

Aloha

We are often asked to determine the appropriateness of previously completed Anatomy and Physiology, Microbiology, and/or Statistics courses particularly if they are not listed in the UH Manoa transfer credit search. Due to the volume of MEPN program information requests it isn't possible to do individual transcript or course evaluations. However, using your own course descriptions and objectives, and using the following information as a guide, you should be able to determine if the courses you took covered the same or similar information. If not, you should take courses similar to these. If you need help making the determination, your instructor should be able to help you.

For Anatomy and Physiology (or Zoology) you need to have the equivalent of one full year of lecture and lab. Some institutions divide them as below; others have 1 semester of anatomy and 1 semester of physiology. These are examples taken from the University of Hawai'i system.

### **ZOOL 141 Human Anatomy and Physiology I (3)**

Is a basic course in the structure and function of the human body which includes a study of its embryology, gross anatomy, microanatomy, physiology, pathology, and homeostatic relationships with regards to the following areas: body orientation, chemical level, cellular level, tissue level, integumentary, bone tissue, skeletal, joints, muscular tissue, muscular system, nervous tissue, spinal cord & nerves, brain, cranial nerves, neural integration and special senses.

Upon successful completion of ZOOL 141, the student should be able to:

- Recall the required anatomical structures of the body.
- Relate chemistry and biology knowledge to the function of the human body as a whole and each of the systems.
- Analyze the structure and function of the cells, tissues, and organ systems, and their interactions with each other and the environment.
- Explain the gross and cellular physiology of the systems.
- Describe the functional relationship between the systems.
- Discuss the negative and positive feedback control process in the systems.
- Identify the basic embryology of the systems.
- Discuss the maturation and aging process involving these systems.
- Discuss the various pathological diseases of the following systems.
- Relate metabolic processes to everyday activities such as eating, exercise, and sleep.
- Discuss current research related to subject matter.
- Employ critical thinking and knowledge of common mechanisms of physiological operation to understand how systems function, how disease interferes with these processes, and how clinical intervention reestablishes homeostasis.

### **ZOOL 141L Human Anatomy and Physiology Laboratory I (1)**

is a basic lab course in the structure and function of the human body which includes a study and experimentation regarding embryology, gross anatomy, microanatomy, physiology, pathology, and homeostatic relationships with regards to the following areas: body orientation, chemical level, cellular level, tissue level, integumentary, bone tissue, skeletal, joints, muscular tissue, muscular system, nervous tissue, spinal cord & nerves, brain, cranial nerves, neural integration and special senses.

Upon successful completion of ZOOL 141L, the student should be able to:

- Describe general human gross, systemic, histological, and cellular anatomy through the use of models, computer images, palpation, observation, and dissections.
- Use basic chemical principles important to operations of the body.
- Use a microscope and prepare slides to observe, characterize, and identify cells of the body.
- Employ the scientific method to study, measure, analyze, understand, and report on physiological systems.
- Use a range of technological instruments/computers to measure and analyze physiological systems.
- Perform clinical tests to assess the condition of physical and physiological systems.
- Discuss current research related to subject matter.
- Employ critical thinking and knowledge of common mechanisms of physiological operation to understand how systems function, how disease interferes with these processes, and how clinical intervention reestablishes homeostasis.

### **ZOOL 142 Human Anatomy and Physiology II (3)**

is a basic course in the structure and function of the human body which includes a study of its embryology, gross anatomy, microanatomy, physiology, pathology, and homeostatic relationships with regards to the following areas: autonomic nervous, endocrine, blood, heart, vessels & hemodynamics, lymphatic & immune, respiratory, digestive, metabolism, urinary, fluids, electrolytes, acid/base homeostasis, reproductive, development and heredity.

Upon successful completion of ZOOL 142, the student should be able to:

- Recall the required anatomical structures of the body.
- Relate chemistry and biology knowledge to the function of the human body as a whole and each of the systems.
- Analyze the structure and function of the cells, tissues, and organ systems, and their interactions with each other and the environment.
- Explain the gross and cellular physiology of the systems.
- Describe the functional relationship between the systems.
- Discuss the negative and positive feedback control process in the systems.
- Identify the basic embryology of the systems.
- Discuss the maturation and aging process involving these systems.
- Discuss the various pathological diseases of the following systems.
- Relate metabolic processes to everyday activities such as eating, exercise, and sleep.
- Discuss current research related to subject matter.
- Employ critical thinking and knowledge of common mechanisms of physiological operation to understand how systems function, how disease interferes with these processes, and how clinical intervention reestablishes homeostasis.

