



## BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING (BSIE)

### Course Description For the 2018-2019 Curriculum

#### I. TECHNICAL COURSES

##### BASIC ENGINEERING SCIENCES

##### **ENGMech: Engineering Mechanics**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: EPHYSICS/L, CALC2**

Force, moment, and motion concepts. Newton's Laws of Motion. Analysis of particles and rigid bodies in static and dynamic equilibrium using vector mechanics and energy and momentum methods. Geometric properties of lines, areas, and volumes.

##### **Learning Outline**

- Introduction to Engineering mechanics:
- Fundamental Concepts
- Resultants of force systems
- Equilibrium Free-body diagrams
- Analysis of Structures
- Friction
- Centroids and Centers of Gravity
- Moment of Inertia; Product of inertia
- Introduction to Dynamics
- Kinematics of Particle
- Dynamic of Equilibrium
- Plane Motion of Rigid Bodies: Forces and Accelerations
- Plane Motion of Rigid Bodies: Energy and Momentum Methods

##### **OCCUSAFETY: Basic Occupational Safety and Health**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 3<sup>rd</sup> year standing**

Occupational Safety and Health (OSH) concepts, principles and practices; determination of existing and potential safety and health hazards; identification of control measures; provisions of Philippine laws that refer to occupational safety and health.

##### **Learning Outline**

- Introductory Concepts
- Occupational Safety and Health Principles
- Industrial Hygiene
- Government Legislations
- Preventive and Protective Measures
- Management of OSH
- Health Promotion, Education, and Training
- Plant Visit Simulation



**TECHENTREP: Technopreneurship 101**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: ENGGECON**

Technopreneurship is a philosophy, a way of building a career or perspective in life. The course covers the value of professional and life skills in entrepreneurial thought, investment decisions, and action that students can utilize in starting technology companies or executing R&D projects in companies as they start their careers. The net result is a positive outlook towards wealth creation, high value adding, and wellness in society.

**Learning Outline**

- Driver of Economic Growth
- Innovation
- Technology Entrepreneurship
- Business Model and Business Plan
- The Innovation Process
- Clusters, Incubators and Science Parks
- Research and Development
- Selling high-technology small-firm products
- Strategy
- Finance

**II. ALLIED COURSES**

**ECONOMICS: Principle of Economics**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: None**

Introduction to economic theory and applications.

**Learning Outline**

- Ten Principles of Economics
- Thinking like an economist
- How Markets Work
- Markets and Welfare
- The Economics of the Public Sector
- Firm Behaviour and the Organization of industry
- The Data of Macroeconomics
- The Economy in the long run
- Short-run Economic Fluctuations



### **FINAC: Financial Accounting**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 2<sup>nd</sup> year standing**

Accounting concepts and principles applied to service, merchandizing and manufacturing operations; partnerships and corporations; the analysis, interpretation and use of accounting data for management.

#### **Learning Outline**

- Concepts and Principles
- Recording and Adjusting Business Transactions
- Completing the accounting cycle
- Recording Transactions in a Merchandising Concern Business
- Standards Related to Accounting for Assets Categories
- Standards Related to Accounting for Liabilities and Long Term Debt Categories
- Ownership Equity in the Three General Forms of Business
- Investment in Corporate Securities
- Financial statement analysis

### **MGRLAC: Managerial Accounting**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: FINAC**

Acquaint students with the role of the accountant in the management team in providing and assisting in the analysis, interpretation and forecasting of business organizations. It focuses on the objectives, scope, foundation, techniques of management accounting for planning and control. Students are expected to demonstrate ethical behavior and skills in preparing and analyzing accounting data as applied in a wide range of planning, control and decision making decisions.

#### **Learning Outline**

- Objectives, scope, role and direction of Management Accounting
- Management Accounting and the Business Environment
- Foundation of Management Accounting
- Functional and Activity Based Budgeting
- Cost Concepts and Applications
- Management Accounting Concepts and Techniques for Planning, Control and Decision Making
- Standard Cost and Operating Performance Measures
- Management Accounting Concepts and Techniques for Decision Making
- Capital Budgeting



## **THERMODYN: Thermodynamics**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: EPHYSICS/L, CALC2**

Thermodynamic properties of pure substances, ideal and real gases and the study and application of the laws of thermodynamics in the analysis of processes and cycles. Introduction to vapor and gas cycles.

### **Learning Outline**

- Introduction to Thermodynamics
- Basic Concepts Principles, and Definitions
- Energy Concepts
- First Law of Thermodynamics
- Pure Substances
- The Ideal Gas
- Introduction to Cycle Analysis: Second Law of Thermodynamics
- Introduction to Gas and Vapor Cycles

## **ELEMEE: Elementary Electrical Engineering**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: EPHYSICS/L**

Principles, basic laws and theorems used in analyzing electrical circuits in both direct current and alternating current conditions.

### **Learning Outline**

- Definitions, Types and Symbols of Circuit Elements, Circuit Variables and Parameters
- Resistance
- Ohm's Law, Electrical Power, Electrical Energy Heating Effect of Electric Current
- Resistors
- Network Reduction (Delta-to-Wye Transformation, Wye-to-Delta Transformation)
- Maximum Power Transfer in Direct Current Circuits
- Cells and Batteries
- Methods of Analysis
- Laws, Theorems and Methods Used in Network Analysis
- Inductors
- Capacitors
- Alternating Current Circuits
- Voltage and Current Relationships
- Effective Value of AC
- Phasor Algebra
- Conductance, Susceptance and Admittance of AC Circuits
- Power Factor Correction



**ENVISCIENG: Environmental Science and Engineering**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: CHEMENG/L**

Ecological framework of sustainable development; pollution environments: water, air, and solid; waste treatment processes, disposal, and management; government legislation, rules, and regulation related to the environment and waste management; and environmental management system.

