

COLLEGE OF COMPUTER STUDIES

COURSE CATALOG

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

General Education

GEC 1- Understanding the Self

Nature of identity; factors and forces that affect the development and maintenance of personal identity.

Course Credit : 3 units

Prerequisite : None

GEC 2 - Readings in the Philippine History

Philippine History viewed from the lens of selected primary sources in different periods with local history added, analysis and interpretation.

Course Credit : 3 units

Prerequisite : None

GEC 3 – The Contemporary World

Globalization and its impact on individuals, communities and nations: challenges and responses.

Course Credit : 3 units

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.

Course Credit : 3 units

Prerequisite : None

GEC 5 – Purposive Communication

Writing, speaking and presenting to different audiences and for various purposes.

Course Credit : 3 units

Prerequisite : None

GEC 6 – Art Appreciation

Nature, function and appreciation of the arts in contemporary society.

Course Credit : 3 units

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.

Course Credit : 3 units

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.

Course Credit : 3 units

Prerequisite : None

GEC 9 – Life and Works of Rizal

The study of the life of Rizal and his literary works.

Course Credit : 3 units

Prerequisite : None

GEC 10 – History of Muslim Filipinos and of the Indigenous Peoples of Mindanao

A historical overview of Muslim Filipinos and of the Indigenous Peoples of Mindanao, the Sulu Archipelago, Palawan since pre-colonial times to the present; of how they fought against the forces of foreign and local domination which threaten their very existence; of the significance of this study within the broad context of Philippine History.

Course Credit : 3 units

Prerequisite : None

GEC 11 – Language, Gender, and Society

This course examines the meaning of gender in the contemporary world and the relationship of language use, gender, and society. It aims to explore the use of language and the cultural views of men, women, lesbian (LGBT) from the cross-cultural and sociolinguistic perspective. It gives emphasis to the different types of gender and possible causes of these differences by using various theories on ideologies, feminism, and queer.

Course Credit : 3 units

Prerequisite : None

GEC 12 – Ecocriticism and the Conservation of Nature

This course is anchored on the interconnection between ecology and literature which discusses on the importance of nature, environment, and man's notion of wilderness (desert, forestry, boondocks, and the wild) and the frontier in different seasons and places in the Philippines.

Course Credit : 3 units

Prerequisite : None

Additional Math Requirement

MATH 101 – Calculus I

This course is an introduction to calculus with analytic geometry. It covers lines, circles, conic sections, special functions, limits, continuity, derivatives and their applications, differentials, antiderivatives, definite integral and their applications.

Course Credits : 5 units

Pre-Requisite : None

MATH 102 – Calculus II

This course covers techniques of integration, improper integrals, sequences and series of constant terms, power series, differential calculus of functions of two or more variables, and double integrals.

Course Credits : 5 units

Pre-Requisite : MATH 101 – Calculus I

Common Courses

CC 101 - Introduction to Computing

This course provides an overview of the Computing Industry and Computing profession, including Research and Applications in different fields; an Appreciation of Computing in different fields such as Biology, Sociology, Environment and Gaming; an Understanding of ACM Requirements; an Appreciation of the history of computing; and Knowledge of the Key Components of Computer Systems (Organization and Architecture), Malware, Computer Security, Internet and Internet protocols, HTML4/5 and CSS.

Course Credits : 3 units

Pre-Requisite : None

CC 102 – Fundamentals of Programming

The course covers the use of general purpose programming language to solve problems. The emphasis is to train students to design, implement, test, and debug programs intended to solve computing problems using fundamental programming constructs.

Course Credits : 3 units

Pre-Requisite : None

CC 103 – Intermediate Programming

This course is a continuation of CC101 – Introduction to Computing. The emphasis is to train students to design, implement, test, and debug programs intended to solve computing problems using basic data structures and standard libraries.

