67
				F	59.9-0.0	0.00

Disability Accomodations: If you have a disability which may require classroom or test-taking modifications, please see me as soon as possible. All testing accommodations MUST be discussed with the instructor in a timely manner, that is, *at least* one to two class meetings **prior** to any scheduled test for which accommodations are needed. If you have not already done so, please be sure to register with the college disability counselors by contacting Student Services Office.

- Matt Liscum, Counselor: (860)215-9265 (Room A-113)
  - Learning Disabilities
  - ADD/ADHD
  - Autism Spectrum
  - Mental Health Disabilities

- Elizabeth Willcox, Advisor: (860)215-9289 (Room A-113)
  - Medical Disabilities
  - Mobility Disabilities
  - Sensory Disibility

Digication: All students are required to maintain an online learning portfolio in Digication that uses the college template. Through this electronic tool students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her learning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which

will provide additional learning opportunities. If desired, students will have the option to create multiple portfolios.

BOARD OF REGENTS FOR HIGHTER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY

Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:

"The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence."

UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY:

"Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient's educational programs and activities."

If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact Vicki Baker, the Diversity Officer and Title IX Coordinator: 860-215-9208 (vbaker@trcc.commnet.edu)

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BIO K115 Human Biology w/Lab **(Spring 2018)**

Tentative Lecture and Laboratory Schedule
Lecture: M & W (8:00-9:15am) Room D-124
Laboratories: F (8:00-10:55am) Room A-215

Week	Date	Day	Lecture Topic	Chapter	Date	Lab Topic
1	1/17	W	Biological organization	Ch. 1	1/19	Scientific Method
2	1/22	M	Chemical organization of life	Ch. 2-3	1/26	Microscopy
	1/24	W	Cellular organization			
3	1/29	M	Body tissues	Ch. 4	2/2	Cellular biology
	1/31	W	Organ systems			
4	2/5	M	Musculoskeletal system	Ch. 5-6	2/9	Tissues
	2/7	W	Musculoskeletal system (cont.)			
5	2/12	M	**EXAM 1**		2/16	**No Lab-- President's Recess**
	2/14	W	Blood	Ch. 11		
6	2/19	M	**No class-- President's recess**		2/23	Skin
	2/21	W	Cardiovascular system	Ch. 12		
7	2/26	M	Cardiovascular system	Ch. 12	3/2	Lab Practical
	2/28	W	Lymphatic system			
8	3/5	M	Immune system	Ch. 13	3/9	Skeletal and muscular
	3/7	W	Respiratory system	Ch. 14		anatomy
9	3/19	M	Nervous system	Ch. 7-8	3/23	Special Senses
	3/21	W	Sensory systems (cont.)	Ch. 9		
10	3/26	M	Nervous system (cont.)	Ch. 7-8	3/30	**No Lab -- Day of reflection**
	3/28	W	Review for exam 2			
11	4/2	M	**EXAM 2**		4/6	Cardiovascular system
	4/4	W	Endocrine system	Ch.10		
12	4/9	M	Digestive System	Ch. 15	4/13	Forensics
	4/11	W	Cellular Respiration			
13	4/16	M	Urinary system	Ch. 16	4/20	Nutrition
	4/18	W	Reproductive system	Ch. 17		
14	4/23	M	Special topic TBA		4/27	Lab Practical
	4/25	W	Special topic TBA			
15	4/30	M	Special topic TBA			
	5/2	W	Review for Exam 3		5/4	Respiratory system
16	5/7	M	**EXAM 3**			

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Human Biology

BIO K115
Topical Outline

- **I.** Biological organization
  - **a)** characteristics of life
  - **b)** organizational schemes of life
  - **c)** scientific method
- **II.** Chemical organization of life
  - **a)** structure of matter
  - **b)** atoms, molecules, and bonding of the elements
  - **c)** organic versus inorganic compounds
  - **d)** groups of bioorganic molecules of humans
  - **e)** energy and metabolism
- **III.** Cellular organization
  - **a)** the cell theory
  - **b)** organelles and cellular structure
  - **c)** mitosis and meiosis
  - **d)** plasma membranes and chemical transport through them
  - **e)** cellular respiration
- **IV.** Human structural organization
  - **a)** tissues
  - **b)** organs
  - **c)** systems and homeostasis
  - **d)** body cavities and membranes
- **V.** Coordinating mechanisms of the human body
  - **a)** nervous system
  - **b)** sensory system
  - **c)** endocrine system
- **VI.** Human support and locomotion
  - **a)** skeletal system
  - **b)** muscular system
- **VII.** Human life support mechanisms
  - **a)** digestive system
  - **b)** cardiovascular system
  - **c)** immune system
  - **d)** respiratory system
  - **e)** excretory system
- **VIII.** Human reproduction and development
  - **a)** meiosis and gametogenesis
  - **b)** male and female reproductive systems
  - **c)** human development
- **IX.** Human genetics
  - **a)** chromosomal inheritance
  - **b)** molecular genetics
  - **e)** gene inheritance
  - **d)** genetic disorders

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Specific Objectives of the Course:
Upon completion of this course, the student should be able to correctly answer questions about or discuss ideas and issues associated with the following objectives.

