PREPARATION YEAR PROGRAM AND CORE CURRICULUM

OVERVIEW OF THE PREPARATION YEAR PROGRAM
To ensure that the students the university admits will be prepared to succeed in PMU’s challenging academic environment, a non-credit Preparation Year Program will be provided to assist entering students in developing their skills in English, mathematics, and learning and study methods.

The Preparation Year Program will provide students with two semesters of non-credit instruction in learning skills, two semesters of mathematics, and a level of proficiency in English that will enable students to succeed in a university where all courses (with the exception of Arabic language and Islamic Studies) will be taught in English. The time required to attain this level of English abilities will vary depending on the student’s level of achievement upon entering the program. Courses are taught in half-semester blocks. It is expected that most students will attain the required level in two full semesters, though some may require additional instruction.

Upon successful completion of the Preparation Year Program, students will be ready for acceptance into one of the three colleges of PMU.

PREPARATION YEAR PROGRAM COURSE DESCRIPTIONS

Communication - PRPC

PRPC 0011: Low-Beginning Communication Skills (0,0) PRPC 0011 is a foundation course for low-proficiency EFL learners. It introduces students to basic reading skills, vocabulary for basic communication, speaking routines and patterns, and listening for comprehension and response. This course (Level 1) introduces PMU students to the student-centered, highly active and interactive EFL classroom environment, and to the expectations in that environment. Prerequisite: This course has no prerequisite. Assignment to course level follows placement tests at the beginning of the Preparation Year Program.

PRPC 0021: High-Beginning Communication Skills (0,0) PRPC 0021 consolidates basic reading, vocabulary acquisition, speaking, and listening skills learned at the low-beginning level. The course (Level 2) further introduces students to the reading skills and vocabulary-acquisition strategies and approaches that will characterize all EFL classes at the PMU. Emphasis on general speaking, active listening, and pronunciation skills continue in an integrated approach using more complex material. The classroom is student-centered and interactive. Prerequisite: PRPC 0011 (Level 1), or assignment to Level 2 following placement tests at the beginning of the Preparation Year Program.

PRPC 0031: Low-Intermediate Communication Skills (0,0) PRPC 0031 moves students beyond passive reading to a more active, analytical approach to the material. Students begin structured study of high-frequency academic words from the Academic Word List. Listening
activities develop students’ facility in understanding material organized according to major patterns of thought and speech. All previous reading, vocabulary, speaking, and listening skills are reviewed and further developed using higher-level materials and an integrated-skills approach. **Prerequisite:** PRPC 0021 (Level 2), or assignment to Level 3 following placement tests at the beginning of the Preparation Year Program.

**PRPC 0041: High-Intermediate Communication Skills (0,0)** In PRPC 0041 reading, vocabulary, speaking, and listening activities continue to become more analytical and academic in focus, preparing students to meet university-level expectations. Reading skills training continues, as reading materials become longer and more complex. Vocabulary acquisition skills are emphasized, and another section of the Academic Word List is added for study. Academic listening skills become a primary emphasis, with training in lecture-listening and note taking strategies. Students learn and practice academic speaking formats. **Prerequisite:** PRPC 0031 (Level 3), or assignment to Level 4 following placement tests at the beginning of the Preparation Year Program.

**PRPC 0051: Low-Advanced Communication Skills (0,0)** PRPC 0051 begins to bridge the gap between EFL instruction and the use of English in realistic academic activities. Reading skills training continues with longer, authentic material. Word-attack skills and additional words from the Academic Word List prepare students for university-level reading. Longer, more complex authentic listening activities are part of this course. The academic emphasis of the class does not, however, diminish the communicative, interactive, and student-centered nature of the classroom. **Prerequisite:** PRPC 0041 (Level 4), or assignment to Level 5 following placement tests at the beginning of the Preparation Year Program.