Course Credits : 3 units

Pre-Requisite : CC102 – Fundamentals of Programming

CC 104 – Data Structures and Algorithms

The course covers the standard data representation and algorithms to solve computing problems efficiently (with respect to space requirements and time complexity of algorithm). This covers the following Stacks, Queues, Trees, Graphs, Maps, and Sets. Thorough discussion of sorting and searching algorithms and hashing is covered.

Course Credits : 3 units

Pre-Requisite : CC103 – Intermediate Programming

CC 105 – Information Management

This course covers information management, database design, data modeling, SQL, and implementation using relational database system.

Course Credits : 3 units

Pre-Requisite : Co-Requisite CC 104 – Data Structures and Algorithms

CC 106 – Applications Development and Emerging Technologies

Development of applications using web, mobile, and emerging technologies with emphasis on requirements management, interface design, usability, testing, deployment, including ethical and legal considerations

Course Credits : 3 units

Pre-Requisite : IM 101 – Fundamentals of Database Systems

Professional Courses

DS 101 - Discrete Structure

This course introduces the foundations of discrete mathematics as they apply to computer science. Topics include functions, relations and sets, basic logic, proof techniques, basics of counting and introduction to digital logic and digital systems.

Course Credits : 3 units

Pre-Requisite : None

HCI 101 – Introduction to Human Computer Interaction

The course is intends to introduce students to the discipline concerned with the design, evaluation & implementation of various computing systems intended for human use. Emphasis will be placed on understanding human behavior with interactive objects, knowing how to develop and evaluate interactive software using a human-centered approach, and general knowledge of HCI design issues with multiple types of interactive applications.

Course Credits : 3 units

Prerequisite : CC 102 – Fundamentals of Programming

MS 101 - Quantitative Methods

This course introduces the basic concepts of data analysis and statistical computing, both increasingly. The emphasis is on the practical application of quantitative reasoning, visualization, and data analysis. The goal is to provide students pragmatic tools for assessing statistical claims and conducting their own basic statistical analyses. Topics covered include basic descriptive measures, measures of association, sampling and sample size estimation, and simple linear regression.

Course Credits : 3 units

Prerequisite : DS 101 – Discrete Structure

IPT 101 - Integrative Programming and Technologies 1

The course content is based on open source software such as PHP or closed source software such Active Server Pages (ASP). The software to use will depend on the lecturer giving the course. Active Server Pages (ASP) as a server-side scripting architecture for building dynamic web applications, and an ideal environment for building web- based commerce solutions.

Course Credits : 3 units

Pre-Requisite : 2nd Yr. Standing

IM 101 - Fundamentals of Database System

The course will introduce the basics of database systems. In addition to the traditional relational database systems, it will also introduce briefly the new paradigm of NoSQL databases used in big data systems. The topics will cover all important aspects including normalization, query processing and transactions.

Course Credits : 3 units

Pre-Requisite : 2nd Yr. Standing

SDF 101 - Object Oriented Programming

This course provides the students with the fundamental understanding of object-oriented programming using Java. It introduces the different concepts that are commonly associated with object programming.

Course Credits : 3 units

Pre-Requisite : CC 103 – Intermediate Programming

PF 102 – Event Driven Programming

This is a course in event-driven programming building on prior programming experience. Topics include algorithm development, structured design, object-oriented, event-driven programming and file processing. The course covers topics in control arrays, exception handling, and the use of properties, controls, and multiple forms. Introduces database manipulation and database controls, including use of dynamic link libraries (DLLs); dynamic data exchanges (DDEs); object linking and embedding (OLEs), and programming applications to display, edit, and update databases by use of the data access object (ADO) and Language Integrated Query (LINQ). This course uses Microsoft Visual Basic programming language to teach object-oriented, event-driven programming.

Course Credits : 3 units

Pre-Requisite : CC 104 – Data Structures & Algorithms

NET 101 – Fundamentals of Networking

This course provides an in-depth knowledge of data communications and networking requirements including networking and telecommunications technologies, hardware, and software. Emphasis is upon the analysis and design of networking applications in organizations. Management of telecommunications networks, cost-benefit analysis, and evaluation of connectivity options are covered. Students learn to evaluate, select, and implement different communication options within an organization.