**Learning Outline**

- Introduction to Environmental Science
- Sustainable Development Goals
- Ecosystems: Concepts and Fundamentals
- The Biogeochemical Cycles
- Analyzing Environmental Health and Pollution
- Water Pollution
- Air Pollution
- Land and Soil Pollution
- E-Waste
- Environmental Management

**III. PROFESSIONAL COURSES**

**1. Core Courses**

**IESTATS1: Statistical Analysis for Industrial Engineering 1**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: NONE**

Basic statistical concepts and principles, probability distributions of random variables and their uses, linear functions of random variables and their applications to data analysis and inference. Estimation techniques for unknown parameters; hypotheses testing, and non-parametric tests.

**Learning Outline**

- Obtaining Data
- Probability
- Discrete Probability Distributions
- Continuous Probability Distribution
- Joint Probability Distribution
- Sampling Distributions and Point Estimation of Parameters
- Statistical Intervals Test of Hypothesis for a Single Sample
- Statistical Inference of Two Samples
- Non-Parametric Tests



**IESTATS2: Statistical Analysis for Industrial Engineering 2**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: IESTATS1**

Regression, correlation, analysis of variance (ANOVA), design of experiments and their applications in Industrial Engineering.

**Learning Outline**

- Simple Linear Regression and Correlation
- Multiple Linear Regression
- Design and Analysis of Single Factor Experiments Design of Experiments with Several Factors

**INDMATPRO: Industrial Materials and Processes**

**Units: Lec: 2 Lab: 1**

**Pre-requisite: CHEMENG/L,EPHYSICS/L**

Industrial materials and processes and their effects on production system decisions. Metals, plastics, glass and ceramics, elastomers, wood, pulp, and other common engineering materials, their uses, and their production processes.

**Learning Outline**

- Introduction to Industrial Materials and Processes
- Metals
- Ceramics
- Polymers
- Composites and Nonmetals
- Economic, environmental, and societal issues in Materials

**ADVMATH-IE: Advanced Mathematics for Industrial Engineering**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: DIFFEQNS**

Matrices, determinants, systems of linear and nonlinear equations, elements of error analysis, real roots of an equation, polynomial approximation by finite difference and least squares method, and numerical solution on system of linear and nonlinear equations.

**Learning Outline**

- Introduction to Advance Math
- Linear Equations
- Matrices
- Determinants
- Solution of Linear Systems
- Solving Non-Linear Equations (Root Finding)
- Solving Systems of Non-Linear Equations
- Applications in Industrial Engineering



## **IOM: Industrial Organization and Management**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 2<sup>nd</sup> year standing**

Decision-making; the functions of management; managing production and service operations; managing the marketing function; and managing the finance function.

### **Learning Outline**

- Introduction to Management
- Decision Making
- Planning
- Organizing
- Staffing
- Communicating
- Leading
- Controlling
- Managing Product and Service Operations
- Managing the
- Marketing Function
- Managing the Financial Function
- PERT/CPM
- Project Management

## **WSM: Work Study Measurement**

**Units: Lec: 3 Lab: 1**

**Pre-requisites: INDMATPRO, IOM,  
IESTATS1**

Process charting and analysis. Work sampling. Time study. Computerized WM. PMTS: MTM, Work factor and Standard data. Wage payment and incentive plans.

### **Learning Outline**

- Productivity Measurement and Improvement
- Laboratory:
- Laboratory policies
- Methods Study
- Process Analysis
- Operation Analysis
- Micro-motion Analysis
- Principles of Motion Economy
- Work Measurement
- Time Study
- Allowances in time standards
- Predetermined motion time systems
- Work Sampling
- Workforce Management/Job Design
- Wages and Wage Incentives



### **OPSRES1: Operations Research 1**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: ADVMATH-IE**

Development and application of fundamental deterministic optimization models and various solution methods. Quantitative modelling, formulation, analysis and interpretation of linear integer and non-integer models and network flow problems.

#### **Learning Outline**

- Origin and Development of Operations Research
- Linear Programming (LP)
- Solution Approaches to LP Problems
- Duality and Sensitivity Analysis
- Integer Linear Programming (ILP)
- Special Types of LP Models: Modeling and Solution Algorithms
- Network Models

### **OPSRES2: Operations Research 2**

**Units: Lec: 3 Lab: 1**

**Pre-requisite: OPSRES1**

Concept and solution approaches of advanced optimization models and their application to engineering. Goal programming, dynamic programming, decision theory, game theory, Markov models and queuing theory.

#### **Learning Outline**

- Goal Programming Multi-Objective LP Problem
- Dynamic Programming
- Decision Theory
- Game Theory Decision-Making Under Conflict
- Queuing Theory
- Markov Theory

### **QMS: Quality Management System**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: IESTATS2, WSM**

The subject deals with natural and assignable variations, central limit theorem, process control, tools for process control, benefits of control charts, traditional control chart for variables, traditional control charts for attributes, process capability and acceptance sampling, principles and practices of quality management systems, tools and systems utilized in QMS

#### **Learning Outline**

- Overview of Quality
- Cost of Quality
- Quality Management System
- Current and Emerging Quality Management Systems, Programs, and Initiatives
- Quality Improvement Tools and Techniques
- General Problem Solving Tools
- Problem Identification Tools





- Tools for Measuring Quality
- Tools for Measurement Systems Analysis
- Lot-by-Lot Acceptance Sampling for Attributes

### **ERGONOM1: Ergonomics 1**

**Units: Lec: 3 Lab: 3**

**Pre-requisite: WSM**

The subject deals with the signal detection theory, vigilance, information processing, learning, memory, mental overload, visual and auditory displays, usability engineering, relation of cognitive limitations, to the design of effective products and interfaces.

#### **Learning Outline**

- Focus of Ergonomics
- Human Factors Engineering
- Visual Sense
- Auditory Sense
- Vestibular Sense
- Anthropometry
- Biomechanics
- Postural Analysis
- Manual Material Handling
- Workstation Design
- Environmental Factors and Their Applications

### **ERGONOM2: Ergonomics 2**

**Units: Lec: 3 Lab: 3**

**Pre-requisite: WSM**

The subject deals with the signal detection theory, vigilance, information processing, learning, memory, mental overload, visual and auditory displays, usability engineering, relation of cognitive limitations, to the design of effective products and interfaces.

