**Marshall University**

**Syllabus Human Physiology BSC-228**

|  |  |
| --- | --- |
| **Course Title/Number** | Human Physiology; BSC-228 |
| **Semester/Year** | Spring 2015 |
| **Days/Time** | Session-01 (Tue/Thr 7:30-9:50); Session-02 (M/W 7:30-9:50) |
| **Location** | Hurricane High School 210 (Lec) and 223 (Labs) |
| **Instructor** | Muhammad A. Chaudhry |
| **Office** | Byrd Biotechnology Science Center-410 |
| **Phone** | 304-696-7370 |
| **E-Mail** | Chaudhry@marshall.ed |
| **Office Hours** |  |
| **University Policies** | By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to [www.marshall.edu/academic-affairs/policies/](http://www.marshall.edu/academic-affairs/policies/). Academic Dishonesty/Excused Absence Policy for Undergraduates/Computing Services Acceptable Use/Inclement Weather/Dead Week/Students with Disabilities/Academic Forgiveness/Academic Probation and Suspension/Academic Rights and Responsibilities of Students/Affirmative Action/Sexual Harassment |

**Course Description: From Catalog**

|  |
| --- |
| Basic concepts of human physiology, including an introduction to physiological control mechanisms operating at cellular, tissue, organ and systems levels. This course provides the scientific background for understanding physiological homeostasis maintained by Human Body.  Human physiology is the study of human body functions. This course will build upon student’s foundation and understanding of Human Anatomy (BSC-227) and integrate functional aspect of each cell, tissue, organ, system, and whole body. It will be wise to review the Human Anatomy before coming to the first day of class. The goal will be to make students understand Normal physiology to address the pathological situations to bring back to normal function of the human body. However, we will not be able to address all the complexities and challenges facing modern medicine. |

**The table below shows the following relationships: How each student learning outcome will be practiced and assessed in the course.**

|  |  |  |
| --- | --- | --- |
| **Course student learning outcomes** | **How students will practice each outcome in this course** | **How student achievement of each outcome will be assessed in this course** |
| Students will… | Attend scheduled class lectures and take notes during the lecture. | There will be total 4-Examinations including the Final |
| Students will | Supplement their reading using the text book assigned for the course from which most of the material will be used for lecture PPTs. | Quizzes will be given at different intervals related to lecture material as well as Lab exercises. |
| Students will | Have lab exercise to reinforce the information and concepts by performing certain experimental tasks in the scheduled labs. | Examinations including the Final.  Lab reports will graded to develop understanding the experiment and scientific writing skills to present; Hypothesis, Introduction, methods, results, and conclusions. |

**Required Texts, Additional Reading, and Other Materials**

|  |
| --- |
| 1. **Human Physiology: From Cells to Systems, 8th. Edition;**  **Sherwood, Lauralee** West Virginia University 2. **BIOPAC Student Laboratory Manual (required)** |

**Course Requirements:**

|  |
| --- |
| **Learning Objectives:** The term physiology is defined as the study of bodily functions and the mechanisms that control them. This course is designed to introduce you to the function of the various physiological systems in humans, and to have you perform several lab exercises to demonstrate these functional concepts.  **1. CONTENT:**  To gain an overall understanding of mammalian physiology including:   * + The physiological mechanisms used by the major organ systems to perform the functions of an animal.   + The mechanisms by which the major organ systems are controlled.   + The integration of the individual functions of cells and organ systems within the whole animal body in order to maintain homeostasis.   **2. CRITICAL THINKING:**  It is the hope to improve your ability to think critically about physiological and scientific principles.  **Lecture** **and Laboratory Exercises**: This class is designed to be a lecture and lab course. The course begins with an introduction to basic concepts such as chemical structures, histology, membrane transport, diffusion principles, nerve conduction and muscle contraction. The cell is the focus of this section since it is the basic functional unit of the body. The class then enters into the areas of cell respiration, metabolism, and endocrine function. Next, the central (CNS) and peripheral (PNS) nervous systems as well as their anatomy and physiology are explored. Then, we enter the study of systems, digestive and the immune systems. The last part of the course deals with the integration of various aspects of physiology. To show how physiological systems integrate to maintain homeostasis, the physiological responses to whole body exercises will also be conducted.  **Grading:**  Letter grades will be based on a normal distribution.  A = 90 - 100% B = 80–89% C = 70–79% D = 60–69% F = <60%    Proportional point allocation for the course:  **Exams (4) 70 %**  Exam-I 10%  Exam-II 20%  Exam-III 20%  **Final Exam 20% (Comprehensive Ch.1-20)**  Lecture Quizzes (n) 5 %  Lab reports 20 %  **Attendance 5 %** |

**Grading Policy**

|  |
| --- |
| The point total listed above is final; there will be no opportunity for any extra credit, other than that potentially included in an exam. If you disagree with the grading, please give me your explanation in writing within one week of the time the test was handed back. You must notify me within three weekdays if you miss a test and have an acceptable excuse. The makeup test will be different from the regular test. All grades must be appealed in writing (please email). THERE WILL BE NO EXCEPTIONS TO THESE RULES. |

