

Primary Courses, 2001 to present
V. Pat Lombardi

BI 358 Investigations in Medical Physiology was designed originally between 1993 and 2000 to bridge the gap between textbook knowledge (Guyton's & Hall's *Textbook of Medical Physiology*) and practical applications in clinical medicine and research. The course is analogous to an updated, term-long conference in diverse areas of medical physiology and research. Each year since its inception, it has dynamically evolved because it relies upon the expertise and availability of a variety of local, regional, and nationally recognized researchers and physicians screened by way of student feedback. Background medical physiology lectures are brought to life during subsequent expert subspecialty presentations and coordinated by using a body systems approach. Over 30 guests have participated including an addiction medicine specialist, a kidney dialysis machine inventor, a liver transplant center director, an endocrinology journal editor, a cardiovascular institute medical director, a pediatric infectious diseases department chair, a bone metabolism and remodeling expert, a pain management specialist, an allergy and asthma clinical investigator, a regional hospital medical and research administrator, a cataract and glaucoma eye surgery expert, a founder of a women's care fertility clinic, and a holistic naturopathic physician. Lectures are followed by lively discussions and current event topics guided by a moderator. Requirements include attendance in lectures and discussions (verified daily), weekly quizzes, written feedback on guest lecturers, research paper in any medical specialty area at any level of organization, oral PowerPoint presentation, and feedback and scoring on peer presentations.

BI 121 Introduction to Human Physiology was designed for non-science majors and evolved from a course entitled the *Human Circulatory System* taught by Professor John Postlethwait in the 1980s. The goal of the course is to provide students with a lifelong working vocabulary and knowledge of the structure and function of the human body to foster understanding of current basic science and lay literature and to promote clarity of communication with medical professionals and scientists. Though this is a large lecture class (175-225 students per term), lab sections are limited to 24 students to make them more personal. Every effort is made to make lectures and labs up-to-date, exciting, individually interactive, and applicable to daily life. Labs are synchronized with lecture topics and designed to expand upon the material in some practical way. Topics include: (1) histology or microscopic study of tissues emphasizing levels of organization, (2) anatomy and physiology stressing structure-function relationships, (3) nutritional analyses using newly updated private software and US government public websites; and personal assessments of (4) heart rate and blood pressure with cardiovascular disease risk analysis, (5) blood typing and blood glucose, and (6) pulmonary function. Much personal data is obtained that provides motivation for further study often resulting in a positive impact on health and disease risk. For example, many students have quit smoking based on a lecture dedicated to the **Great American Smoke-Out** and Oregon's Tobacco-Free Campus 2012 initiative. Requirements incorporate attendance and participation (monitored daily) in lectures and laboratories; and successful completion of a lab notebook with written activities, a midterm including short-answer questions, and a multiple-choice final exam.

Sample Freshman Seminars
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BI 199 Nutrition Concepts & Controversies is a course taught through a 1st Year Programs grant limited to a maximum of 23 students. The primary goals are to provide the analytical and scientific tools needed to separate fact from fiction and to identify and debunk nutrition quackery. In order to evaluate claims and controversies, students use the scientific method, peer-reviewed research and newsletters, and guidelines prepared by nationally-accredited health care and research organizations. The newest recommendations established by the US Department of Agriculture, the American Heart Association, the American Institute for Cancer Research, Health Canada, and American College of Sports Medicine are presented so that students are urged to make incremental changes in their daily food and exercise choices to minimize disease risk and enhance quality of life. The text for the course is Frances Sizer's and Eleanor Whitney's *Nutrition: Concepts & Controversies, 12th edition* (2011). Small group and class discussions examine controversial issues such as: Are nutrition guidelines biased? Who should take supplements? What does *organic* really mean? Do diets work? What about low-carbohydrate diets? What does recent research say about the best nutritional approach for improving the quality and quantity of life? The course includes electronic media presentations, controversy discussions, group and individual activities, and nutritional analyses. Students analyze food labels, the prices of unique categories of foods through data collection and shopping tours, and the nutritional value of their favorite foods and recipes. They read approximately 75-100 pages per week, complete mystery nutrition quizzes, investigate nutrition claims, make a formal class presentation, and prepare a written research paper on a controversy of their choice. Open participation is encouraged and small groups are resorted to promote questions and discussion and to support and engage the entire class.

BI 199 Anatomy, Physiology & Weight Training is a course limited to a maximum of 23 students and is team-taught with Professor Janice Radcliffe by way of a 1st Year Programs grant. It links together resources in three departments: Biology, Human Physiology and Physical Education. Thanks to Professors Sierra Dawson and Jon Runyeon, we are able to access the Human Anatomy Lab. This seminar attempts to maximize applications of basic and applied sciences in exercise and lab settings and includes exercise technique discussions, hands-on exercise sessions, structure-function lectures, and cadaver lab activities. The goals are to promote: (1) safe and effective weight training techniques, (2) a life-time interest in weight training as one means of enhancing multiple components of health-related fitness, (3) an understanding of the anatomical and physiological basis underlying human movement, and (4) a lifelong respect for the intricacies and diversities of human body structures and functions. Students read 15-20 pages per week, participate in a variety of exercise and lab activities and discussions, develop and present a thematic poster presentation; and make written, review - type suggestions for revising an exercise text, book chapter or article of their choice. They are required to attend lectures and lab observations, to participate in all activities, to develop a thematic poster presentation, and to grade objectively their peers' presentations. The relaxed, spontaneous, discussion format is designed to encourage students to participate freely.