**PRPC 0061: High-Advanced Communication Skills (0,0)** PRPC 0061 reviews and consolidates all the reading skills and vocabulary word-attack skills students learned at previous levels, using a variety of university-level material. Readings are longer and the final words from the Academic Word List are studied. Academic listening tasks are long, complex, and realistic to prepare students for a successful transition into university classes. The classroom remains student-centered, with interactive, integrated-skills activities. **Prerequisite:** PRPC 0051 (Level 5), or assignment to Level 6 following placement tests at the beginning of the Preparation Year Program.

**Writing - PRPW**

**PRPW 0011: Low-Beginning Writing Skills (0,0)** This low-beginning Writing Skills course introduces the student to the basics of English grammar and composition with the goal of elementary proficiency in speaking and writing. This is achieved through extensive pair and group activities in the classroom as well as directed composition, spelling, and mechanics at the basic paragraph level. **Prerequisite:** This course has no prerequisite. Assignment to course level follows placement tests at the beginning of the Preparation Year Program.
PRPW 0021: High-Beginning Writing Skills (0,0) This high-beginning writing course provides a strong foundation in English grammar with acquisition of present and past verb tenses in simple and progressive forms, an introduction to present perfect, basic modals, and comparison, as well as other high-beginning structures. In this Level 2 course, students learn to apply the grammar at the high-beginning level in writing and speaking, focusing on monitoring for accurate use of the language. Basic paragraph-writing skills are formed through an introduction to the writing process and the incorporation of organization, simple sentence structure and mechanics. **Prerequisite:** PRPW 0011 (Level 1), or assignment to Level 2 following placement tests at the beginning of the Preparation Year Program.

PRPW 0031: Low-Intermediate Writing Skills (0,0) This low-intermediate writing course introduces or reviews major grammatical concepts. In addition, the course provides an introduction to the fundamentals of academic writing at the intermediate level, focusing on the mastery of paragraph organization and development, three-paragraph essays of classification, cause and effect, comparison and contrast, an introduction to the five-paragraph essay, and the use of transitions. In this Level 3 course, students refine their knowledge of English writing mechanics and conventions through word processing, and apply their developing knowledge of grammar and sentence structure to their writing. Beginning research and documentation skills are introduced. **Prerequisite:** PRPW 0021 (Level 2), or assignment to Level 3 following placement tests at the beginning of the Preparation Year Program.

PRPW 0041: High-Intermediate Writing Skills (0,0) This high-intermediate writing course focuses on academic writing, making the transition to the development of unified, coherent essays. In addition, the final writing project is a documented essay, the result of training in basic library and Internet research methods and the fundamentals of academic documentation. In this Level 4 course, major topics in grammar are reviewed and complex sentence structure is covered, with students expected to begin writing mature, sophisticated sentences. **Prerequisite:** Successful completion of PRPW 0031 (Level 3), or assignment to Level 4 following placement tests at the beginning of the Preparation Year Program.

PRPW 0051: Low-Advanced Writing Skills (0,0) This low-advanced writing course focuses on writing essays with clarity of focus, cohesion, and development of main and supporting ideas. Other academic writing skills are addressed in this Level 5 course, including instruction and definition. Students refine their understanding of the writing process. The course also features a strong focus on the research process, particularly on synthesizing information and citing sources. This process culminates in a research paper at the low-advanced level. Students refine their control of complex sentence structure in both oral and written contexts and learn to use a variety of structures in their writing. **Prerequisite:** PRPW 0041
(Level 4), or assignment to Level 5 following placement tests at the beginning of the Preparation Year Program.

PRPW 0061: High-Advanced Writing Skills (0,0) This high-advanced writing skills course focuses on increasing fluency and sophistication of essay writing at the high-advanced level, and the production of a research paper. This Level 6 course emphasizes summarizing, synthesizing, and argumentation, and addresses other academic writing skills. A review of advanced grammatical structures and their application to academic writing is included. **Prerequisite:** PRPW 0051 (Level 5), or assignment to Level 6 following placement tests at the beginning of the Preparation Year Program.