#### **Learning Outline**

- Focus of Cognitive Ergonomics
- Human Information Processing Model
- Signal Detection Theory
- Absolute Judgment
- Vigilance
- Information Theory
- Memory and Learning
- Mental Workload
- Visual Displays
- Usability Theories
- Usability Evaluation



**OPSMAN: Operations Management**

**Units: Lec: 5 Lab: 1**

**Pre-requisite: OPSRES1, QMS**

Productivity, production control, inventory policy, methods improvement. Technological assessment and revenue management.

**Learning Outline**

- Introduction to Operations Management
- Demand Forecasting
- Process Design
- Capacity Planning and Inventory Control
- Scheduling and Sequencing

**IE-OJT: Industry Immersion (320 hours)**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 3<sup>rd</sup> year standing**

On-the-job training or industry internship.

**INFORMSYS: Information Systems**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: COMFUN2, 4th Year Standing**

Concepts and frameworks of information systems. Analysis and design of information systems.

**Learning Outline**

- Information Systems Concepts
- The Computer Resource
- General Systems Model of a Firm
- Types of Information systems
- E-commerce
- Business Intelligence and Analytics
- The Systems Life Cycle
- Systems Analysis and Design
- The Structured Analysis Methodology

**PFS: Project Feasibility**

**Units: Lec: 2 Lab: 1**

**Pre-requisite: MGRLAC, OPSMAN**

Phases of project feasibility studies. Project development, evaluation and management.

**Learning Outline**

- Need for a Feasibility analysis
- Project Feasibility Study
- Market Study
- Technical Study
- Management Study and Schedule
- Financial Study
- Social Profitability Study



### **SCM: Supply Chain Management**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: OPSMAN**

Basic concepts in managing the complete flow of materials in a supply chain from suppliers to customers. Design, planning, execution, monitoring, and control in supply chain management.

#### **Learning Outline**

- Understanding the Supply Chain
- Purchasing Organization in the Enterprise
- Procurement Strategies
- Greening the Supply Chain
- Inbound Logistics
- Strategic Inventory
- Physical Distribution
- Supply Chain Strategies
- Customer Relationship Management

### **SYSENGG: Systems Engineering**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4<sup>th</sup> year standing**

Total systems analysis and design. Integration of subsystems with concentration on optimal total systems implementation.

#### **Learning Outline**

- Systems Definition and Concept
- Bringing System Into Being
- Conceptual System Design
- Preliminary System Design
- Detail Design and Development
- System Test and Evaluation
- Design for Operational Feasibility
- Design for Reliability
- Design for Maintainability
- Design for Economic Feasibility
- Presentation of Project Proposals
- Engineering Process Design
- Industrial Visit
- Systems Engineering Management
- Strategic Management for Industrial Systems
- Final Presentation of Project Paper



### **IE-CAPSTONE: IE Capstone Project**

**Units: Lec: 2 Lab: 2**

**Pre-requisites: 4th Yr. Standing, OPSMAN**

Capstone project that will demonstrate the student's research or design ability. The project may be an industrial engineering research or a design of a system, component, or process.

#### **Learning Outline**

- Selection of the project site and project adviser
- Preparation of the proposal.
- Evaluation and acceptance of the project proposal
- Analysis and generation of design alternatives.
- Evaluation and selection of the preferred proposal.
- Preparation of the final project report.
- Presentation of the project.
- Assessment of the project.

### **ETHICS-IE: Industrial Engineering Ethics**

**Units: Lec: 2 Lab: 0**

**Pre-requisite: 4<sup>th</sup> year standing, 4ETHICS**

Values, works and responsibilities of an industrial engineer, relation of the industrial engineer with the state, the public, the clients, employer, engineers and other Professionals.

#### **Learning Outline**

- Filipino Values and Character
- Basic Values
- Introduction to Law, Ethics and Engineering Ethics
- Engineers Duties and Responsibilities
- Professional Ethics
- On Becoming Responsible Engineer
- Risk, Safety and Liability
- Generic Concepts
- Engineers as Employee
- Framing the problem
- Methods for Moral Problem Solving
- Organizing Principle

### **IEORIENT: Orientation to Industrial Engineering with Design-Build**

**Units: Lec: 2 Lab: 0**

**Pre-requisite: None**

A course dealing with the basic information and knowledge in the field of industrial engineering with design and build.

#### **Learning Outline**

##### **IE-ORIENT Subject Orientation**

- History and Development of Engineering Profession, College Engineering, Industrial Engineering.



- BSIE Course Policy.
- Curriculum
- Basic Career Opportunities for IEs
- Career Opportunities for IEs in other Engineering fields
- Career Opportunities for IEs in non-engineering fields
- Latest Trends and Innovations in IE
- Technical Seminars
- Technical Visits

## 2. Electives

### **CAM: Computer-Aided Manufacturing**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 3<sup>rd</sup> year standing**

Fundamental concepts in design and manufacturing automation strategies, high volume discrete parts production systems, numerical control manufacturing systems, computer-aided manufacturing (CAM), support systems of manufacturing group technology, and flexible manufacturing systems.

#### **Learning Outline**

- Manufacturing Systems and Controls
- Design Specification
- Process Engineering
- Fixed Automation and CAM Production Process
- Conversion Technologies
- Automated Materials Handling and Process Controls
- Artificial Intelligence in Manufacturing
- Computer-Aided-Process-Planning (CAPP) System Integration Technologies
- Data Communication, LAN and WAN in Manufacturing
- CAD / CAM and CIM

### **LEAN: Lean Manufacturing**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: OPSMAN**

Basic concepts and principles of Lean manufacturing and the significant matter of management's role from daily to strategic management, value mapping etc. as applies to various industries.

