College of Computer Studies and Engineering
Lorma Colleges City of San Fernando

Bachelor of Science in Computer Engineering
SY 2010-2011
Course Description

FIRST YEAR
FIRST SEMESTER

COURSE NO: ALGEBRA
DESCRIPTIVE TITLE: College Algebra
PRE REQUISITE: NONE
UNITS: 3
Course Description: A course involving the study of the real number line, algebraic operations and processes of elementary algebraic terms, and also those that involves exponents and radicals, linear equations, quadratic equations, system equations, and its applications, the binomial theorem, factoring fractions, progressions, ratio proportions and variations, the fundamental theorem of algebra, theory of equations, determinants, partial fractions permutations and combinations and complex numbers.

COURSE NO: MATH 2
DESCRIPTIVE TITLE: Plane and Spherical
PRE REQUISITE: ALGEBRA
UNITS: 3
Course Description: This covers fundamental concepts of plane trigonometry and of plane analytic geometry. Trig functions, trig identities, solving triangles, analytic geometric proofs, conies, parametric equations.

COURSE NO: DRAW 11
DESCRIPTIVE TITLE: Engineering Drawing 1
PRE REQUISITE: NONE
UNITS: 2
Course Description: Basic engineering, lettering and sketching.

COURSE NO: BIBLE01
DESCRIPTIVE TITLE: Christian Foundation
PREREQUISITE: NONE
UNITS: 3
Course Description: This course is an introduction of the story of the Bible, the nature and being of God and the power of God's word in one's life with emphasis of the life,

person and ministry of the Lord Jesus Christ. It also embraces biblical and Christian values that will inspire the students to live uprightly and to achieve excellent and honorable aspirations.

COURSE NO: MODCOM1
DESCRIPTIVE TITLE: Modern Communication 1
PRE REQUISITE: NONE
UNITS: 3
Course Description: This course is designed to provide students with the necessary communicative skills in English. It is also focuses on the different parts of speech and sentence patterns. Furthermore, it includes reading selections as springboard for the teaching and development of grammatical concepts

COURSE NO: NSTP001
DESCRIPTIVE TITLE: NSTP 1
PRE REQUISITE: NONE
UNITS: 3
Course Description: The Civic Welfare Training Service (CWTS) is a component of the National Service Training Program (NSTP) is a course for first year students both males and females designed to help them understand, appreciate and eventually

COURSE NO: PHYSED1
DESCRIPTIVE TITLE: Physical Fitness
PRE REQUISITE: NONE
UNITS: 2
Course Description: This course include a wide variety of activities that can be used for physical fitness purposes, providing the students the fundamental understanding the basic body mechanics of gymnastics, stunts and physical fitness exercises.

FIRST YEAR

SECOND SEMESTER

COURSE NO: BIBLE02
DESCRIPTIVE TITLE: Christian Life and Ethics
PREREQUISITE: BIBLE01
UNITS: 3
Course Description: This course introduces the individual students in the development of dynamic Christian life and ethics that will gear to a potential and harmonious

relationship with his God, his family, his community and his life.

COURSE NO: DRAW 12
DESCRIPTIVE TITLE: Engineering Drawing 2
PRE REQUISITE: DRAW 11
UNITS: 2
Course Description: Basic principles of building layout and planning evaluations, sections and structural details.

COURSE NO: MATH 3
DESCRIPTIVE TITLE: Plane and Solid Analytic Geometry
PRE REQUISITE. MATH 1, 2
UNITS: 3
Course Description: This covers fundamental concepts of plane trigonometry and of plane analytic geometry. Trig functions, trig identities, solving triangles, analytic geometric proofs, conies, parametric equations.

COURSE NO: POLIGOV
DESCRIPTIVE TITLE: Politics and Governance with New Const.
PRE REQUISITE: NONE
UNITS: 3
Course Description: POLIGOV is an introductory course in political science that aims to provide students with systematic overview of the political world, with particular attention on the Philippine experience. It introduces students to the fundamental concepts, theories and methods in the study of politics, and their proper application in the process of political analysis. The course examines the structures, processes and environment that shape contemporary power relations and have a significant bearing on the practice of politics and governance. Through the course, students learn to use analytic frameworks in understanding contemporary issues in politics and governance.