Course Credits : 3 units

Pre-Requisite : 2nd Yr. Standing

IM 102 – Advance Database Systems

This course builds on the introductory module in databases. It intends to introduce more advanced topics in databases such as data mining and data warehousing, distributed databases and client server architecture after introducing the DBMS implementation.

Course Credits : 3 units

Pre-Requisite : CC 105 – Information Management

SIA 101 – Fundamentals of System Integration and Architecture

This course studies the process of integrating different systems and software applications by examining current and emerging trends, strategies, and techniques for developing systems integration solutions effectively. Example topics covered include, but are not limited to: documenting integration requirements using business process models, designing integration solutions reusing patterns, and implementing integration solutions using service oriented architecture. Students will extend course topics via library assignments, programming assignments, tool evaluation assignments, and other assigned activities.

Course Credits : 3 units

Pre-Requisite : IPT 101 – Integrative Programming & Technologies 1

NET 102 – Advance Networking

This course will equip the students on working with the technologies, services, and tools industry utilizes to manage and troubleshoot networks.

Course Credits : 3 units

Pre-Requisite : NET 101 – Fundamentals of Networking

SP 101 – Social and Professional Issues 1

This course studies the social impact, implication and effects of computers and the responsibilities of computer professionals in directing the emerging technology. Specific topics include an overview of the history of computing computer applications and their impact to computing profession, the legal and ethical responsibilities of professionals and career in computing.

Course Credits : 3 units

Pre-Requisite : 3rd Yr. Standing

IAS 101 – Information Insurance & Security 1

This course provide students with a basic and comprehensive understanding of the problems of information assurance (IA) and possible solutions to the problems, especially the security of information on computers and networks. This course will focus on the IA technology as well as IA policy management, legal and ethical issue

Course Credits : 3 units

Prerequisite : SIA 101 – Fundamentals of System Integration and Architecture

FBA 101 – Fundamentals of Business Analytics

This course stresses the factors that impact the performance of business decision makers and the data management and analysis methods that have value to them. This course includes lectures, presentations, and demonstrations that emphasize discussion and illustration of methods, as well as hands-on, practical exercises that provide both a sound base of learning and an opportunity to test and develop skill.

Course Credits : 3 units

Pre-Requisite : CC 101 – Introduction to Computing

SP 102 – Social and Professional Issues 2

This course studies explores the major ethical, professional, and social issues arising from the widespread use of IT, highlighting dilemma that may be faced by IT practitioners.

Course Credits : 3 units

Prerequisite : SP 101- Social and Professional Issues 1

WS 101 – Web Systems & Technologies 1

This course covers web technologies, information architecture, digital media, web development, vulnerabilities, social software and other topics. This course is an in-depth study of the Internet and World Wide Web. It covers web technologies, information architecture, digital media, web development, vulnerabilities, social software, HTML/XHTML, Cascading Style Sheets, and JavaScript code. Extensive laboratory exercises are expected. Students will also complete their own projects.

Course Credits : 3 units

Prerequisite : IM 101 – Fundamentals of Database Systems

IAS 102 – Information Insurance & Security 2

This course include information systems security models, software security and system lifestyle management, policy development, personnel responsibilities, contingency planning, physical security, administrative controls, and information security assessment methods.

Credit : 3 units

Prerequisite : IAS 101 – Information Assurance and Security 1

EDM 101 – Fundamentals of Enterprise Data Management

This course is designed to introduce students to the fundamentals of database management systems, enterprise data management using data warehouse, which can be used for further data mining, reporting and data analysis purposes. It describes various activities involved in data mining task like data anomaly detection, data association rule learning, data clustering, data classification, data regression, and data summarization.

Credit : 3 units

Prerequisite : CC 101 – Introduction to Computing

CAP 101 - Capstone Project 1

This course orients the student to a structured approach in developing applied research in the field of information technology and computer science. Putting theories learned into practice, students will write and defend their undergraduate thesis proposal to a panel of faculty members. Through the course, various concepts, tools and techniques in research methodology are introduced to the students.