#### **Learning Outline**

- Introduction Concepts Lean Production and Total Quality Management
- Continuous Improvement, Waste Elimination, Customer Focused Quality
- Value Added and Waste Elimination
- Customer-Focused Quality
- Small Lot Production
- Set-Time Reduction
- Maintaining and Improving Equipment
- Pull Production Systems
- Focused Factories and Group Technology



- Workcells and Cellular Manufacturing
- Standard Work
- Quality At the Source and Mistake-Proofing
- Production Preparation Process, 3P
- Lean Production Planning Control and Supply Chains

**IPR: Intellectual Property Rights**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4th Year Standing**

The subject deals the study of different ways to protect a person's or organization's original works through the intellectual property rights.

**Learning Outline**

- Introduction to Intellectual Property
- The Law of Patents
- Utility Models
- Industrial Design
- Trade secret
- The Law of Trademark
- The Law of Copyright
- Plant Variety Protection
- Unfair competition
- Intellectual property audits

**ERP: Enterprise Resource Planning**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4th Year Standing**

This course deals on fundamentals Enterprise Systems (also commonly termed as Enterprise Resource Planning Systems, ERPs), various company case studies, selection and implementation of ERPs, and practical knowledge that would help you to address real world business problems associated with ERP usage and implementation.

**Learning Outline**

- Business Functions and Business Processes
- Development of Enterprise Resource Planning Systems
- Marketing Information Systems and the Sales Order Process
- Production and Supply Chain Management Information Systems
- Accounting in ERP Systems
- Human Resources Processes with ERP
- Process Modeling, Process Improvement, and ERP Implementation
- RFID, Business Intelligence (BI), Mobile Computing, and the Cloud



**PACKTECH: Packaging Technology**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4<sup>th</sup> year standing**

This course deals on the packaging materials, packaging machines and packaging technologies. It also includes the development of systems for designing and optimizing packaging processes such as labeling requirements, trends, designs, bar-coding, environmental packaging, efficient and cost-effective packaging

**Learning Outline**

- Perspective on Packaging
- Packaging Functions
- Graphic Designs, Customer Insighting and Branding
- Package Printing and Decorating
- Paper, Paperboard, Cardboards and Corrugated Fibers Packaging
- Metal Packaging
- Glass Packaging
- Plastic Packaging
- Flexible Packaging Laminates
- Closures
- Adhesives
- Distribution Packaging

**FACPLANLAY: Facilities Planning and Layout**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4<sup>th</sup> year standing**

The course deals with the principles and practice of the planning of facility layout and material handling equipment for manufacturing and service systems. Analytical approaches in site location, facility layout, material handling, and storage systems. Systematic procedures and computer-aided techniques.

**Learning Outline**

- Introduction to Facilities Planning & Design
  - Plant Location and Buildings
- Product, Process, and Schedule Design
- Flow Systems, Activity Relationships, and Space Requirements
- Layout Planning Models and Design Algorithms
- Facility Design for Various Facilities Functions
- Quantitative Facilities Planning Models
- Evaluating and Selecting the Facilities Plan



## **PERMGMT: PERSONNEL MANAGEMENT**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4<sup>th</sup> year standing**

This subject helps students understand human resource management practices regardless of their future position and career aspirations, for company's and personal success. The subject focuses on important HR issues and concepts and eventually applying what the students will learn to help them execute proper decision making.

### **Learning Outline**

- Managing Human Resources
- Trends in Human Resource Management
- Providing Equal Employment Opportunity and a Safe Workplace
- Analyzing Work and Designing Jobs
- Planning for and Recruiting Human Resources
- Selecting Employees and Placing Them in Jobs
- Training Employees
- Developing Employees for Future Success
- Creating and Maintaining High-Performance Organizations
- Managing Employees' Performance
- Separating and Retaining Employees
- Managing Human Resources Globally

## **RISKMAN: RISK MANAGEMENT**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4<sup>th</sup> year standing**

The subject deals with equipping the student to understand, identify risks and be able to plan,

organize, implement and control ways to mitigate risks in an organization.

### **Learning Outline**

- Approaches to risk management
- Risk assessment
- Risk response
- Risk strategy
- Risk culture
- Risk governance
- Risk assurance

## **TPM: TOTAL PRODUCTIVE MAINTENANCE AND RELIABILITY**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: 4<sup>th</sup> year standing**

A systematic approach to improving production and quality systems, total productive maintenance (TPM) involves all employees through a moderate investment in maintenance. This subject highlights the importance of effective communication on all levels to successful TPM implementation. It also discusses the role of the right set of tools from the right perspective—and demonstrates how to obtain a healthy balance of both.

### **Learning Outline**

- TQM: Evolution, Models and Frameworks





- TQM and Design
- TQM and Organization
- TQM and Purchasing and Supply Management
- Statistical Process Control
- The Six Sigma Approach
- TQM and Advanced Manufacturing Technology and Systems
- TQM and the Customer
- Toolkit for TQM
- Quality Management System
- Concurrent Implementation of QMS, EMS and OHSAS: Integrated Management System

### **COMAPPS-IE: Computer Applications in IE**

**Units: Lec: 0 Lab: 1**

**Pre-requisite: COMFUN2**

Application of computer technology in various aspects of industrial engineering systems, specifically the use of computer application software in industrial engineering and Microsoft software.

#### **Learning Outline**

- Basics of Spreadsheet
- Creating Simple and Complex Formulas
- Working with Basic functions
- What-If Analysis and Working with Large worksheets
- Creating Charts
- Creating Pivot Tables and Pivot Charts
- Excel Solver
- Database
- Planning a Database
- Basics of Microsoft Access
- Creating tables
- Creating relationships
- Creating a form
- Creating a query
- Creating a report
- Performing Calculation
- Working with Macros



## GENERAL ENGINEERING COURSES

### Course Descriptions Common to 2018-2019 Engineering Curricula

#### MATHEMATICS

##### **CALC1: Calculus 1**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: NONE**

The course provides basic concepts of calculus such as limits, continuity and differentiability of functions; differentiation of algebraic and transcendental functions involving one or more variables; applications of differential calculus to problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

##### **Learning Outline**

- Functions and Limits
- Derivative, Rate of Change and Slope
- Derivative of Algebraic Functions
- Polynomial Curves
- Applications of the Derivative
- The Differential
- Derivatives of Trigonometric Functions
- Derivatives of Inverse Trigonometric Functions
- Derivatives of Exponential and Logarithmic Functions
- Derivatives of Hyperbolic Functions
- Derivatives of Parametric Equations
- Partial Differentiation

##### **CALC2: Calculus 2**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: CALC1**

The course provides concept of integration and its application to physical problems such as evaluation of areas, volumes of revolution, force, and work; fundamental formulas and various techniques of integration applied to both single variable and multi-variable functions; tracing of functions of two variables. 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.