COURSE NO: MATH 4
DESCRIPTIVE TITLE: Differential Calculus
PRE REQUISITE: MATH 1, 2
UNITS: 3
Course Description: This subject is intended to prepare students for advanced mathematical operations particularly in the field of engineering. Differential Calculus will focus on functions, limits, derivatives, polynomial curves, differentiation of algebraic, exponential, logarithmic, trigonometric, inverse trigonometric functions, time rates, parametric equation, partial differentiation and other theories that strengthens students mind as a linkage between mathematics and engineering. This subject aims to provide

students knowledge on how to prove and evaluate differential functions applying this course.

COURSE NO: MODCOM2
DESCRIPTIVE TITLE: Modern Communication 2
PRE REQUISITE: MODCOM1
UNITS: 3
Course Description: This course is designed to provide students with the necessary communicative skills in English. It is also focuses on the different parts of speech and sentence patterns. Furthermore, it includes reading selections as springboard for the teaching and development of grammatical concepts.

COURSE NO: PHYSED2
DESCRIPTIVE TITLE: Rhythmic Activities
PRE REQUISITE: PHYSED1
UNITS: 2
Course Description: The emphasis of this course is on learning on the fundamentals of the Philippine Folk Dances, Ballroom Dances and other types of dances.

COURSE NO: NSTP002
DESCRIPTIVE TITLE: NSTP 2
PRE REQUISITE: NSTP01
UNITS: 3
Course Description: The Civic Welfare Training Service (CWTS) 2 is a sequel to CWTS 2. It is designed to immerse students in activities that will arm them with the capability to contribute to the uplift of the general welfare and the quality of life for the members of the community and the enhancement of its facilities especially those that are devoted to improving the health, environment, entrepreneurship, safety, recreation and morals of the citizens.

SECOND YEAR

FIRST SEMESTER

COURSE NO: MATH 5
DESCRIPTIVE TITLE: Integral Calculus
PRE REQUISITE: MATH 3, 4
UNITS: 3
Course Description: The course helps students learn how to prepare and analyze financial statements, and understand the role that accounting plays in business decisions. Topics include: stock and bond investments, cash flow reporting, financial

statement analysis techniques, and manufacturing and cost accounting issues

COURSE NO: COLPHYS 2
DESCRIPTIVE TITLE: College Physics 2
PRE REQUISITE: COLPHYS1
UNITS: 2/1
Course Description: This course is designed to give non-majors in engineering an introduction to electric circuits, semiconductor devices, and microelectronic circuits, it covers the basic principles of circuit analysis, transient analysis, AC steady-state analysis, introduction to semiconductor devices and fabrication, digital logic circuits, op-amps, and A/D and D/A conversion.

COURSE NO: TECHWRI
DESCRIPTIVE TITLE: Technical Writing
PRE REQUISITE: MODCOM2
UNITS: 3
Course Description: This course covers principles and procedure of technical writing; attention to analyzing audience and purpose, organizing information, designing graphic aids, and writing such specialized forms as abstracts, instructions, and proposals.

COURSE NO: JPRIZAL
DESCRIPTIVE TITLE: Life, Works and Writings of Dr. Jose Rizal
PRE REQUISITE: NONE
UNITS: 3
Course Description: The course deals with the life, works and writings of Dr. Jose Protacio Mercado Rizal. It aims to present to the students the different attribute that made him acclaimed, " Great Malayan". It presents the richness of Rizal's thought and teaching which are his living legacies to the human race. The course further aims to let the students see themselves in Rizal's life they may realize the essence of their being a Filipino and that their national consciousness be awakened and help the Philippine attain greater heights. It is within the aim of this course that these young citizens develop in themselves a perspective and horizons patterned with that of Rizal which is worth emulating.

COURSE NO: PHYSED3
DESCRIPTIVE TITLE: Individual / Dual Sports
PRE REQUISITE: PHYSED1
UNITS: 2
Course Description: This course is designed to offer undergraduate students an l-depth experience with various outdoor skills for individual and dual sports.