Mathematics - PRPM

PRPM 0011: Introductory Algebra (0,0) This course is an introduction to mathematical thinking in the context of the real number system and functional relationships. To assist in solving problems, the course incorporates the use of technology, specifically graphing calculators and Excel spreadsheets. **Prerequisite:** Satisfactory completion of high school algebra.

PRPM 0012: Intermediate Algebra (0,0) A continuation of PRPM 0011, this course focuses on mathematical thinking and data analysis applied to linear, quadratic, rational, logarithmic, and exponential functions. The course incorporates the use of technology to help solve problems, specifically through the use of graphing calculators and Excel spreadsheets. **Prerequisite:** PRPM 0011: Introductory Algebra.

PRPM 0022: Pre-Calculus (0,0) This course provides an overview of pre-calculus mathematics with an emphasis on elementary functions and their applications. The course incorporates the use of technology to help solve problems, specifically through the use of graphing calculators and Excel spreadsheets. **Prerequisite:** PRPM 0011: Introductory Algebra.

Study Skills and Learning Strategies - PRPL

PRPL 0011: Theories and Applications of Learning I (0,0) This course focuses on models of academic success founded on an understanding of learning theories from the fields of education and psychology and the application of those theories throughout the semester. Through a combination of guided application of learning strategies, individual academic advising, and instruction in and daily use of technology, students will learn the skills necessary to achieve academic success.

**Prerequisite:** Students must have achieved English Level 3 proficiency or higher, either by successful completion of Level 2 or by class assignment following placement tests at the beginning of the Preparation Year.
Program. Students in English Levels 1 or 2 will be placed in a special section of PRPL 0011 that will cover the same skills and subject material using lower-level English skills and limited use of Arabic.

**PRPL 0012: Theories and Applications of Learning II (0,0)** This course builds on the learning strategies, computer literacy skills, and self-management skills that students have gained in PRPL 0011: Theories and Applications of Learning I. The foundations of critical thinking will be introduced as well as the development of team communication skills, global awareness, and electronic resource skills. Through continued guided application of learning strategies, individual academic advising, computer software applications, and discussion of career and professional development issues, students will continue to build on the skills necessary to achieve academic success. **Prerequisite:** Students must have earned at least a grade of “C” or better in PRPL 0011. They must have achieved English Level 4 proficiency or higher, either by successful completion of Level 3 or by class assignment following placement tests at the beginning of the Preparation Year Program.

**OVERVIEW OF THE UNDERGRADUATE CORE CURRICULUM**

The Undergraduate Core Curriculum contains three components.

The University Core Curriculum contains courses required of all PMU students. These courses are designed to develop the six core competencies that distinguish PMU graduates.

**Group I (18 semester hours required)**
- COMM 1311: Written Communication
- COMM 1312: Writing and Research
- COMM 2311: Oral Communication
- COMM 2312: Technical and Professional Communication
- UNIV 1211: Professional Development and Competencies
- UNIV 1212: Critical Thinking and Problem Solving
- UNIV 1213: Leadership and Teamwork

**Group II (14 Semester hours required)**
- Arabic Language*
- Islamic Studies*
  (*1 two semester-hour course each semester for 7 semesters)

**Group III (2 semester hours required)**
- Physical Education*
  (*Physical Education is typically taken during the Freshman year.)

The College Core Curriculum prescribes academic subjects which PMU students are required to master. Each college of the university (Engineering, including Interior Design; Information Technology; and Business Administration) determines the specific College Core courses that will be required of its students. All students, however, are required to successfully complete courses in each of three College Core fields: natural and physical sciences, mathematics, and social and behavioral sciences.
Mathematics (6 semester hours [two 3-hour courses] must be taken. Colleges designate specific required courses, if any)

- MATH 1311: Finite Mathematics for Students of Business
- MATH 1312: Calculus for Students of Business
- MATH 1313: Statistical Methods
- MATH 1321: Pre-Calculus Mathematics
- MATH 1422: Calculus I
- MATH 1423: Calculus II

- MATH 1324: Calculus III
- MATH 2331: Linear Algebra
- MATH 2332: Ordinary Differential Equations

Natural and Physical Sciences (8 semester hours [two 4-hour courses] must be taken. Colleges designate specific required courses, if any.)