##### **Learning Outline**

- Integration Concepts/Formulas
- Integration Techniques
- The Definite Integrals
- Applications of Definite Integral
- Volume of Solids of Revolution



- Multiple Integrals

### **DIFFEQNS: Differential Equations**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: CALC2**

The course provides differentiation and integration in solving first order, first-degree differential equations, and linear differential equations of order  $n$ ; Laplace transforms in solving differential equations. This course is intended for all engineering students to have a firm foundation on differential equations in preparation for their degree-specific advanced mathematics courses. It covers first order differential equations,  $n$ th order linear differential equations and systems of first order linear differential equations. It also introduces the concept of Laplace Transforms in solving differential equations. The students are expected to be able to recognize different kinds of differential equations, determine the existence and uniqueness of solution, select the appropriate methods of solution and interpret the obtained solution. Students are also expected to relate differential equations to various practical engineering and scientific problems as well as employ computer technology in solving and verifying solutions.

#### **Learning Outline**

- Introduction and Definition of Differential Equations
- Solution of 1<sup>st</sup> Order Differential Equation
- Applications of 1<sup>st</sup> Order Differential Equations
- Laplace Transforms of Functions
- Heaviside Unit Step Function

### **NATURAL AND PHYSICAL SCIENCES**

#### **CHEMENG: Chemistry for Engineers**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: NONE**

This course provides students with core concepts of chemistry that are important in the practice of engineering profession. Basic concepts of matter and its classification; mass relationships in chemical reactions; properties of gases, liquids, and solids; concepts of thermochemistry; quantum theory and electronic behavior; periodic relationship of elements in the periodic table; intramolecular forces; and solutions.

#### **Learning Outline**

- Energy and Chemistry
- Electrochemistry
- Voltaic Cells
- Standard Voltages
- Nuclear Reactions
- Radioactivity
- Fuels
- The Chemistry of Engineering Materials
- Polymers
- Engineered Nanomaterials



- The Chemistry of the Environment
- Chemical Safety
- Special Topics specific to field of expertise

### **CHEMENGL: Chemistry for Engineers (Laboratory)**

**Units: Lec: 0 Lab: 1**

**Co-requisite: CHEMENG**

This course provides 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.

#### **Learning Outline**

- General Laboratory Safety
- Common laboratory Apparatus & Techniques
- Balancing Redox Chemical Reactions
- Calorimetry
- Metals and some Aspects of Corrosion
- Electrochemistry
- Heat of Combustion
- Nuclear Chemistry
- Labster Activity-Understand the processes happening in the Atomic nucleus
- Crystal Lattices and Unit Cells
- Water: Its Properties and Purification
- Determination of Dissolved Oxygen
- Cigarette Smoking and Air pollution
- Community Immersion: Care for the Environment
- Final Output Presentation

### **EPHYSICS: Physics for Engineers (Calculus-Based)**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: CALC1**

This course covers vectors; kinematics; dynamics; work, energy, and power; impulse and momentum; rotation; dynamics of rotation; elasticity; and oscillation. Fluids; thermal expansion, thermal stress; heat transfer; calorimetry; waves; electrostatics; electricity; magnetism; optics; image formation by plane and curved mirrors; and image formation by thin lenses.

#### **Learning Outline**

- Kinematics in One Dimension
- Kinematics in Two Dimensions
- Newton's Laws of Motion
- Applications of Newton's Law of Motion
- Dynamics of Uniform Circular Motion
- Torque
- Work and Energy
- Potential Energy
- Impulse and Momentum



- Fluid Mechanics
- Thermal Physics
- Waves and Sound Mechanical Waves
- Electrostatics
- Capacitors
- Electricity
- Magnetism
- Optics

**EPHYSICSL: Physics for Engineers (Calculus-Based) (Laboratory)**

**Units: Lec: 0 Lab: 1**

**Co-requisite: EPHYSICS**

This course provides a fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in the physics for engineers.

**Learning Outline**

- Measurement of lengths
- Vectors
- Uniformly accelerated motion in an inclined plane
- Projectile motion
- Friction
- Newton's second law of motion
- Torque or moment
- Work energy theorem
- Coefficient of linear expansion
- Electrical measuring instruments
- Ohm's law
- Resistors in series and parallel
- Constant voltage source
- Cell in series and parallel
- Kirchhoff's law

**EPHYSICS2: Physics 2**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: CALC1**

This course covers Thermodynamics (1st & 2nd Law, basic concepts on heat engine and refrigerators), Energy Conversion (EM Induction, magnetic flux, generators) and Semiconductor Physics.

**Learning Outline**

- Electrostatics
- Capacitors
- Electricity
- Magnetism
- Thermal physics
- EM induction: magnetic flux, generators



- Inductance: self, mutual, RL, LC
- AC: reactance, impedance, RLC, resonance
- Optics
- Image formation by plane and curved mirrors
- Image formation by thin lenses
- Atomic/ nuclear: photoelectric effect, atomic spectra, radioactive decay, plasma
- Condensed matter: semiconductor (diodes), superconductors,
- Crystals

### **EPHYSICS2L: Physics 2 (Laboratory)**

**Units: Lec: 0 Lab: 1**

**Co-requisite: EPHYSICS2**

This course provides a fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in Physics 2.