SECOND YEAR

SECOND SEMESTER

COURSE NO: MATH 6
DESCRIPTIVE TITLE: Differential Equation
PRE REQUISITE: MATH 5
UNITS: 3
Course Description: The subject of differential equations can be described as the study of equations involving derivatives. It can also be described as the study of anything that changes. The reason for this goes back to differential calculus, where one learns that the derivative of a function describes the rate of change of the function. Thus any quantity that varies can be described by an equation involving its derivative, whether the quantity is a position, velocity, temperature, population or volume.

COURSE NO: COMP 202
COURSE TITLE: Internet and Multimedia System
PRE REQUISITE: COMP 101
UNITS: 2/1
Course Description: Internet and Multimedia System is designed to study and use basic Internet technologies such as telnet, group communication tools, FTP, and the World Wide Web. And also utilizing other Internet applications such as email, newsgroups, and gopher for class projects and communication. Students will design and build their own web pages as part of a final project, incorporating basic HTML and multimedia types such as animation, audio and video. Students will also learn about the various types of multimedia applications and how to construct effective interactive multimedia messages

COURSE NO: PHYSED4
DESCRIPTIVE TITLE: Group / Team Sports
PRE REQUISITE: PHYSED1
UNITS: 2
Course Description: This course introduces the students to the background, skills needed to play, officiating, rules and regulations and others, pertaining to Volleyball and Basketball.

THIRD YEAR

FIRST SEMESTER

COURSE NO: MATH 7
COURSE TITLE: Advance Mathematics
PRE REQUISITE: MATH 6
UNITS: 3
Course Description: Advance principles for the study to the other specialized and non-Von Neumann architectures, such as the Harvard system being used in selected micro controllers and digital signal processors. The distinctions between RISC and CISC processors are detailed in this course. Micro-programming, pipelining and parallel computer architectures are some of the major topics to focus for the subject.

COURSE NO: COE 321
COURSE TITLE: Electronics 1 (Laboratory)
PRE REQUISITE: Physics 2
UNITS: 1
Course Description: This course provides hands-on experiments linking real-world circuits with theory learn in the lecture class. Digital Voltage-Ohm meters, Signal generators and Oscilloscopes are some of the treat measurement tools used by the students to powerful CAD tools for electronics.

COURSE NO: EM301
COURSE TITLE: Engineering Mechanics
PRE REQUISITE: 3rd year standing
UNITS: 3
Course Description: The subject deals with the principles of statistics and dynamics which includes the following sub-topics introduction of statistics, resultant of force systems, equilibrium of force systems, analysis of structures, friction, force systems in space, centroid and moment of inertia. It also includes the sub-topics of dynamics, rectilinear and curvilinear translations and rotation.

COURSE NO: EM 321
COURSE TITLE: Electronics 1 (Lecture)
PRE REQUISITE: Physics 2
UNITS: 3
Course Description: This course deals with semiconductors. Its focus is on the analysis of different circuits that utilizes diodes and transistors in general.

COURSE NO: FILIPI1
DESCRIPTIVE TITLE: Sining ng Pakikipagtalastasan
PRE REQUISITE: NONE

UNITS: 3
Course Description: Nilalayon ng kursong ito na maipakilala sa estudyante ang pangkalahatang saklaw ng pagtuto sa wika at komunikasyon. Nakabatay ang pananaw at prinsipyo ng kurso sa paghubog at paglinangng isang mulat na kamalayan, mula sa pag-unawa sa kalikasan ng wika at komunikasyon, hanggang sa paggamit sa mga kaalamang ito upang makabuo siya ng isang epektibong ugnayan sa kanyang kapwa at mapalawak ang kanyang pagkilalasa sarili at daigdig. Sa pamamagitan ng kursong ito, mamumulat ang estudyante na ang susi niya sa isang epektibo at dinamikong pakikipagkapwa ay nakasalalay sa kanyang masining na paglinang sa kanyang pakikinig, pagsasalita, pagbabasa, at pagsusulat.

THIRD YEAR

SECOND SEMESTER

COURSE NO: COE 312
DESCRIPTIVE TITLE: Electrical Circuits
PRE REQUISITE: COE 311
UNITS: 3/1
Course Description: The subject is intended for the students to perform their laboratory manuals which includes all experiments in Electrical Circuits Lab manual and simple house wiring.

