ILLINOIS VALLEY COMMUNITY COLLEGE

Course Outline

DIVISION: Natural Sciences Business

Course: BIO 1008

Date: October 21, 2013

Semester Hours: 4

Prerequisite(s): BIO 1007 with a passing grade or THM 1206 and THM 1216 with a passing grade

Delivery Method:

☒	**Lecture**	**2 Credit Hours**
☒	**Seminar**	**1 Credit Hours**
☒	**Lab**	**1 Credit Hours**
☐	**Clinical**	**0 Credit Hours**

☐ **Online**

☐ **Blended**

Offered: ☐ **Fall** ☒ **Spring** ☐ **Summer**

IAI Equivalent –***Only for Transfer Courses***-go to *http://www.itransfer.org*:

CATALOG DESCRIPTION:

A continuation of BIO 1007, this course completes an introductory study of the structure and function of the human body. Six major systems - circulatory, lymphatic, respiratory, digestive, excretory and reproductive - are studied, along with metabolism and regulation of fluids, electrolyte, and pH.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

Upon completion of the course, the student will be able:

[Choose those goals that apply to this course.]

☒ To apply analytical and problem solving skills to personal, social and professional issues and situations.
☒ To communicate orally and in writing, socially and interpersonally.
☐ To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
☒ To understand and use contemporary technology effectively and to understand its impact on the individual and society.
☒ To work and study effectively both individually and in collaboration with others.
☒ To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
☒ To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
☒ To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

Upon completion of the course, the student will be able to:

1. understand the relationships that exist between form and function with reference to the study of human anatomy and physiology;
2. relate the organ systems of the body to their specific homeostatic functions;
3. demonstrate laboratory skills in anatomical dissection and observation, especially of the cat and human cadaver, microscopy, and scientific instrumentation;
4. use the content of this course to prepare for more advanced work in anatomy and physiology;
5. develop and encourage in others a lifetime curiosity and interest concerning practical applications of anatomy and physiology in medicine and research.

COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Blood
2. Cardiovascular System
3. Lymphatic System and Immunity
4. Respiratory System
5. Digestive System
6. Nutrition and Metabolism
7. Urinary System
8. Fluid, Electrolyte and Acid-Base Balance
9. Male/Female Reproductive System

Outcome 1—Students will be able to understand the relationships that exist between form and function with reference to the study of human anatomy and physiology.

Competency 1.1 – Students will be able to identify the organs of the human male and female reproductive systems and describe their functions.

Competency 1.2 – Students will be able to identify the anatomical features of the human circulatory system and describe their functions.

Competency 1.3 – Students will be able to identify the organs of the human lymphatic system and describe their immune and other functions.

Competency 1.4 – Students will be able to identify the organs of the human respiratory system and describe their functions.

Competency 1.5 – Students will be able to identify the organs of the human digestive system and describe their functions.

Competency 1.6 – Students will be able to identify the organs of the human urinary system and describe their functions.

Outcome 2 – Students will be able to relate the organ systems of the body to their specific homeostatic functions.

Competency 2.1 – Students will be able to identify and describe the phases of meiosis.

Competency 2.2 – Students will be able to identify and describe the stages of spermatogenesis and oogenesis.

Competency 2.3 – Students will understand the physiology of the male and female reproductive systems.

Competency 2.4 – Students will understand the mechanisms of transport, immunity, and blood coagulation.

Competency 2.5 – Students will be able to describe the functions of the heart and blood vessels and relate this to blood pressure and blood flow regulation.

Competency 2.6 – Students will be able to describe the functions of the lymphatic system with special emphasis on the nonspecific and specific defenses of the body.

Competency 2.7 – Students will be able to describe the general functions of the respiratory system with an emphasis in acid-base regulation.

Competency 2.8 – Students will be able to describe the general functions of the digestive system.

Competency 2.9 – Students will be able to describe the interrelationships between the metabolic pathways associated with energy formation and nutrition.

Competency 2.10 – Students will be able to describe the physiology of the urinary system with an emphasis on acid-base regulation and electrolyte balance.

Competency 2.11 – Students will be able to describe the concepts of fluid, electrolyte and acid-base balance.