- BIOL 1411: Introductory Biology
- CHEM 1411: Introductory Chemistry
- CHEM 1421: Chemistry for Engineers I
- CHEM 1422: Chemistry for Engineers II
- GEOL 1411: Introductory Physical Geology
- PHYS 1411: Introductory Physics
- PHYS 1421: Physics for Engineers I
- PHYS 1422: Physics for Engineers II

Social and Behavioral Sciences (6 semester hours [two 3-hour courses] must be taken. Colleges designate specific required courses, if any.)

- ECON 1311: Introduction to Macroeconomics
- ECON 1312: Introduction to Microeconomics
- GEGR 1311: World Regional Geography
- HIST 1311: World Civilizations, 1600 - Present
- PSYC 1311: Introduction to Psychology

The Assessment Capstone Series consists of three courses required of all PMU students. The first two courses are designed to increase the success of the third and final capstone course taken during the student’s senior year. The Assessment Capstone Series will measure the student’s success in achieving the six PMU learning outcomes.

- ASSE 2111: Learning Outcome Assessment I
- ASSE 3211: Learning Outcome Assessment II
- ASSE 4311: Learning Outcome Assessment III

CORE CURRICULUM COURSE DESCRIPTIONS

Outcome Assessment - ASSE

ASSE 2111: Learning Outcome Assessment I (1,0) The course will be
taken by students during their first semester in the second year of the undergraduate program and will orient them to learning-outcome expectations, the development of a learning portfolio, and the assessment process. **Prerequisite:** None

**ASSE 3211: Learning Outcome Assessment II (2,0)** The course will be taken by students during their first semester in the third year of the undergraduate program and will orient them to learning-outcome expectations, the development of a learning portfolio, and the assessment process. The course builds on ASSE 2111 to prepare students for the final capstone experience, ASSE 4311. **Prerequisite:** ASSE 2111

**ASSE 4311: Learning Outcome Assessment III (3,0)** The course will be taken by students either first or second semester of the fourth year of the undergraduate program. The semester during which the course is taken will be determined by the student’s major field of study. The course will orient students to learning outcomes expectations, the development of a learning portfolio, and the assessment process. The course requires students to meet all the university learning objectives. **Prerequisite:** ASSE 3211

**Biology - BIOL**

**BIOL 1411: Introductory Biology (3,1)** BIOL 1411 will provide students with a foundation in basic biological principles. Students will gain familiarity with the biological world from both a taxonomic perspective (plant, animal, microbe) and process-based perspective (biochemistry, cell biology, physiology, ecology, behavior). Additionally, students will learn to integrate biological material into the broader world around them, and to develop critical thinking and problem solving skills involving quantitative data from the natural sciences. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisite:** None

**Chemistry – CHEM**

**CHEM 1411: Introductory Chemistry (3,1)** CHEM 1411 will provide students with a foundation in basic chemical principles. Students will gain familiarity with chemical equations and reactions, and they will be given the tools necessary to solve chemical problems that they might encounter on a daily basis. An important component will be an understanding of the impact of chemistry on all aspects of humans and human civilization. Students will learn to integrate chemical understanding in the broader world around them, and develop critical thinking and problem solving skills involving quantitative data from the natural sciences. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled, one-credit laboratory that accompanies it. **Prerequisite:** None

**CHEM 1421: Chemistry for Engineers I (3,1)** The objective of CHEM 1421 is to create a substantial base for a two-semester chemistry sequence to provide the additional chemistry required by engineering students prior to specialized courses in chemical engineering applications. This course is
not to be taken by non-engineering students. The approach, like that of the following semester CHEM 1422, will be largely conceptual leading to an understanding of chemistry and chemical processes. Students in this course will gain familiarity with the chemical/atomic structure of ions, molecules and atoms and how they react. Emphasis will be on a quantitative approach involving chemical reactions and their control. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled, one-credit laboratory. **Prerequisite:** Scoring well in high school chemistry is a prerequisite. MATH 1321: Pre-Calculus is a corequisite.