COURSE NO: COMP 304
DESCRIPTIVE TITLE: Computer Programming
PRE REQUISITE: COMP 101
UNITS: 2/1
Course Description: The course covers programming logic formulation, complex algorithm, introduction to the object-oriented programming language.

COURSE NO: EM 302
DESCRIPTIVE TITLE: Engineering Materials
PRE REQUISITE: EM 301
UNITS: 3
Course Description: This course deals on different materials that are being used in the electronics industry. Topics include a review of the Atomic structure and Chemical Bonds, Properties, Processing, Defects, Imperfections and us of metals, ceramics, polymers and semiconductors. IC manufacturing and assembly will also be discussed as part of the application of electronic materials. Towards the end of the course, nanotechnology will also discussed to show the future technology that will replace IC.

COURSE NO: THERMO
DESCRIPTIVE TITLE: Thermodynamics
PRE REQUISITE: Physics 2
UNITS: 3
Course Description: This subject is intended to prepare students for technical skills and operate machines particularly in the field of engineering. Thermodynamics will focus on basic principles and concepts of thermodynamics, conservation of energy, ideal gas, processes, gas cycles internal combustion engines, gas compressor, Brayton cycle and other theories that strengthens students minds in mechanical point of view. The subject aims to provide students knowledge on how to realize and apply the technical aspects in the course.

COURSE NO: COE 301
DESCRIPTIVE TITLE: Data Structures and Algorithm
PRE REQUISITE: COMP 101
UNITS: 3
Course Description: This course covers fundamental and advanced theories on data structures and algorithms based on the most common middle level language and that is C. It includes studies on the nature of data structures, their origin and features as well as limitations. It also involves study of the primitive data types as well as analysis on the different methods and techniques on how to represent, manipulate and process data in computers.

COURSE NO: PHILHIST
DESCRIPTIVE TITLE: Philippine History
PREREQUISITE: NONE UNITS: 3
Course Description: This course deals with the history and government of the Philippines that serves as the guiding charter of the present Philippine government as well as the concerned individuals embodied in it. It reveals not only the kind of leadership, the political experience, the socio-moral values and the cultural heritage that we have, but also the aspirations and details of our country. The details on the history of our country can be shown ancient to present.

COURSE NO: FILIP1
DESCRIPTIVE TITLE: Pagbabasa at Pagiisip sa Ibat-ibang Komunikasyon
UNITS: 3
Course Description: Ang kursong Filipi2 ay nagbibigay-focus sa pagbabasa at pagsulat sa mga pangangailangang akademik at instrumento sa pagkatuto. Pag-aaralan angmga estratehiya sa kritikal na pagbasa ng iba't ibang genre ng nakasulat (maging naririnig) na textong pang-agham pantao. Ang pagsulat ukol sa mga paksang

akademik, gayundin para sa komunkasyong pampropesyonal ay malaking bahagi ng tasks.

FOURTH YEAR

FIRST SEMESTER

COURSE NO: COE 421
DESCRIPTIVE TITLE: Logic Circuit and Switching Theory
PRE REQUISITE: COMP 101
UNITS: 3/1 (3 hours lecture and 3 hours laboratory)
Course Description: An introduction to digital hardware design, Boolean algebra; combinational and sequential circuits; minimization techniques; design and build logic subsystems, such as decoder multiplexers, adders and multipliers; then algorithmic state machines are also discussed.

COURSE NO: COMP 404
DESCRIPTIVE TITLE: Computer Programming 2
PRE REQUISITE: 404
UNITS: 3
Course Description: Computer structure and machine language: memory, CPU , I/O units, registers, data and instruction types and formats, execute cycle and timing assembly; assembly language: mnemonic operations, symbolic addresses, assembler concepts and instruction formats, data word definition, literal, location counter and error flags; addressing techniques: index and indirect, absolute, and relative addressing; macros: definition, call, parameters and expansion; file I/O; program segmentation and linkage.