**Attendance Policy**

|  |
| --- |
| Students are expected to attend all lectures and all laboratory periods. It is your responsibility to make sure that you sign the attendance sheet each day. The laboratory is an integral and important part of the course. Anyone who misses three or more laboratory periods will lose a letter grade **(Based on your final cumulative grade. Failing the Lab portion will automatically result in an “F” in the entire BSC-228 course since the lab and written grades are not reported separately).**  If you miss a lecture it is your responsibility to get class notes from your classmates. This course will follow the Marshall University absence policies as outlined in the student catalog. For specific information, please refer to: <http://www.marshall.edu/ucomm/catalog/interim.htm>.  **Additional Attendance guidelines:**  We will not meet if the Hurricane High School is closed for the day or due to weather the school was closed. Please check Marshall University/Hurricane High School weather related information or your e-mails from the instructor. Since we meet only twice a week, **ONLY ONE excused/unexcused** absence will be forgiven to benefit from the attendance portion of the grade  **Lecture exams**: There will be four exams, including the “final.” Material on examinations can include information from lectures, assigned readings, and laboratory exercises. Please notify me in advance if you know you will miss an exam (see Attendance Policy below).  **Lecture Quizzes:** Quizzes may be announced or unannounced and may occur at any time during a lecture period. Quiz material may come from assigned readings and/or material covered in lecture. Quizzes cannot be made up.  **Labs**: The purpose of the lab experiences will be to elaborate on physiological mechanisms studied in lecture. Also, the topics studied in lab will closely follow topics discussed in lecture. *LAB ATTENDANCE IS MANDATORY.* For each lab missed, **points** will be deducted from your overall lab score – exceptions to this rule must be documented in writing by a physician, court official, etc. Lab quizzes will be given during the semester. Lab experiment write-ups must be typed and are due during the laboratory period immediately following the completed lab topic. Lab write-ups turned in late as a result of an unexcused absence(s) will have points deducted automatically. No labs will be accepted after graded labs are returned. Note: No eating or drinking in lab. This is a University Policy. Your laboratory performance will contribute 25% of your total course grade. This will be determined from laboratory data analyses, lab hand-ins, written lab reports and quizzes. All lab reports, unless otherwise noted, must be handed on time. Late reports will not be accepted. You must be present in lab in order to hand in any type of lab report for credit. Lab quizzes may or may not be announced and cannot be made up.  **Course policies and requirements:**  1.Attendance policy*:*Attendance in lectures is expected, and it is required for laboratory exercises. When you miss class, you miss information. You are responsible for any material missed and will need to get any notes or other missed information from your classmates. Absences from exams due to illness, death in the family, or institutional activities will be excused *only* with an official university excuse. Make-up exams will be administered for excused absences only. See Marshall University Undergraduate Catalogue - Academic Information for guidelines (www.marshall.edu/catalog/undergraduate/ug\_08-09.pdf).  *You are expected to be on time for lectures, labs, and exams. Arrival for an exam after the first person has handed in their exam will result in you not being allowed to take the exam. Quizzes will not be administered after they are collected. Lab reports will only be accepted at the start of labs.*  2**. Computer Literacy**: Course materials and course announcements are located on WebCTVista. WebCTVista can be accessed directly (http://www.marshall.edu/muonline). Notify me *immediately* if BSC 228 is not listed for you in WebCTVista.  3**. STUDENTS WITH DISABILITIES**: Marshall University is committed to equal opportunity in education for all students, including those with physical, learning, and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304-696-2771 to provide documentation of their disability. Following this, the DSS Coordinator will send letter to each of the student’s instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit <http://www.marshall.edu/disabled> or contact the Office of DSS. No accommodation can be allowed until this documentation is received, and it must be received several days in advance of the exams to allow me time to arrange the conditions required.  4.**Academic dishonesty** *in any form will not be tolerated*. All written assignments, laboratories reports, quizzes, and exams are to be independent efforts of each student. Refer to Undergraduate Catalogue (www.marshall.edu/catalog/undergraduate/ug\_08-09.pdf) for definitions of cheating, fabrication/falsification, plagiarism, bribes/favors/treats, and complicity. Ignorance of the policies is not an excuse.  5**.Students responsiblY**: *Students are responsible for reading the appropriate material from the textbook and lab handouts*. The student is responsible for reading the text material to help understand the material covered during lecture and lab. Practice problems are provided in the textbook and online at the textbook website, you are expected to review these problems. Questions about the reading material should be given to the instructor so the material can be clarified in class. Examination questions may come directly from assigned reading material or questions.  *Students are required to stay on task during the lecture and laboratory exercises.*Students may be asked to work in groups during class time and as part of following protocols in lab.  *Communications from the instructor may come via your Marshall E-mail account and/or WebCTVista.* It is your responsibility to check both your Marshall E-mail and WebCT announcements periodically.  *Electronic communications to the instructor must have BSC228 in the subject line*, include your full name in the message, and be written formally to maintain student/teacher respect.  6**. RECORDS**: Students are encouraged to mark both the exam and answer sheet and return both at the end of the exam period. Should a question arise concerning grading the *answer sheet* *will be the official response.* Exams and answer sheets will be kept for one semester or summer term following completion of the course. *Grades will not be given or discussed over the phone or E-mail.* You must be present during lecture or lab to collect graded exams, quizzes, and lab reports. Students should keep all returned exams score sheets, quizzes, and lab reports so that their relative standing in the course can be known at any time. All grades appeals must be done formally in writing.  7.**Electronic Devices: *All electronic devices (laptops, handheld computers, instant messaging devices, PDAs, cell phones, pagers, data-bank watches, etc.) must be turned off during class. Failure to do so may result in your dismissal from that lecture period.***  Only standard calculators will be permitted during examinations; cell phones, handheld computers, PDA’s, laptops, or the like will not be permitted. Do not come unprepared. Audio or video recording of lectures is not permitted without prior consent of the Instructor/Professor.  8**. LABORATORY ASSIGNMENTS:** All lab reports must be handed in at the beginning of lab; late reports will not be accepted for credit. Missed labs cannot be made up after the week is over. Lab quizzes cannot be made up.  9**. MISCELLANEOUS:** If you have a learning disability and require special teaching or testing conditions, please See me during the first week of class so that we can make the needed arrangements. If you are an observant member of a religion that has a holiday that conflicts with a lecture or a lab sometime during the semester, please see me during the first week of class so that we can ensure that you do not miss any assignments or class notes. Also, please do not be late. We will begin class promptly at 7:30 p.m.  10. **NOTE:** This syllabus is issued for the convenience of the student and does not constitute a legally binding contract between the student and the instructor. The instructor reserves the right to change the lecture sequence and exam dates during the course of the semester (except for the Final exam), and any such changes will be announced orally in class. The primary yardstick used to assign letter grades is your performance on the exams. |