Course Credits : 3 units

Pre-Requisite : 3rd Yr. Standing

CAP 102 - Capstone Project 2

A continuation to CAP 101, it is in this course where students will implement and test output of their project.

Course Credits : 3 units

Prerequisite : CAP 101 – Capstone Project 1

SA 101 - System Administration and Maintenance

This course focuses on administration of operating systems in a client-server technology (Windows and Linux on virtual machine), installation and maintenance. It prepares students to installation of Windows Server, NTFS file system and folder permissions, Domain Name System, Active Directory, local and domain Group Policy, Windows Terminal Services, Internet Security and Acceleration Server, Internet Information Services, communications and networking.

Course Credits : 3 units

Pre-Requisite : IAS 102 – Information Assurance & Security 2

FAM 101 – Fundamentals of Analytics Modeling

An introduction to important and commonly used models in Analytics, as well as aspects of the modeling process.

Course Credits : 3 units

Pre-Requisite : FBA 101 – Fundamentals of Business Analytics
EDM 101 – Fundamentals of Enterprise Data
Management

PRAC 101 – Practicum (486 hrs)

This course is an immersion program wherein the students will have the chance and opportunity to be with the IT industry.

Course Credits : 9 units

Prerequisite : Completed all Professional Courses

SEMTOUR – Seminars and Tour

Topics offered at the graduate level which is not covered in regular courses. Students participate in preparing and presenting discussion material and expected to play a major role in planning and carrying out activities to meet the course objectives.

Credit : 3 units

Prerequisite : 4th Yr. Standing

PE

PE 1 – Physical Activities Toward Health and Fitness 1 (PATH-FIT 1):

Movement Competency Training

The course introduces the fundamental movement patterns that consist of non-locomotor and locomotor skills, which are integrated with core training (stability, strength and power) to meet the demands of activities of daily living and sports performance. The training shall be in conjunction with fitness concepts, exercise and healthy eating principles. Emphasis will be on exercise progression and regression for the enhancement of fitness; adaptation of movement competencies to independent physical activity pursuits and the periodic evaluation of PA and eating patterns to monitor one's progress and achievement of personal fitness and dietary goals.

Course Credit : 2 units

Prerequisite : None

PE 2 – Physical Activities Toward Health and Fitness 2 (PATH-FIT 2):

Fitness Training

The course builds on the Movement Competency Training course which focused on the fundamental movement patterns and core training. Based on the primary movement (squat, hinge, lunge, vertical push and pull, horizontal push and pull), fitness training starts with body weight training to improve balance, coordination, endurance and flexibility, then progresses to training for core strength and power, with or without resistance training equipment. Emphasis is on exercise progression and regression for the enhancement of skill-related fitness components in preparation for and/or in conjunction with vigorous physical activities, such as sports participation.

Course Credit : 2 units

Prerequisite : PE 1 – Physical Activities Toward Health and Fitness 1
(PATH-FIT1): Movement Competency Training

PE 3 – Physical Activities Toward Health and Fitness 3 (PATH-FIT 3):

Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor and 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 ex. 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

Prerequisite : PE 2 – Physical Activities Toward Health and Fitness 2
(PATH-FIT 2): Fitness Training

PE 4 – Physical Activities Toward Health and Fitness 4 (FATH-FIT 4):

Menu of Dance, Sports, Group Exercise, Outdoor and Adventure Activities

The 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 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.

Course Credit : 2 units

Prerequisite : PE 3 – Physical Activities Toward Health and Fitness 3
(PATH-FIT 3): Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor and Adventure Activities

NSTP

NSTP 1 – ROTC/CWTS/LTS

Course Credit : 3 units

Prerequisite : None

NSTP 2 – ROTC/CWTS/LTS

Course Credit : 3 units

Prerequisite : NSTP 1