COURSE NO: EM 303
DESCRIPTIVE TITLE: Strength of Materials
PRE REQUISITE: EM 301
UNITS: 3
Course Description: Materials science and engineering structures, their properties and performance; physics of engineering materials; polymers and composites; conduction materials; basic semiconductor devices,; semiconductors processing magnetic properties of ceramics and metals; dielectric and optical properties of ceramics and polymers; deformation and fractures.

COURSE NO: MATH 8
DESCRIPTIVE TITLE: Probability and Statistics

PRE REQUISITE: MATH 7
UNITS: 3
Course Description: This subject is intended to prepare students for advanced mathematical operations particularly in the field of engineering. Statistics will focus on collection, presentation, tabulation, interpretation and evaluation of data and other theories that strengthens students minds as a linkage between mathematics and engineering. Probability will focus on the desired outcomes of a certain event. This subject aims to provide students knowledge on how to analyze and evaluate data leading in research and the course.

COURSE NO: COE 411
DESCRIPTIVE TITLE: Energy Conversion
PRE REQUISITE: COE 312
UNITS: 3/1
Course Description: Basic principles of operation of different types of machines and their control; magnetic circuit analysis, single-phase and three-phase transformers, principles of electromechanical energy conversion, DC machines, three-phase induction motors, synchronous machines, introduction to solid-state motor controls and devices, transients and dynamics of machines, introduction to programmable logic controller (PLC), control of machine by PLC.

COURSE NO: COE 402
DESCRIPTIVE TITLE: Computer System Organization
PRE REQUISITE: 4th year standing
UNITS: 3
Course Description: A subject covering the internals of general microprocessors, implementation of arithmetic algorithms, input-output peripherals, memory organizations and basic interfacing of these devices. The concepts of virtual memory systems cache implementations covered all as well.

COURSE NO: ECONTAR
DESCRIPTIVE TITLE: Economics with Taxation and Agrarian Reform
PREREQUISITE: NONE
UNITS: 3
Course Description: Analysis of the effects of taxation on economic behavior; taxation and public choice; the effects of taxation on the distribution of income; theory and empirical analysis of welfare effects of taxes; optimal tax theory; issues in tax policy and tax reform.
Fourth Year Second Semester

COURSE NO: COE 422
DESCRIPTIVE TITLE: Advance Logic Circuits and design
PREREQUISITE: COE 421
UNITS: 3/1
Course Description: Introduction of ASIC design techniques; design and programming of FPGAS using CAD tools timing in sequential circuits; essential hazards; races in sequential circuits; design and built FPGA project. Algorithmic state machines, design of digital sub-systems, designs of sequential circuits and multi-input system controller, introduction to programmable system controller.

COURSE NO: COE 403
DESCRIPTIVE TITLE: Structure of Programming Languages
PREREQUISITE: COE 421
UNITS: 3
Course Description: A comparative study of different programming languages: their constructs, data structures, control and iteration and their implementation.

COURSE NO: COE 406
DESCRIPTIVE TITLE: Computer Programming 3

PREREQUISITE: COMP 304
UNITS: 3/1
Course Description: An introduction to the concepts of object oriented programming, their semantics and implementation using C++. It also covers the programming methodology and application development in C++.

COURSE NO: JPRIZAL
DESCRIPTIVE TITLE: Life, Works, and Writings of Dr. Jose Rizal
PREREQUISITE: NONE
UNITS: 3
Course Description: The course deals with the life, works and writings of Dr. Jose Protacio Mercado Rizal. It aims to present to the students the different attribute that made him acclaimed," Great Malayan". It presents the richness of Rizal's thought and teaching which are his living legacies to the human race. The course further aims to let the students see themselves in Rizal's life they may realize the essence of their being a Filipino and that their national consciousness be awakened and help the Philippine attain greater heights. It is within the aim of this course that these young citizens develop in themselves a perspective and horizons patterned with that of Rizal which is worth emulating.

FOURTH YEAR

SUMMER

COURSE NO: COE 407
DESCRIPTIVE TITLE: On-the-job Training (320 hours)

PREREQUISITE: 4th year standing
UNITS: 5
Course Description: The field is a central learning experience in the Bachelor of Science in Computer Engineering. Students have the opportunity to apply knowledge gain from the previous academic years in the actual field under the supervision of an experienced professional and the coordinator.
in the curriculum is "Industry Immersion" where a student will have to fit into a real office scenario and what he could contribute to the work place as Junior IT professional.