#### **Learning Outline**

- Electrical Measuring Instruments
- Capacitors in Series and Parallel
- Resistance and Resistivity
- Resistors and Cells in Series and Parallel
- Kirchhoff's Law
- Magnetic Field
- Measurement of Temperature
- Optics: Color Addition and Prism
- Reflection and Refraction
- Snell's Law
- Semiconductor PN Diode and Zener Diode Characteristics
- Capacitive and Inductive Reactance

### **BASIC ENGINEERING SCIENCES**

#### **CADRAFTING: Computer-Aided Drafting**

**Units: Lec: 0 Lab: 1**

**Pre-requisite: NONE**

This course provides concepts of computer-aided drafting (CAD); introduction to the CAD environment; terminologies; and the general operating procedures and techniques in entering and executing basic CAD commands.

#### **Learning Outline**

- Orientation
- Autocad environment
- Autocad coordinate system
- Getting started using draw commands
- Display and view commands
- Object snap tools
- Modify commands
- Layers, linetype, and lineweight
- Dimensioning



- Text command
- Introduction to 3D modeling
- Solidworks environment
- Solidworks
- Basic 3D modelling using solidworks
- Creating parts
- Creating assemblies and drawings
- Autocad: 3D modeling
- Changing visual styles
- Modify commands in 3D space
- Creating 3D models
- Creating an assembly

### **COMFUN1: Computer Programming 1**

**Units: Lec: 0 Lab: 1**

**Pre-requisite: NONE**

This course covers basic information technology concepts; fundamentals of algorithm development; high-level language and programming applications; and computer solutions of engineering problems. Topics are drawn from classes and objects, abstraction, encapsulation, data types, calling methods and passing parameters, decisions, and loops.

#### **Learning Outline**

- Orientation
- Introduction to programming
- Beginning the problem-solving process
- Variables and constants
- Completing the problem-solving process
- The selection structure
- More on the selection structure
- The repetition structure
- More on the repetition structure
- Value -returning functions
- Void functions
- Arrays
- Two-dimensional arrays
- Microsoft excel worksheet

### **COMFUN2: Computer Programming 2**

**Units: Lec: 0 Lab: 1**

**Pre-requisite: COMFUN1**

This course deals with advance information technology concepts; advance algorithm development; high-level language and programming applications; and computer solutions of engineering problems. Topics includes nested loops, arrays and importation of library files.

#### **Learning Outline**

- Orientation
- Value-returning functions



- Void functions
- One-dimensional arrays
- Two-dimensional arrays
- Strings
- Sequential access files

**ENGGECON: Engineering Economics**

**Units: Lec: 3 Lab: 0**

**Pre-requisite: NONE**

This course deals with the study of concepts of the time value of money and equivalence; basic economic study methods; decisions under certainty; decisions recognizing risk; and decisions admitting uncertainty. The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

**Learning Outline**

- Introduction
- Interest, Money -Time Relationship
- Annuities
- Depreciation
- Methods of Financing as Enterprise
- Selections in the Present Economy
- Basic Methods for Making Economy Studies
- Comparison of Alternatives
- Decisions Under Certainty
- Decision Recognizing Risk
- Decisions Admitting Uncertainty





## GENERAL EDUCATION COURSES

### Course Descriptions

#### Common to 2018-2019 Engineering Curricula

##### **7PE1: Movement Enhancement**

**Units: Lec: 2 Lab: 0**

**Pre-requisite : None**

This course reintroduces the fundamental movement patterns that consist of non-locomotor, locomotor skills, which are integrated with core training to meet the demands of functional fitness and physical activity performance. Emphasis will be on exercise regression and progression for the enhancement of fitness and the adaptation of movement competencies to independent physical activity pursuits. In conjunction with fitness and wellness concepts, exercise and healthy eating principles, periodic evaluation will be conducted of one's level of fitness and physical activity, as well as eating patterns to monitor one's progress and achievement of personal fitness and dietary goals.

##### **Learning Outline**

- Introduction to Movement, Lifestyle and Physical Activity
- Movement Competency on Specific Non – Locomotor
- Movement Competency on Specific Locomotor Activity Skill

##### **7PE2: Fitness Exercises**

**Units: Lec: 2 Lab: 0**

**Pre-requisite : None**

This course builds on the foundation of motor skills achieved through core training. It will provide experiences in a variety of exercise programs for the purpose of maintaining and enhancing cardiorespiratory and musculoskeletal fitness ( i.e. core stability, muscle strength, endurance and power). It includes speed and agility training with a focus on body coordination and balance in conjunction with fitness concepts, exercise and healthy eating principles, learners will be able to enhance their fitness through goal setting and application of the exercise principles (i.e. frequency, intensity, time, type, progression and volume), adapt their movement competencies to independent physical activity (PA) pursuits and periodically evaluate their PA and eating patterns to monitor their progress and achievement of personal fitness and dietary goals.

##### **Learning Outline**

- Fitness and Nutrition
- Exercise and Cardiorespiratory Endurance Training
- Movement Patterns , Core, Strength and Mobility Training

##### **7PE3: Philippine Games**

**Units: Lec: 2 Lab: 0**

**Pre-requisite : None**

Physical Activities toward Health and Fitness 1 is a course that provides physical activities for the purpose of optimizing health and fitness. One of the lessons offered in this course is Philippine Games. Philippine games are traditional games and activities in an indoor and outdoor setting that usually use native and improvised materials. This course provides



knowledge and information on the different traditional Filipino games including the basic ideas on physical games, team and individual games, and devised games. This provides an avenue for the students to enjoy the company of the family at home, socialize with friends and participate in different traditional and localized activities. Through skills training, exercise, drill, game, play and independent or selfdirected physical activities, fitness levels will be enhanced. In conjunction with this, fitness levels, physical activity participation and dietary/eating patterns are evaluated to monitor one's progress and achievement of personal fitness and dietary goals.