**CHEM 1422: Chemistry for Engineers II (3,1)** The objective of CHEM 1422 is to build upon the base provided in the prerequisite CHEM 1421, and to provide the additional chemistry required by engineering students prior to specialized courses in chemical engineering applications. This course is not to be taken by non-engineering students. The approach, like that of the CHEM 1421, will be largely conceptual leading to an understanding of chemistry and chemical processes. Students in this course will gain familiarity with the physical chemistry of liquids and solids, the nature of equilibrium, acids and bases, and thermodynamics and electrochemistry. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisites:** MATH 1422: Calculus I, CHEM 1421: Chemistry for Engineers I

**Communication - COMM**

**COMM 1311: Written Communication (3,0)** Introduces students to writing as process and product. Students will learn invention, selection, arrangement, presentation, and revision as parts of the writing process leading to compositions that are clear, concise, and correct. The course will also teach students to identify and correct errors in written communication, with an emphasis on grammar, mechanics, and proper manuscript form. **Prerequisite:** None

**COMM 1312: Writing and Research (3,0)** This course continues the work of assisting students to develop, organize, and express insights, observations, and ideas effectively, but in the context of planning and composing a formal research paper. In the course of doing research for a 3,000-5,000 word paper, students will learn to use computer databases and online sources as well as library materials and will significantly sharpen their analytical reading, critical thinking, and writing skills. **Prerequisite:** COMM 1311: Written Communication

**COMM 2311: Oral Communication (3,0)** This course assists students in the development and presentation of clear, cogent, and compelling oral presentations. Students will learn to evaluate ideas and evidence, to think critically, and to communicate effectively in group situations. A major oral
presentation will be based on the written research project completed for COMM 1312: Writing and Research. **Prerequisite:** COMM 1312: Writing and Research

**COMM 2312: Technical and Professional Communication (3,0)** This course builds on the writing and communication skills developed in COMM 1311, 1312, and 2311. Students will learn a variety of technical and professional writing techniques, will draft a professional resume, business letters, technical papers and memoranda, and will work in teams using technology to produce reports and presentations. **Prerequisites:** COMM 1311: Written Communication, COMM 1312: Writing and Research, COMM 2311: Oral Communication

**Economics – ECON**

**ECON 1311: Introduction to Macroeconomics (3,0)** The course studies resources and goals of the economy, national income, employment, money and banking, fiscal and monetary policy, contemporary problems, economic growth, and international economics. **Prerequisite:** None. ECON 1311 may be taken before or after ECON 1312, or only one of the courses may be taken.

**ECON 1312: Introduction to Microeconomics (3,0)** The course studies markets, resource allocation, consumer and producer behavior, production, costs, market structure, and the role of government in a market economy. **Prerequisite:** None. ECON 1312 may be taken before or after ECON 1311, or only one of the courses may be taken.

