STEM MAGNET PROGRAM
COURSE LISTING

Course Number and Course Title	Course Description
PHIL 290 – Medical Ethics	Presents reflective inquiry into selected problems in medical ethics. Students consider the diversity of perspectives on ethical issues in the practice of medicine such as the physician-patient relationship, patient autonomy, informed consent, assisted suicide, justice in the distribution of health care, and the moral risks of genetic testing.
PHIL 110 – Critical Thinking	Surveys several forms of argument, including inductive, deductive, analogical and legal reasoning, in order to teach students how to construct and evaluate arguments effectively. Designed for students who aim to improve critical thinking skills.
BIOLOGY 114 – Concepts Biology 1	Provides a framework of key biological concepts and unifying themes. Topics include the nature and process of science, the unity and diversity of living things, the chemical basis of life, cell structure and function, principles of inheritance and animal form and function. Laboratory work emphasizes application of biological principles, experimental design, observation, data collection, analysis and interpretation.
BIOLOGY 173 – Anatomy & Physiology 1	Integrates the structure and function of the human body at an introductory level. The course covers fundamental principles of anatomy and physiology, the chemical basis of life, cell structure and function, tissues, integumentary system, skeletal system, muscular system, nervous system and special senses.
CHEM 105 – Intro to Forensic Science	Uses a case-oriented approach to explore selected topics of forensic science. These include: (1) the scientific and technological foundation for the examination of physical, chemical, and biological items of evidence, and (2) the scope of expert qualifications and testimony, the legal status of scientific techniques, and the admissibility of the results in evidence. This course is designed for students with an interest in forensic science.
CHEM 115 – Chemistry for Sciences 1	Introduces and develops qualitative and quantitative concepts in chemistry essential for further study in chemistry and application to other science disciplines. Topics include the elements' atomic and periodic properties, chemical compound types and properties, chemical reaction types, chemical stoichiometry, molecular geometry determination and relation to properties, physical properties of states of matter, qualitative acid-base behavior, and inter-particle forces. Three hours per week class plus three hours per week laboratory. First course in chemistry for all physical and biological science majors.
PSYCH 101 – General Psychology	Studies psychology as a system of scientific inquiry into behavior, mental processes, and social relationships. Major concepts and principles of the field are presented.

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ENGTECH 101 – Introduction to Engineering Technology	Provides an overview of opportunities and challenges of an engineering technology career. Topics include academic success strategies, various engineering disciplines, product development process, communication skills, and design and implementation of an engineering design project. Prerequisites: None. Three hours lecture/lab per week.
ENGTECH 180 – CAD Engineering Graphics	Provides hands-on introduction to computer-aided design with an emphasis on basic engineering graphics. Orthographic, sectional, auxiliary, isometric, and perspective views. Solid modeling, dimensions, and tolerances.
ENGTECH 141 – Circuit Analysis	Electric circuit analysis including computer simulation and hands-on laboratory experience using modern electronic equipment. Resistance, inductance and capacitance. Analysis of dc and ac circuits including network theorems, R-L and R-C transients, and R-L-C resonance. AC power, power factor and three-phase power.
COMPSCI 121- Object-Oriented Programming with Java	This course introduces students to object-oriented programming ideas and techniques using the Java programming language. Topics include: classes, objects, fundamental data types, control structures, class design, testing, debugging, and Java documentation. Students develop moderate length programs following the design guidelines presented in the course. Four hours of lecture per week.
COMPSCI 115 – Python Programming	Introduces the Python programming language. Students will use Python to perform numerical and text-oriented calculations, write data-manipulation programs, and script computer operations. Hands-on activities include writing and running console-mode programs, inspecting data files, and graphing of data.
DIGFOR 121 – File Systems 1	Introduces basic computer forensic methodology. Analysis of File Allocation Table (FAT) file systems, particularly the FAT 32 file system with an emphasis on forensic information from metadata, slack space, and unallocated space. Examination of various Windows® artifacts using appropriate software.
DIGFOR 122 – File Systems 2	Analyzes the NTFS file system in detail with an emphasis on forensic information from metadata, slack space, and unallocated space. Examination of various Windows® artifacts using appropriate software.

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MATH 115 - Cryptology	Presents an introduction to both cryptography - the writing of secret codes and cryptanalysis - the breaking of secret codes. Students will learn to encode, decode, and in some cases break ciphers from ancient times and modern. Emphasis will be on student involvement, with each cipher having an associated lab. Students also will investigate a topic in cryptology on their own and present their discoveries through both written and oral presentations.
MATH 113 – Pre-Calculus	Studies elementary algebraic functions and relations, exponential and logarithmic functions, circular functions and inverse functions and their applications. Students learn the mathematical knowledge needed for the study of calculus and the related quantitative natural sciences.
MATH 125 – Calculus 1	Provides the basic tools for differentiation and the beginnings of integration for functions of a single variable, with applications. It is the first in the sequence of four calculus courses designed for students majoring in mathematics and other disciplines that require calculus.
MATH 126 – Calculus 2	Provides the basic tools for integration of functions of a single variable, with applications. It is the second in the sequence of four calculus courses designed for students majoring in mathematics and other disciplines that require calculus. This course earns three GEPs toward Goal 3 Quantitative Reasoning in general education. Prerequisites: MATH.125.
MATH 141 – Intro to Statistics	Provides an introduction to descriptive and inferential statistics. Topics covered include numerical and graphical summary procedures, basic probability concepts, random variables and distributions, the Central Limit Theorem, confidence intervals, and hypothesis testing.