#### **Learning Outline**

- Introduction to Philippine Games
- Philippine Games and Activities
- Planning and Conducting Philippine Games

#### **9STS: Science, Technology, and Society**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

The course deals with interactions between science and technology and social, cultural, political, and economic contexts that shape and are shaped by them. This interdisciplinary course engages students to confront the realities brought about by science and technology in society. Such realities pervade the personal, the public, and the global aspects of our living and are integral to human development. Scientific knowledge and technological development happen in the context of society with all its socio-political, cultural, economic, and philosophical underpinnings at play. This course seeks to instill reflective knowledge in the students that they are able to live the good life and display ethical decision making in the face of scientific and technological advancement. This course includes mandatory topics on climate change and environmental awareness.

#### **Learning Outline**

- Historical antecedents in which social considerations changed the course of science and technology
- In the World: Ancient, Middle and Modern Ages In the Philippines
- Intellectual revolutions that defined society
- Science and technology and nation building The Philippine government S&T agenda
- The human person flourishing in terms of science and technology
- Biodiversity and the Healthy Society
- Climate Change and the Energy Crisis
- Culminating Activity a

#### **4ETHICS: : ETHICS**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

Ethics deals with principles of ethical behavior in modern society at the level of the person, society, and in interaction with the environment and other shared resources. Morality pertains to the standards of right and wrong that an individual originally picks up from the community. The course discusses the context and principles of ethical behavior in modern society at the level of individual, society, and in interaction with the environment and other shared resources. The course also teaches students to make moral decisions by using



dominant moral frameworks and by applying a seven-step moral reasoning model to analyze and solve moral dilemmas. The course is organized according to the three (3) main elements of the moral experience: (a) agent, including context - cultural, communal, and environmental; (b) the act; and (c) reason or framework (for the act).

#### **Learning Outline**

- Difference between moral and non-moral standards
- Culture and its role in moral behavior
- Cultural Relativism
- The Filipino Way
- Stages of Moral Development
- Feelings and moral - decision making
- Reason and Impartiality as requirements for ethics
- Moral Theories as frames of moral experiences
- Virtue ethics
- Kant's Ethical Theory
- Kinds of rights
- Mill's Utilitarianism
- Justice and Fairness
- The state and citizens: responsibilities to each other: The principles of taxation and inclusive growth
- Globalization and its ethical challenges

#### **4FYE1: Big History**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

Big History is an interdisciplinary course that deals with the students' journey through time and space with the Catholic intellectual tradition as an integral component of the course. It describes Big History in the context of God's continuing work of creation. It discusses the first moments of the universe and the formation of stars and planets; the early life on earth and the development of human civilization and consciousness. Included in the course is the rise of humankind until the peering over the threshold of the present and into future.

#### **Learning Outline**

- Introduction to Big History
- Origin stories of different civilizations or cultures
- The Big Bang Theory
- New Chemical Elements
- Earth and the Solar System
- Life on Earth
- Early Humans: Collective Learning



## **4FYE2: Big History 2**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : 4FYE1**

Through the Lens of Big History is an interdisciplinary course that explores the theories, concepts and approaches of various disciplines through the lens of Big History. Students grasp an appreciation of the disciplines utilizing Big History as a framework.

### **Learning Outline**

- The Universe: Its Intricate and Aesthetic Value
- Agriculture and Globalization: An Interplay
- Modern Revolution
- Philosophy of Design and Technology: Redesigning Humankind
- Education and Communication
- The Future and the Future Angelite
- Positive Psychology and relationships
- Spirituality and the Social Teachings of the Church

## **4READPHILHIS: Readings in Philippine History**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

The course analyzes Philippine History from multiple perspectives through the lens of selected primary sources coming from various disciplines and of different genres. Students are given opportunities to analyze the author's background and main arguments, compare different points of view, identify biases and examine the evidences presented in the document. The discussions will tackle traditional topics in history and other interdisciplinary themes that will deepen and broaden their understanding of Philippine political, economic, cultural, social, scientific and religious history. Priority is given to primary materials that could help students develop their analytical and communication skills. The end goal is to develop the historical and critical consciousness of the students so that they will become versatile, articulate, broad-minded, morally upright and responsible citizens.

### **Learning Outline**

- Meaning and relevance of history
- Content and Contextual analysis of selected primary sources; identification of historical importance of the text; and examination of the author's main argument and point of view.
- One past, many Histories controversies and conflicting views in Philippine history
- Cry of Revolution
- Tejeros Convention
- Independence Documents
- Speeches of Philippine Presidents in United States
- Political, Cultural and Socio-economic issues in Philippine History



#### **4RIZAL: : LIFE & WORKS OF RIZAL**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

As mandated by Republic Act 1425, this course covers the life and works of the country's national hero, Jose Rizal. Among the topics covered are Rizal's biography and his writing, particularly the novels *Noli Me Tangere* and *El Filibusterismo*, some of his essays, and various correspondences

##### **Learning Outline**

- R.A.1425 and Rizal's life J
- OSE RIZAL AND THE PHILIPPINE NATIONALISM: The Nature and Theories of Nationalism
- JOSE RIZAL AND THE PHILIPPINE NATION: The Nation and Nation Building Rizal's Concept of the Filipino Nation
- Rizal in the context of his times
- Agrarian Disputes and Friar Lands Cavite Mutiny
- Rizal and the Propaganda Movement
- *Noli Me Tangere*
- *El Felibusterismo*
- The Indolence of the Filipino People
- Rizal's Trial and Martyrdom
- The Retraction

#### **4UNDERSELF: Understanding the Self**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

This course is intended to facilitate the exploration of the issues and concerns regarding self and identity to arrive at a better understanding of one's self. It strives to meet this goal by stressing the integration of the personal with the academic—contextualizing matters discussed in the classroom and in the everyday experiences of students—making for better learning, generating a new appreciation for the learning process, and developing a more critical and reflective attitude while enabling them to manage and improve their selves to attain a better quality of life.