The student works in an office/agency/institution at the best with its information systems for 320 to gain practical training in one of the varied aspects of information and computer technology.

FIFTH YEAR

FIRST SEMESTER

COURSE NO: COE 511
DESCRIPTIVE TITLE: Data Communication and Networks

PREREQUISITE: COE 404
UNITS: 3
Course Description: This is the first two course devoted to the study of data communications and computer networks. The course covers the fundamentals of data communications, the issues the computer network design, and the study of how protocols facilitate the communication among the components of the network and data communication networks.

COURSE NO: COE 521
DESCRIPTIVE TITLE: Operating Systems

PREREQUISITE: COE 404
UNITS: 3
Course Description: Types of operating system goals, functions and organizations;

process, concurrent programming, CPU scheduling, virtual memory, disk and drum scheduling, synchronization, critical regions, semaphores, event queues, monitor concepts, message buffer and deadlock; processor management; memory management device: file management; resource protection and capability.

COURSE NO: COE 501
DESCRIPTIVE TITLE: Software Engineering

PREREQUISITE: 5th year standing
UNITS: 3
Course Description: Design tools and techniques; top-down design, modular design, software tools, debugging and test data; software reliability, theory and concepts, errors, faults and estimations, reliability models, availability models, management techniques, cost estimation and software maintenances.

COURSE NO: COE 561
DESCRIPTIVE TITLE: Microprocessors 1

PREREQUISITE: 5th year standing
UNITS: 4
Course Description: This course covers architecture, programming and interfacing to the microprocessors in general. Specific topics focuses on microprocessor-based computer system, introduction sets and itsuse applicable to a specific or group of microprocessors, I/O devices, Buss architecture, DMA and the MMX technology.

COURSE NO: SOCIETY
DESCRIPTIVE TITLE: Society and Culture with Family Planning
PRE REQUISITE: NONE
UNITS: 3
Course Description: The family as a structural and functional unit in social life and organization, as a unit of social control; its status, change, and associated problems.

COURSE NO: COE 541
DESCRIPTIVE TITLE: Design Projects 1
PREREQUISITE: 5th year standing
UNITS: 2
Course Description: Study of the different methods of research in preparation of making a project proposal.

FIFTH YEAR

SECOND SEMESTER

COURSE NO: COE 512
DESCRIPTIVE TITLE: Data Communication and Computer Networks 2
PREREQUISITE: COE 511
UNITS: 2/1
Course Description: This is the second of two courses devoted to the study of data communications and computer networks. The course covers more advanced and application specific concepts of data communications. It also covers the issues in computer network design as a result of the study of the upper four levels of the ISO OSI reference model, and the study of how protocols facilitate the communications among the components of the network in the same four layers.

COURSE NO: COE 542
DESCRIPTIVE TITLE: Design Project 2 PREREQUISITE: COE 541
UNITS: 1
Course Description: Design and implementation and implementation of medium off large-scale software or hardware project. The emphasis is on independent study and application. Individual or group project.

COURSE NO: COE 503
DESCRIPTIVE TITLE: Seminars and Field Trips
PREREQUISITE: 5th year standing
UNIT:1
Course Description: Topics offered at the graduate level, which are not covered in regular courses. Students participate in preparing and presenting discussion material.

COURSE NO: COE 562
DESCRIPTIVE TITLE: Microprocessors 2
PRE REQUISITE: 5TH YEAR STANDING
UNITS: 3/1
Course Description: The course extends the concepts learned in microprocessor system 1, in the area of support chips for microprocessor-based computers. Interrupt control, timing bit and parallel interfacing, direct-memory of micro electronics devices and design of integrated circuits.

COURSE NO: EM 501
DESCRIPTIVE TITLE: Engineering Management
PRE REQUISITE: EM 401, EM 302
UNITS: 3
Course Description: The course presents the functions of the Engineer; decision

making; concepts of Management namely: Planning, Organizing, Directing, and Controlling the different Management skills and functions.