Outcome 3 – Students will be able to demonstrate laboratory skills in anatomical dissection of the cat and observation of other preserved materials, microscopy and scientific instrumentation.

Competency 3.1 – Students will be able to identify the organs and other structures of the male and female reproductive systems.

Competency 3.2 – Students will be able to perform and explain the significance of selected hematology tests.

Competency 3.3 – Students will be able to identify the organs and selected structures of human and cow hearts.

Competency 3.4 – Students will be able to identify the major blood vessels of the cat and human.

Competency 3.5 – Students will be able to identify the major organs and selected structures of the human and cat respiratory systems.

Competency 3.6 – Students will be able to identify the major organs and selected structures of the human and cat digestive systems.

Competency 3.7 – Students will be able to describe the concepts of food digestion, nutritional guidelines, body composition, energy expenditure and fluid intake.

Competency 3.8 – Students will be able to identify the organs and selected structures of the human and cat urinary systems as well as the pig kidney.

Competency 3.9 – Students will be able to perform and explain the clinical significance of selected urine tests.

Competency 3.10 – Students may gain practice in anatomical observation skills through optional human cadaver demonstrations.

Outcome 4 – Students will be able to demonstrate an appreciation and curiosity of practical applications of anatomy and physiology in the health care professions.

Competency 4.1—Students will be able to describe in general the homeostatic imbalances associated with the cell, tissues, organs, and organ systems of study.

INSTRUCTIONAL METHODS:

1. Lectures
2. Seminar and laboratory discussions
3. Laboratory exercises and experiments
4. Written evaluations in lecture, seminar, and/or laboratory
5. Web discussions and assignments
6. Computer software application demonstrations, quizzes, and/or assignments
7. Group activities

INSTRUCTIONAL MATERIALS:

1. Visual aids (charts, models, video and DVD, CD-ROM, Internet resources, display materials, preserved materials, optional human cadaver demonstrations, Anatomy & Physiology Revealed (APR) 3.0)
2. Compound light microscope
3. Hematology equipment
4. Urinalysis equipment
5. Spirometers
6. Smart Classroom equipment

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

1. Text and laboratory reading assignments
2. Lecture exams
3. Laboratory practical exams
4. Laboratory exercises and experiments
5. Participation in seminar and laboratory discussions and demonstrations
6. Advanced preparation of seminar discussion objectives
7. Quizzes and assignments
8. Other assignments as appropriate

Grades will be assigned primarily on the basis of total points earned during lecture tests, laboratory practicals, quizzes, group work, and assignments. The following grading scale will be used as a guide in determining the final letter grade for the course:

90 - 100% = A
80 - 89% = B
70 - 79% = C
58 - 69% = D
Below 58% = F

Other criteria such as class participation, demonstrated laboratory skill and attendance may also be considered in assigning a final letter grade.

OTHER REFERENCES

Required—

Text: Martini & Bartholomew: Essentials of Anatomy and Physiology, 6th edition, 2013, Pearson-Benjamin Cummings, San Francisco, CA.

Note: The text is bundled with the following:
- Interactive Physiology 10-System Suite (IP-10) CD-ROM

The website for this text is www.masteringaandp.com

Lab Manual: Wise, E. 2012. *Selected Labs for Biology 1007/1008 Anatomy & Physiology*, Customized for Illinois Valley Community College, McGraw-Hill: Dubuque, IA.

Note: The lab manual includes a Connect (with Anatomy & Physiology Revealed) online access code. McGraw-Hill Higher Education. Dubuque, IA. The customized lab manual comes with 2 years of online access to Anatomy & Physiology Revealed (APR), a virtual cadaver dissection experience.

Recommended (optional)—

Study Guide: Seiger, Charles M. *Essentials of Anatomy and Physiology*, 4th edition. Pearson Education, Inc. publishing as Pearson Benjamin Cummings, San Francisco, California.

Laboratory Atlas of Anatomy and Physiology by Eder, Kaminsky, and Bertram, Fifth edition, 2007. McGraw-Hill Higher Education, Dubuque, IA.

Krieger, Paul A. A Visual Analogy Guide to Anatomy and Physiology, 2009. Morton Publishing Co., Englewood, CO.

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Submitted August 13, 2011 by Sue Caley Opsal

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Submitted by Sue Caley Opsal and Carmen Hartford