### **ZOOL 142L, Human Anatomy and Physiology Laboratory II,**

is a basic course in the structure and function of the human body which includes a study and experimentation regarding embryology, gross anatomy, microanatomy, physiology, pathology, and homeostatic relationships with regards to the following areas: autonomic nervous, endocrine, blood, heart, vessels & hemodynamics, lymphatic & immune, respiratory, digestive, metabolism, urinary, fluids, electrolytes, acid/base homeostasis, reproductive, development and heredity.

Upon successful completion of ZOOL 142L, the student should be able to:

- Describe general human gross, systemic, histological, and cellular anatomy through the use of models, computer images, palpation, observation, and dissections.
- Use basic chemical principles important to operations of the body.

- Use a microscope and prepare slides to observe, characterize, and identify cells of the body.
- Employ the scientific method to study, measure, analyze, understand, and report on physiological systems.
- Use a range of technological instruments/computers to measure and analyze physiological systems.
- Perform clinical tests to assess the condition of physical and physiological systems.
- Discuss current research related to subject matter
- Employ critical thinking and knowledge of common mechanisms of physiological operation to understand how systems function, how disease interferes with these processes, and how clinical intervention reestablishes homeostasis.

## **MICROBIOLOGY**

### **MICR 130 General Microbiology (3)**

covers the fundamentals of microbiology with an emphasis on microorganisms as they affect people, property and the environment. Broad aspects of biochemistry, genetics, molecular biology, physiology, host-parasite relationships, infectious diseases, immunology, public health, epidemiology, food microbiology, and environmental microbiology will be covered. Upon successful completion of MICR 130, the student should be able to:

- Describe the organization of life at the cellular and subcellular levels.
- Describe the main characteristics of bacteria including their morphology, growth, reproduction and classification.
- Understand and describe in general terms, the fundamental biochemistry of bacterial metabolism and compare it to eucaryotic cell metabolism.
- Understand and describe the basic principles of molecular genetics as they relate to cell division, mutation, genetic engineering, bacterial virulence, and antibiotic resistance.
- Understand and describe the fundamental principles of the host-parasite relationship both in health and disease.
- Describe the components of the human immune system and understand how these components interact in generating an immune response.
- Mathematically express the growth characteristics of bacterial culture.
- Describe the major and the common infectious diseases of humans.
- Understand and apply methods of microbial control that can be used to prevent both the transmission of infectious diseases and the spoilage of foods and textiles.
- Read and understand microbiology articles in nursing journals and the popular press.

## **STATISTICS**

The following types of courses would be acceptable for the Statistics requirement. If the course name states "statistics" it will probably be acceptable. However, the terminology below should be included in the course description:

### **MATH 115 Statistics (3)**

Covers elementary probability and statistics including standard deviation, calculations and inferences about means and proportions, normal distributions and linear correlation.

Upon successful completion MATH 115, the student should be able to:

- Describe and interpret various descriptive statistics such as mean, median, mode, range, standard deviation and quartiles.
- Draw and interpret various graphs such as frequency histograms, bar graphs, and boxplots.

- Solve problems involving the probability of events.
- Calculate probabilities involving normal random variables and categorical data.
- Determine and interpret (for large samples) confidence interval estimates of population means and proportions.
- Conduct hypothesis tests using z and chi-square about means and proportions of populations.
- For a set of paired data, produce a scatter plot, find the regression line, and find and interpret the correlation coefficient.

### **SOCS 225 Statistical Analysis for Social Sciences (3)**

- Statistical reasoning in the analysis of social science data, including descriptive statistics, exploratory data analysis, inference measures of association, decomposition of variance, and regression analysis.

### **EDEP 429 Introductory Statistics (3)**

- Use of descriptive statistics in analyzing test scores; application of linear correlation and regression; introduction to an understanding of inferential statistics. DS

### **NREM 310 Statistics in Agriculture and Human Resources (3)**

- Theory, applications, and presentation of statistical reasoning. Descriptive, probability, and inferential reasoning for one-variable analysis with extensions to multiple variable cases