A) Describe biological organization:
1. Be able to discuss characteristics of life and relate human characteristics to them.
2. Describe the basic organizational schemes of living organisms.
3. Describe the scientific method of inquiry.

B) Describe the chemical organization of living organisms:
1. Distinguish between matter and energy.
2. Discuss the organizational aspect of matter.
3. Distinguish between organic and inorganic compounds.
4. Describe and identify the four major groups of bioorganic compounds making up humans.
5. Describe and identify the major groups of inorganic compounds making up humans.
6. Define metabolism.

C) Describe cellular structure and function:
1. Discuss the importance of cells.
2. List and describe the major structural aspects of cells
3. Describe and list the major organelles of cells.
4. Describe mitosis.
5. Describe the plasma membrane structure.
6. Discuss methods of nutrient and chemical transport into and out of cells.
7. Briefly describe cellular respiration.

D) Describe basic human structural organization:
1. Describe the functions, structure, classification, and identification of tissues.
2. Define organs and using skin as an example, describe its basic structure.
3. Relate cell, tissue, organ, organ system, and homeostasis to human organization.
4. Describe body cavities and their lining membranes.

E) Discuss mechanisms for coordinating the human body by describing:
1. The human nervous system by:
   - **a.** Describe neurons, impulses, and synapses.
   - **b.** Describe the organization of the central nervous system.
   - **c.** Describe the organization of the peripheral nervous system.
   - **d.** Describe sense receptors with a focus on the ear and the eye.
2. The human endocrine system by:
   - **a.** Define hormones and describe their basic method of action and control.
   - **b.** Describe the major endocrine glands and the hormones produced by them.

F) Describe the support and locomotion mechanisms of the human body by describing the skeletal and muscular system:
1. Describe functions of overall bone structure.
2. Identify the bones of the human skeleton.
3. Classify joints and joint movement.
4. Describe functions of and overall structure of a muscle.

5. Describe the basic mechanics of muscle contraction.
6. Be able to identify the major muscles of the muscular system.

G) Describe the major life-support mechanisms of the body by discussing the following:

1. Describe the process of digestion:
   a. Discuss the basic anatomy of the G-I tract.
   b. Describe the digestion and absorption of food.
2. Describe the cardiovascular system:
   a. Discuss the flinctional and structural organization of the circulatory pathway.
   b. Describe the structure of the heart and discuss how its beat is maintained
   c. Describe the circulation of blood through the body.
   d. Describe the structure and function of blood.
3. Describe the basic mechanics of immunity.
4. Describe the makeup of the respiratory system:
   a. Describe the airway.
   b. Describe the mechanics of breathing.
   c. Describe the exchange of oxygen and carbon dioxide gases
5. Describe the organization of body fluids and their maintenance:
   a. Organize the body into fluid compartments and discuss their mechanics of balance.
   b. Describe the urinary system.
   c. Describe the process of urine formation.

H) Describe the process of human reproduction and development:

1. Describe meiosis and gamete formation.
2. Describe the structure and function of the male and female reproductive systems.
3. Discuss the basic process of human development.

I) Describe human genetics:

1. Discuss the significance of chromosomes in heredity.
2. Describe chromosomal inheritance.
3. Describe the structure of DNA and its relation to heredity.
4. Briefly describe the process of protein synthesis.
5. Describe the mechanics of gene inheritance and relate genetic disorders to it.

Academic and Classroom Misconduct: The instructor has the primary responsibility for control over classroom behavior and maintenance of academic integrity, and can order the temporary removal or exclusion from the classroom, and/or laboratory, of any student engaged in misconduct according to the general rules and regulation of the institution. Extended or permanent exclusion from classroom, and/or laboratory, or further disciplinary action can be effected only through appropriate college procedure. Plagiarism, cheating, or any form of academic dishonesty is prohibited. Students guilty of academic dishonesty directly or indirectly will receive a zero for an exercise or exam and may receive an F for the course in addition to other possible disciplinary sanctions that maybe imposed trough the regular institutional procedures. Any student that believes he or she has been erroneously accused may appeal the case through the appropriate institutional procedures if their grade was affected.

Disclaimer: The instructor has the right to change/modify this syllabus at any time with proper notification to the class.