##### **Learning Outline**

- Becoming a Better Student
- Setting Goals for Success
- Taking Charge of One's Health
- Philosophical Perspective of the Self
- The Self from the Sociological and Anthropological Perspective
- The Self from the Psychological Perspective
- The Self in Western and Eastern Thoughts
- Physical, Material, and Digital Aspect of Self
- Sexual Aspect of Self
- Spiritual Aspect of Self
- Political Aspect of Self



### **ARTAPP: Art Appreciation**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

Art Appreciation is a three-unit course that develops students' ability to appreciate, analyze, and critique works of art. Through interdisciplinary and multimodal approaches, this course equips students with a broad knowledge of the practical, historical, philosophical, and social relevance of the arts in order to hone students' ability to articulate their understanding of the arts. The course also develops students' competency in researching and curating art as well as conceptualizing, mounting, and evaluating art productions. The course aims to develop students' genuine appreciation for Philippine arts by providing them opportunities to explore the diversity and richness and their rootedness in Filipino culture.

#### **Learning Outline**

- Introduction to Art Appreciation
- Art Through the Ages
- Living with Art

### **1LIT12: Great Books**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

The course explores and studies the great ideas contained in the original works by the greatest literary writer, chronologically, beginning with the works of the Ancient Greeks, which are seminal to classical and Western civilization. It also equips students with the timeless insights of contemporary writers, insights that are at the heart of liberal education. The students will enhance their communication skills by reading, appreciating and critiquing literary works. Moreover, they will understand deeper human behavior by delving into the psyche of writers and characters.

#### **Learning Outline**

- Introduction to Literary Criticism
- The Two Brothers by Leo Tolstoy
- Telephone Conversation by Wole Soyinka
- I Am A Filipino by Carlos P. Romulo
- Aesop's Fables
- Antigone by Sophocles
- He Is More Than A Hero by Sappho
- Shakespeare's Sister by Virginia Woolf
- The Masque of Red Death by Edgar Allan Poe
- There is Another Sky by Emily Dickinson
- If You Forget Me by Pablo Neruda

### **Purcomm: Purposive Communication**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

The five skills of communication (listening, speaking, reading, writing and viewing) are studied and simulated in advanced academic settings. The purpose of these combined



activities is to enable students to practice strategies of communication with a clear purpose and audience in mind, guided by the criteria of effective communication and the appropriate language.

#### **Learning Outline**

- Communication: Revisiting Its Domains; Exploring Its New Realms
- Theories, Principles, and Levels of Communication
- Ethics in Communication
- Purposive Engagements in Written Communication
- Language Strategies in Writing
- Communication for Employment Purposes
- Meaningful Experiences in Oral Communication
- Communication in the Technological Era

#### **4CONWORLD: Contemporary World**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

This course introduces students to the contemporary world by examining the multifaceted phenomenon of globalization. Using the various disciplines of the social sciences, it examines the economic, social, political, technological, and other transformations that have created an increasing awareness of the interconnectedness of peoples and places around the globe. To this end, the course provides an overview of the various debates in global governance, development, and sustainability. Beyond exposing the student to the world outside the Philippines, it seeks to inculcate a sense of global citizenship and global ethical responsibility. This course also incorporates required topics on population education in the context of analyzing global population and demography.

#### **Learning Outline**

- The Structures of Globalization
- A History of Global Politics: Creating an International Order
- The United Nations and Contemporary Global Governance
- A World of Regions
- The Globalization of Religion
- Media and Globalization
- The Global City
- Global Demography
- Global Migration
- Environmental Crisis and Sustainable Development
- A Holistic Understanding of Peace and Violence
- Global Citizenship and the Global Filipino

#### **2MATHMWORLD: Mathematics in the Modern World**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

This is a course that deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions, and application of mathematical tools in daily life.

#### **Learning Outline**

- Mathematics in our World



- Mathematics Language and Symbols
- Problem Solving and Reasoning
- Data Management
- Mathematics of Graphs

### **Theology 101: Theological Foundations**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

This foundational course in theology is designed to equip the students with the basic knowledge in the study of Judeo-Christian Tradition and Sacred Scriptures based on the Second Vatican Council which are fundamental foundations in Catholic Faith. The subject is geared towards a deeper understanding and appreciation of Catholic Faith that is socially and contemporarily relevant.

#### **Learning Outline**

- My Second Home: HAU and My Faith
- What is Theology and Doing Theology?
- Falling and Staying in Love: An Imagery for our Experience of God
- Faith and Revelation
- The Foundation of Faith: *Pagpapadama ng Diyos ng Kanyang kagandahang-loob* as Revelation
- Witnessing Faith

### **Theology 102: Theological Foundations: Judeo-Christian Tradition and Sacred Scriptures**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

In discerning the Signs of the Times, the course is designed to address special issues that confront college students today in relation to their faith as Christians. It explores variety of moral issues that impact the individual, the family, and the community. The course enables the students to clarify their values and eventually pursue objective moral values amidst the issues that they meet head-on.

#### **Learning Outline**

- PUSPOS NA KAGANDAHANG-LOOB NG DIOS: The Standard of Morality
- KAGANDAHANG LOOB SA KAPWA: Our Invitation to be Authentic Human
- DISCERNING KAGANDAHANG-LOOB NG DIOS THROUGH THE SIGNS OF TIMES

### **Theology 103: Special Issues in Catholic Theology**

**Units: Lec: 3 Lab: 0**

**Pre-requisite : None**

The course is designed for a better understanding and integration of spirituality in the ongoing formation of HAU students. Christian spirituality, focused on the life and teachings of Jesus Christ as the model and lens for theological reflection, will be scrutinized. With Jesus Christ as their model, the students are led to a deeper reflection of the relevance of their personal spiritual journey in the context and challenges of the





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contemporary times. The course will underscore the HAU institutional Core Values and the Angelite Charisms as they discern to live a socially relevant Christian spirituality.

**Learning Outline**

- Theme: Ugnayan sa Diyos: Christian Spirituality is a journey towards the fullness of life with God
  - Theme: Ugnayan sa Kapwa: Christian towards a Distinct Spirituality
  - Theme: Ugnayan sa Diyos at sa kapwa: Avenues to live one's vocation to holiness
-