

are to (1) understand the differences between service and physical product, (2) identify the role of marketing in leisure sport services, and (3) provide application of marketing knowledge in leisure sport.

PERM 3740 Facility Management (3,3,0)

Prerequisite: PERM 1190 Organization and Administration in Physical Education and Recreation

This course covers structures and space necessities for planning facilities. It provides guidelines, principles, construction, use and maintenance of outdoor and indoor facilities. The objectives of the course are to (1) provide basic steps of the facilities planning process; (2) understand the objectives and needs affecting the planning process; (3) become familiar with the problems, forces and issues shaping facilities; (4) become aware of the legal concepts in facility construction; and (5) become familiar with landscape design, construction and turf management.

PERM 3750 Outdoor Recreation (3,3,0)

Prerequisite: PERM 1290 Outdoor Pursuits

This course enables students to (1) comprehend the fundamentals of outdoor recreation; (2) understand the nature and outdoor resources for recreation; and (3) acquire essential skills to be leaders in outdoor recreational activities.

PHYS 1121 General Physics I (3,3,0)

Prerequisite: AS-Level Physics, or O-Level Physics and Mathematics, or consent of the instructor

This course covers classical mechanics and thermodynamics at an introductory level. After a brief review of Newton's three laws, a number of applications illustrating the use of conservation laws with the help of calculus are discussed. This is followed by an elementary treatment of rigid body and fluid mechanics. The last part deals with thermal phenomena and the uses of statistical concepts in describing the gaseous state.

PHYS 1122 General Physics II (3,3,0)

Prerequisite: PHYS 1121 General Physics I or consent of the instructor

Introductory concepts of electricity, magnetism, electromagnetic wave and optics will be presented.

PHYS 1160 Electronics (3,3,0)

Co-requisite: PHYS 1170 Electronics Laboratory

This course aims at instilling the basic knowledge of electronic circuits, devices, and transducers (both for discrete components and integrated circuits). Operational knowledge of instruments for electrical measurement will be emphasized.

PHYS 1170 Electronics Laboratory (1,0,3)

Co-requisite: PHYS 1160 Electronics or consent of the instructor
This is a laboratory course which provides a set of experiments complementing the course PHYS 1160 Electronics.

PHYS 1320 Experimental Physics I (2,0,3)

Prerequisite: PHYS 1121 General Physics I or consent of the instructor

This course consists of a series of laboratory experiments (and lectures, for PHYS 1320) complementing the following courses: PHYS 1121-2 General Physics I & II.

PHYS 1330 Mathematical Methods of Physics (3,3,0)

Prerequisite: MATH 1570 Advanced Calculus or consent of the instructor

Ordinary differential equations, partial differential equations, Fourier series, Fourier transform, Laplace transform, function of a complex variable, and applications to physics problems are discussed.

PHYS 1620 Introduction to Astronomy (3,3,0)

Introductory astronomy, from the solar system to the large scale structure of the universe, will be presented to both science and

non-science students. Physical concepts will be emphasized. Presentation will be mainly on a qualitative level.

PHYS 1640 Energy, Environment and Sustainability (3,3,0)

Climate change and the depletion of energy resources are issues of major international concern in the contemporary world. The focus of this course is on the multiple and intricate relationships between energy, environment and sustainability issues. It allows students to fully understand the subject matter from both the natural science and social science perspectives. Through appropriate real-life examples, the course aims to guide students, in an exploration of viable alternative energy sources and to enable them to embark on a way of life that promotes a clean and sustainable use of energy resources. In addition to classroom learning, the teaching will be supplemented by field visits, demonstrations, group projects and debates.

PHYS 1650 Nano-Living: Impact of Nanoscience and Nanotechnology (3,3,0)

This course will popularize basic knowledge of nanoscience and nanotechnology, introduce an increasing range of pragmatic applications in daily life, establish critical consciousness of their social consequences (in environment, safety and human health), and prevent misleading.

PHYS 2130 Electromagnetism I (3,3,0)

Prerequisite: PHYS 1122 General Physics II or consent of the instructor

Review of vector field theory, Coulomb's law, electric field, Gauss's law, electric potential, Poisson's equation, Laplace's equation, electric energy, boundary value problems, multiple expansion, electric fields in matter, magnetic field, Lorentz force, Ampère's law, and Biot Savart law.

PHYS 2140 Electromagnetism II (3,3,0)

Prerequisite: PHYS 2130 Electromagnetism I or consent of the instructor

Magnetic fields in matter, Maxwell's equations, vector potential, gauge transformation, electromagnetic energy and momentum, Poynting's theorem, electromagnetic waves, polarization, reflection and refraction, electromagnetics waves in conducting media, dispersion, wave guides, electromagnetic radiation, retarded potential and Liénard-Wiechert potential, and relativistic electrodynamics.

PHYS 2260 Modern Physics (3,3,0)

Prerequisite: PHYS 1121-2 General Physics I & II, or consent of the instructor

This course introduces the key concepts of 20th-century physics: special relativity, light quantization, wave-particle duality, and quantum physics.

PHYS 2330 Mechanics I (4,4,0)

Prerequisite: PHYS 1121 General Physics I or consent of the instructor

Lagrangian and Hamiltonian Mechanics, central force motion, harmonic oscillations, coupled oscillations and waves. Teaching will be illustrated with applications.

PHYS 2340 Experimental Physics II (2,0,3)

Prerequisite: Year II standing or consent of the instructor

This course consists of a series of laboratory experiments complementing the following courses: PHYS 1121-2 General Physics I & II.

PHYS 2350 Atoms, Molecules, and Solids (3,3,0)

Prerequisite: PHYS 2260 Modern Physics, or consent of instructor

By using the framework of quantum physics, this course explains the rich and diverse properties of matter ranging from atoms to solids.