

# COLLEGE OF ENGINEERING

## COURSE CATALOG

### BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

- GEC 1 UNDERSTANDING THE SELF**  
Nature of identity; factors and forces that affect the development and maintenance of personal identity.  
Credit : 3 units  
No. of hrs/wk : 3  
Prerequisite : None
- GEC 2 READINGS IN PHILIPPINE HISTORY**  
Philippine History viewed from the lens of selected primary sources in different periods with local history added, analysis and interpretation.  
Credit : 3 units  
No. of hrs/wk : 3  
Prerequisite : None
- GEC 3 THE CONTEMPORARY WORLD**  
Globalization and its impact on individuals, communities and nations: challenges and responses.  
Credit : 3 units  
No. of hrs/wk : 3  
Prerequisite : None
- GEC 4 MATHEMATICS IN THE MODERN WORLD**  
Nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions, and application of mathematical tools in daily life.  
Credit : 3 units  
No. of hrs/wk : 3  
Prerequisite : None
- GEC 5 PURPOSIVE COMMUNICATION**  
Writing, speaking and presenting to different audiences and for various purposes.  
Credit : 3 units  
No. of hrs/wk : 3  
Prerequisite : None

- GEC 6                    ART APPRECIATION**  
Nature, function and appreciation of the arts in contemporary society.  
Credit                    : 3 units  
No. of hrs/wk        : 3  
Prerequisite         : None
- GEC 7                    SCIENCE, TECHNOLOGY AND SOCIETY**  
Interactions between science and technology and social, cultural, political and economic contexts which shape and are shaped by them; specific examples throughout human history of scientific and technological developments.  
Credit                    : 3 units  
No. of hrs/wk        : 3  
Prerequisite         : None
- GEC 8                    ETHICS**  
Principles of ethical behavior in modern society at the level of the person, society, and in interaction with the environment and other shared resources.  
Credit                    : 3 units  
No. of hrs/wk        : 3  
Prerequisite         : None
- GEC 9                    LIFE AND WORKS OF RIZAL**  
The study of the life of Rizal and his literary works.  
Credit                    : 3 units  
No. of hrs/wk        : 3  
Prerequisite         : None
- GEC 10                  HISTORY OF THE MUSLIM FILIPINOS AND THE IPs OF MINDANAO**  
The course deals with the historical overview of the Muslim Filipinos and the indigenous peoples of Mindanao. The Sulu Archipelago and Palawan since the pre-colonial times with focus on how these people fought against the forces of foreign and local domination.  
Credit                    : 3 units  
No. of hrs/wk        : 3  
Prerequisite         : None



preparation for and/or in conjunction with vigorous physical activities, such as sports participation.

Credit : 2 units

No. of hrs/wk : 3

Prerequisite : PE 1

**PE 3**

**PATH-FIT 3 (Physical Activities Toward Health & Fitness 3): MENU OF DANCE, SPORTS, MARTIAL ARTS, GROUP EXERCISE, OUTDOOR & ADVENTURE ACTIVITIES**

This course tackles the fundamental skills of the dance/sport/martial arts/group exercise/outdoor and adventure activity that include (specify here activity-specific skills: for example – table tennis-ball control (grip, stance and footwork), strokes (forehand and backhand push), the serve and return of serve). It also engages the learner in game play with some basic strategies or tactics (applicable only to sports). Through skills training in class, pursuit of recreation (or independent physical activities) beyond the classes and in conjunction with fitness and healthy eating concepts, fitness levels are enhanced. PA and eating habits are also periodically evaluated to monitor one's progress and achievement of personal fitness and dietary goals.

Credit : 2 units

No. of hrs/wk : 3

Prerequisite : PE 2

**PE 4**

**PATH-FIT 4 (Physical Activities Toward Health and Fitness 4): MENU OF DANCE, SPORTS, GROUP EXERCISE, OUTDOOR & ADVENTURE ACTIVITIES**

The course tackles the fundamental skills of the dance/sports/martial arts/group exercise/outdoor and adventure activity that include (specify here activity specific skills: for example – table tennis-ball control (grip, stance and footwork), strokes (forehead and backhand drive, forehand and backhand push), the serve and return of serve. It also engages the learner in game play with some basic strategies or tactics (applicable only to sports). Through skills training in class, pursuit of recreation (or independent physical activities) beyond the classes and in conjunction with fitness and healthy eating concepts, fitness levels are enhanced. PA and eating habits are also periodically evaluated to monitor one's progress and achievement of personal fitness and dietary goals.