**Geography – GEGR**

**GEGR 1311: World Regional Geography (3,0)** The course is primarily a survey of physical and cultural patterns of the world. It presents a broad overview of geographical features such as landforms, language of maps, graphs, languages, climates, and other aspects of each particular world region. **Prerequisite:** None

**Geology – GEOL**

**GEOL 1411: Introductory Physical Geology (3,1)** GEOL 1411 provides students with a foundation in basic geological principles. Students will gain familiarity with the geological world, including the earth’s composition and geologic processes. An important component will be an understanding of the interactions between humans, human civilization, and the geologic process. Additionally, students will learn about geologic hazards and how they can be overcome or contained. Students will learn to integrate geological material into the broader world around them, and develop critical thinking and problem solving skills involving quantitative data from the natural sciences. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisite:** None

**History – HIST**
HIST 1311: World Civilizations, 1600 – Present (3,0) This course is a survey of the development of the major civilizations of the world from 1600 to the present. HIST 1311 stresses the dynamism and expansion of the West, the interpenetration of cultures in the modern era, and the resurgence of non-Western independence in the 20th century. **Prerequisite:** None

Mathematics – MATH

MATH 1311: Finite Mathematics for Students of Business (3,0) This course covers topics from the mathematics of finance that should be familiar to all students seeking careers in the business world. These include mathematics related to supply, demand and cost analysis; interest, annuity and investments; probability and decision making; and Markov processes. Students should acquire the necessary mathematical basis for further study in economics and finance. **Prerequisite:** The algebraic manipulation skill commensurate with that gained in the Preparation Year Program.

MATH 1312: Calculus for Students of Business (3,0) This course covers topics from calculus that should be particularly useful for students studying economics and finance. Such topics include regression analysis, mathematical modeling, rate of change, and marginal analysis from differential calculus. Topics covered from integral calculus include optimization and area calculations as they apply to average value, value of continuous income flows, coefficients of inequity, and consumer and producer surplus. Students should acquire the necessary mathematical knowledge and skills for further study in economics and finance. **Prerequisite:** MATH 1311: Finite Mathematics for Students of Business.

MATH 1313: Statistical Methods (3,0) Statistical Methods covers statistical models and methods of analyzing data. These include estimation, tests of significance, analysis of variance, linear regression, and correlation. Students will acquire the necessary statistical basis for using available information to make rational decisions. **Prerequisite:** The algebraic manipulation skill commensurate with that gained in the Preparation Year Program.

MATH 1321: Pre-Calculus Mathematics (3,0) Pre-Calculus Mathematics covers those topics needed for successful completion of Calculus I. Such topics include modeling with functions: linear, quadratic, exponential, and logarithmic. In addition, trigonometric functions with the related laws and identities are covered in some detail. Students should acquire the necessary mathematical knowledge and skills for further studies in calculus and engineering. **Prerequisite:** The algebraic manipulation skill commensurate with that gained in the Preparation Year Program.

MATH 1422: Calculus I (3,1) Calculus I covers topics from differential calculus with an introduction to integration. Topics include limits of functions, concept of differentiation of one variable with rules for
differentiation, and applications of derivatives involving related rates, optimization, and curve sketching. Integration is introduced and the Fundamental Theorem of Calculus is covered. Students should acquire the necessary mathematical knowledge and skills for further study in calculus and engineering. The course will be taught in the lecture format, one hour per class, three hours per week, with an additional one-hour problem-solving recitation. **Prerequisite:** MATH 1321: Pre-Calculus, or skills and knowledge thereof as measured by placement tests.

**MATH 1423: Calculus II (3,1)** Calculus II is the continuation of MATH 1422: Calculus I. It covers topics from integral calculus of one variable, infinite sequences and series, and vectors. Students continue to acquire the necessary mathematical knowledge and skills for further study in calculus and engineering. The course will be taught in the lecture format, one hour per class, three hours per week, with an additional one-hour problem-solving recitation. **Prerequisite:** MATH 1422: Calculus I.

