MATHEMATICS

Camp Hill HS Course: AP Statistics (Instructor – Justin Sheaffer)

Harrisburg University Course: Introductory Statistics (MATH 280-02-H) (3 semester hours)

Description: This course covers elementary topics from the probability and statistics of both discrete and continuous random variables. Topics include independence and dependence, mean, variance and expectation, and distributions of random variables. Statistics is applied to hypothesis testing. This course provides the student with a broad, general knowledge and understanding of statistics. The emphasis of this course is on the utility and practical application of statistics rather than on the mathematical derivation of statistical principles.

Camp Hill HS Course: AP Calculus AB (Instructor – Kathy Brock)

Harrisburg University Course: Calculus I (MATH 220-02-H) (3 semester hours)

Description: This course introduces techniques to evaluate limits and covers continuity, special trigonometric limits, absolute value limits and differentiation of algebraic, trigonometric, and logarithmic functions. The course explores intermediate value theorem, mean value theorem, and extreme value theorem. Other topics for exploration are application and formal definition of derivative average rate of change versus instantaneous rate of change, velocity, and the introduction of the definite integral and its applications. A graphing calculator is required for this course.

SCIENCES

Camp Hill HS Course: AP Physics 1 (Instructor – Jon Peterson)

Harrisburg University Course: General Physics I Lecture (PHYS 121-06-H) (3 semester hours) and General Physics I Lab (PHYS 122-06-H) (1 semester hour)

Student must enroll in both PHYS 121 (Lecture) and PHYS 122 (Lab)

Description: This course provides an introductory treatment of classical Newtonian physics and covers kinematics in one and two dimensions, vector forces, Newton's laws of motion, uniform circular motion, work, conservation of energy, momentum and angular momentum, rotational kinematics and dynamics, and simple harmonic motion. Emphasis is placed on the application of basic concepts through mathematical problem-solving. Applications of physics to problems in medicine are presented and medical technology is highlighted throughout the course. Applications of elementary and differential and integral calculus to physics are introduced. Laboratory experiments provide experience with various measurement technologies and reinforce the theoretical concepts developed.

SCIENCES (cont.)

Camp Hill HS Course: Honors Chemistry (Instructor – Ted Gibbons)

Harrisburg University Course: General Chemistry I Lecture (CHEM 151-01-H) (3 semester hours) and General Chemistry I Lab (CHEM 152-01-H) (1 semester hour)

Student must enroll in both CHEM 151 (Lecture) and CHEM 152 (Lab)

Description: This course provides a general introduction to atoms and molecules, stoichiometry, states of matter, solutions, reactions, kinetics and equilibrium which serve as a prerequisite for advanced courses.

Camp Hill HS Course: AP Biology (Instructor – Amy Diehl)

Harrisburg University Course: General Biology 1 Lecture (BIOL 102-12-H) (3 semester hours) and General Biology I Lab (BIOL 103-12-H) (1 semester hour)

Student must enroll in both BIOL 102 (Lecture) and BIOL 103 (Lab)

Description: This course introduces the student to the major themes of biology, including properties of living organisms, comparison of eucaryotes vs. procaryotes, patterns of inheritance, the central dogma, mitosis and meiosis, the diversity of life in both plants and animals, classification of organisms, evolution, metabolism, photosynthesis, cell structures, basic structure of the body, infectious disease, the Hardy-Weinberg principle, biodiversity, ecosystems, and the biosphere. A broad understanding of biology and living organisms in the biosphere is developed through hand-on, multi-modal learning opportunities in both the classroom and the companion laboratory component.