Credit : 2 units

No. of hrs/wk : 3

Prerequisite : PE 3

**NSTP 1****NATIONAL SERVICE TRAINING PROGRAM 1: CIVIC WELFARE TRAINING SERVICE 1**

The National Service Training Program (NSTP) aimed in enhancing civic consciousness and defense preparedness in the youth, by developing the ethics of service and patriotism while undergoing training in any of the three (3) program components (CWTS, LTS, ROTC), specially designed to enhance the youth's active contribution to the general welfare.

The **Civic Welfare Training Service (CWTS)** is a program component of NSTP contributory to the general welfare and the betterment of life for the members of the community and the enhancement of its facilities, especially those devoted to improving health, education, environment, entrepreneurship, safety, recreation and moral of the citizenry and other social welfare services.

Credit : 3 units  
No. of hrs/wk : 3  
Prerequisite : None

**NSTP 2****NATIONAL SERVICE TRAINING PROGRAM 2: CIVIC WELFARE TRAINING SERVICE 2**

This is a 3-unit course designed to train students on civic consciousness and defense preparedness. This requires the students to develop the ethics of community service and patriotism as well as possess a sense of volunteerism. This course will have the need for the student to be well-informed on the following topics: Citizenship Training, Environmental Protection, Disaster Preparedness, Drugs Addiction and National Security.

Credit : 3 units  
No. of hrs/wk : 3  
Prerequisite : NSTP 2 (CWTS 2)

**AEE 9****MICROPROCESSOR SYSTEMS LEC**

Course Description: This course includes history and evolution, principles, and applications of microprocessors. The focus is on the basic understanding of the architectural design, functional parts, operations, function and programming. It also covers the study of various types of microprocessors and the fundamental concepts of microcontrollers.

Credits Units: 3  
Pre-Requisite: Logic Circuits and Design  
Co-Requisite: Microprocessors Lab

**BES 9****MANAGEMENT OF ENGINEERING PROJECT**

Course Description: The course covers the principles of management, theory, and practice, various approaches to decision making, managing production and services operations; and project management. Emphasis is also given to the managerial functions of planning, organizing, staffing, leading, and controlling.

Credits Units: 3

Pre-Requisite: None (3<sup>rd</sup> Year standing)

Co-Requisite: None

**CHEM 1****CHEMISTRY FOR ENGINEERS LECTURE**

Course Description: This course provides students with core concepts of chemistry that are important in the practice of the engineering profession. Topics include Energy, The Chemistry of Engineering Materials, Basic Concepts of Crystal Structure, Thermodynamics, The Chemistry of the Atmosphere, The Chemistry of Waters, Soil Chemistry, and Chemical Safety.

Credits Units: 3

Pre-Requisite: None

Co-Requisite: Chemistry For Engineers Laboratory

**CHEM 1.1****CHEMISTRY FOR ENGINEERS LABORATORY**

Course Description: A fundamental laboratory course designed to relate and apply the principles and theories in chemistry to engineering practices. It is a combination of experimental and calculation laboratory.

Credits Units: 1

Pre-Requisite: None

Co-Requisite: Chemistry For Engineers Lecture

**EM 2****CALCULUS 2**

Course Description: The course introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi- variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

Credits Units: 3

Pre-Requisite: EM 1

Co-Requisite: None

**EM 3****ENGINEERING DATA ANALYSIS**

Course Description: This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how & quot; chance & quot; plays a role in statistical analysis. Probability distributions of random variables and their uses are also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

Credits Units: 3

Pre-Requisite: EM 1

Co-Requisite: None

**FCE 2.1****COMPUTER FUNDAMENTALS & PROGRAMMING**

Course Description: Basic information technology concepts; fundamentals of algorithm development; high-level language and programming applications; computer solutions of engineering problems.

Credits Units: 2 units (6 hours)

Pre-Requisite: Second Year standing

Co-Requisite: None

**PCpE 18****MICROPROCESSORS LEC**

Course Description: This course provides understanding of architecture of microprocessor-based systems; registers, study of microprocessor operation, assembly language, arithmetic operations, and interfacing.

Credits Units: 3

Pre-Requisite: Logic Circuits and Design

Co-Requisite: Microprocessors Lab

**PCpE 31****ON THE JOB TRAINING**

Course Description: This course enables students to relate their acquired competencies to the realities and problems of industries in a multidisciplinary environment. This may include involvement in the industry's manpower requirements, development and research concerns, training, applications of principles, environmental concerns, ethical and behavioral concerns, decision making, and equipment and material concerns.

Credits Units: 3

Pre-Requisite: 4<sup>th</sup> Year standing

Co-Requisite: None