**Course Schedule**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Date** | **Topic** | **Chapters** |
| **1** | **13-Jan Tue**  **15-Jan Thr** | **Introduction to Physiology; Organization and Homeostasis**  **Cell Physiology**  **Read tutorial portion in the Bio-Pac Lab Book** | 1  2 |
| **2** | **20-Jan Tue**  **22-Jan Thr** | **Plamsma Membranes and Action Potential**  **Neuro-Hormonal Communications**  **Physiology Lab- I and II (Electromyography)** | 3  4  **Biopac Lab 1/2** |
| **3** | **27-Jan Tue**  **29-Jan Thr** | **Neuro-Hormonal Communications**  **Exam-1 (First 4 Chapters + Lab portion questions)** | **4**  **5** |
| **4** | **3-Feb Tue**  **5-Feb Thr** | **The C N S**  **The Peripheral Nervous System: Afferent**  **The Peripheral Nervous System: Afferent and Efferent** | **5**  **6**  **7** |
| **5** | **10-Feb Tue**  **12-Feb Thr** | **Muscle Physiology**  **Physiology Lab -2 (ElectroencephalographyI and II** | **8**  **Biopac Lab**  **Excer, 3 and4** |
| **6** | **17-Feb Tue**  **19-Feb Thr** | **Muscle Physiology**  **Cardiovascular Physiology**  **Exam-II (Chapters 5-8 + Lab portion Questions)** | **8**  **9** |
| **7** | **24-Feb Tue**  **26-Feb Thr** | **Blood: Blood Vessels and Blood Pressure**  **Physiology Lab -3 (Electrocardiography-I-II)** | **11**  **Bio-Pac 5 and 6** |
| **8** | **3-MarchTue**  **5-March Thr** | **Body defenses: Immunity**  **Respiratory System** | **12**  **13** |
| **9** | **10-MarchTue**  **12-March Thr** | **Catchup with schedule due to Exams and Labs**  **Physiology Lab -4 (ECG and Pluse) Exercises 7** | **12**  **13** |
| **10** | **16-March**  **21-March** | **SPRING BREAK: NO CLASSES** |  |
| **11** | **24-MarchTue**    **26-March Thr** | **Blood: Blood Vessels and Blood Pressure**  **Body defenses: Immunity**  **Respiratory System and Urinary System** | **10 and 11**  **12**  **13 and 14** |
| **12** | **31-March Tue**    **2-April Thr** | **Fluids and Acid Base (Chapter 15)**  **Digestive System/Review for Exam 3**  **Exam-III (Chapters 9-14 + Lab questions)** | **16** |
| **13** | **7-April Tue**  **9-April Thr** | **Energy Balance and Temperature regulation**  **Principles of Endocrinology** | **17**  **18** |
| **14** | **14-April Tue**  **16-April Thr** | **Physiology Lab- 5 (pulmonary function Exercise 8)**  **Endocrinology and Reproductive System** | **Bio-Pac**  **19-20** |
| **15** | **21-April Tue**  **23-April Thr** | **Reproductive System or makeup**  **Finish all the lecture Material** | **20** |
| 16 | 28-April Tue  30-April Thr | Finish Lectures/Labs  Course Review from chapters 1-20 Lab Final |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **17- FINALS** | **5-May Tue** | **Final Comprehensive (Chapters 9,10, 15-20 = 60% + 40 % Chapters 1-14)**  **NO Lab related Questions in the Final Written Examination** |  |