**MATH 1324: Calculus III (3,0)** Calculus III is the continuation of MATH 1423: Calculus II and the final course in the pre-engineering calculus sequence. It covers topics from multivariable calculus including vector-valued functions, multiple integration, and vector analysis. Students complete their acquisition of the necessary mathematical knowledge and skills for further study in engineering. **Prerequisite:** MATH 1423: Calculus II

**MATH 2331: Linear Algebra (3,0)** Linear Algebra covers topics from linear algebra including vector spaces, linear transformations and matrices, matrix operations, and eigenvectors and eigenvalues. Students acquire mathematical knowledge and skills with matrices, linear systems, and vector spaces necessary for further study in engineering. The course will be taught in the lecture format, one hour per class, three classes per week. **Prerequisite:** MATH 1324: Calculus III

**MATH 2332: Ordinary Differential Equations (3,0)** This course covers topics involving single variable differential equations. These include methods for solving first and second order differential equations, Laplace Transforms, and Fourier Series and Transforms. Students acquire mathematical knowledge and skills to model and solve problems arising from engineering. The course will be taught in the lecture format. **Prerequisites:** MATH 1324: Calculus III and MATH 2331: Linear Algebra.

**Physics – PHYS**

**PHYS 1411: Introductory Physics (3,1)** PHYS 1411 will investigate the fundamental principles that underlie the behavior of the universe. The approach will be largely a conceptual one that leads to an understanding of physics rather than just the ability to solve mathematical problems that are examples of physics. Students will gain familiarity with the forces and laws of nature that govern the physical world, from the sub-atomic to
astronomical levels. Importantly, students will be guided through concepts in physics that ultimately let them recognize important, practical applications in the everyday world of fundamental physical principles. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisite:** Advanced high school mathematics. Successful completion of an introductory course in biology, geology, chemistry, or physics at the high school level is recommended.

**PHYS 1421: Physics for Engineers I (3,1)** PHYS 1421 is to create a base for a two-semester physics sequence to provide the additional physics required by engineering students prior to specialized courses in engineering physics applications. The approach, like that of the following semester PHYS 1422, will be largely conceptual leading to an understanding of physics rather than just the ability to solve mathematical problems that are examples of physics. Students in this course will gain familiarity with single particle kinematics and dynamics, multi-particle systems, rotational motion, oscillations, waves and sound. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory that accompanies it. **Prerequisites:** MATH 1321: Pre-Calculus

**PHYS 1422: Physics for Engineers II (3,1)** The objective of the course is to build upon the base offered in PHYS 1421, and provide the additional physics required by engineering students prior to specialized courses in engineering physics applications. The approach will be largely conceptual leading to an understanding of physics rather than just the ability to solve mathematical problems that are examples of physics. Students in this course will gain familiarity with electricity, magnetism, nuclear physics and how light interacts with matter. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory that accompanies it. **Prerequisite:** PHYS 1421: Physics for Engineers I, MATH 1422: Calculus I.

**Psychology – PSYC**

**PSYC 1311: Introduction to Psychology (3,0)** This course is an introduction to fundamentals of psychology including an overview of the concepts and methods of such areas as perception, learning, motivation, memory, development, personality, abnormal, and social psychology. **Prerequisite:** None

**University Core – UNIV**

**UNIV 1211: Professional Development and Competencies (2,0)** The objective of this course is to use basic skills of learning and time and apply these skills toward competencies related to the student’s chosen field. Students are introduced to the opportunities, required skills, challenges, and ethics of their chosen field, as well as to the expectations of prospective employers and accrediting agencies (where applicable). **Prerequisite:** None
UNIV 1212: Critical Thinking and Problem Solving (2,0) This course covers basic topics involving critical thinking and problem solving. These include deductive and inductive reasoning, values and ethics, fallacy, and causality. The students will learn how to analyze and present valid arguments. **Prerequisite:** UNIV 1211: Professional Development and Competencies.

UNIV 1213: Leadership and Teamwork (2,0) The purpose of this interdisciplinary course is to introduce students to the characteristics of leadership. Students gain a broad understanding of the theoretical approaches to leadership and teamwork and the core concepts of contemporary leadership. Mastering the fundamental concepts increases the student’s ability to apply these concepts to his or her own life experience. **Prerequisite:** UNIV 1211: Professional Development and Competencies, UNIV 1213: Critical Thinking and Problem Solving