



BUENAVISTA COMMUNITY COLLEGE

"Your Future Is Our Commitment"

Cangawa, Buenavista, Bohol

COURSE PROGRAM:	Bachelor of Science of Information Technology
COURSE NUMBER:	OOP101
COURSE TITLE:	Object-Oriented Programming 1
COURSE UNITS:	3
PRE-REQUISITES	2 nd Year

Vision

Buenavista Community College provides a supportive and transformational learning environment and excellent, flexible and accessible educational programs that will develop an educated population and globally competitive workforce.

Mission

Buenavista Community College provides affordable access to quality education and offers a dynamic, diverse and supportive environment that prepares students for academic professional and personal success to meet the demands of our changing global society.

Goals

- Provides an environment that cultivates students' learning and success through ongoing assessment of learning outcomes and overall institutional effectiveness.
- Provides students with opportunities including programs and services that enable success in academic, career, personal and civic pursuits.
- Periodically updates the college's Master Plan, including new buildings and facilities to meet the needs of the time in order to build a more cohesive physical campus that is consistent with BCC's programmatic needs.
- Promotes a climate of collaboration and equity among all college constituencies.
- Maintains a pool of competent, committed, dedicated, well-trained and qualified faculty to deliver quality instruction.
- Links with TESDA, other colleges and universities, reputable companies, firms and establishments, non-governmental agencies.

IILO (INSTITUTIONAL INTENDED LEARNING OUTCOME)			
Institutional Graduate Attributes		Graduate Outcomes	Core Values
Community Service Oriented	IO1	Sensitive to the needs of the community by participating actively in community activities.	SELFLESS UNDERSTANDING NATIONALISTIC
	IO2	Acts as a model in shaping and influencing others' lives to become civic and socially responsible members of the community.	
	IO3	Initiates, implements and evaluates relevant activities that will respond to the needs of the community.	
	IO4	Shows a strong sense of national awareness by espousing environmental and cultural preservation.	
Humane and Value-laden individuals	IO5	Respects equality of opportunities regardless of gender preference.	UNDERSTANDING VERSATILE BENEVOLENT VERSATILE
	IO6	Behaves ethically and responsibly in social, professional, and work environments in the light of personal faith.	
	IO7	Shows love, honesty, integrity, discipline, righteousness, self-worth in interaction with other members of the society.	
	IO8	Demonstrates professionalism in all endeavors.	
Highly Competent Professional	IO9	Performs competently and proficiently according to the standards of the profession and face challenges with ease and confidence.	EFFECTIVE INDUSTRIOUS EFFECTIVE VERSATILE ALTRUISTIC
	IO10	Designs, implements, and evaluates new information pertinent to future professional practice and in day to day life with inventiveness, insight, originality and openness.	
	IO11	Innovates techniques in solving problems critically.	
	IO12	Generates ideas and concepts that would lead to societal and humanistic transformations grounded on research culture.	
	IO13	Empowers others to acquire leadership skills to create a positive environment in the workplace.	
Effective Communicator	IO14	Promotes greater change of one's self reflected unto others through the acquired macro skills of listening, speaking, reading and writing.	ADAPTABLE EFFECTIVE EFFECTIVE BENEVOLENT
	IO15	Utilizes language effectively, meaningfully and responsibly in acquiring and delivering the information to the society.	
	IO16	Communicates competently and effectively both oral and written in a wide range of social, professional, and work contexts.	
Adaptive life-long-learner	IO17	Builds smooth relationships in any environmental context by deepening connections to others.	ADAPTABLE ALTRUISTIC TRUSTWORTHY
	IO18	Sustains inquisitiveness in searching for life- long learning.	
	IO19	Serves as an agent of continuous change in coping and living up to the societal demands.	
	IO20	Pursues the quest for knowledge for the improvement of the quality of life in the next generation.	

PILO (PROGRAM INTENDED LEARNING OUTCOME)	
IT01	Apply knowledge of computing, science, and mathematics appropriate to the discipline.
IT02	Understand best practices and standards and their applications.
IT03	Analyze complex problems, and identify and define the computing requirements appropriate to its solution.
IT04	Identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems.
IT05	Design, implement, and evaluate computer-based systems, processes, components, or programs to meet desired needs and requirements under various constraints.
IT06	Integrate IT-based solutions into the user environment effectively.
IT07	Apply knowledge through the use of current techniques, skills, tools and practices necessary for the IT profession.
IT08	Function effectively as a member or leader of a development team recognizing the different roles within a team to accomplish a common goal.
IT09	Assist in the creation of an effective IT project plan.
IT10	Communicate effectively with the computing community and with society at large about complex computing activities through logical writing, presentations, and clear instructions.
IT11	Analyze the local and global impact of computing information technology on individuals, organizations, and society.
IT12	Understand professional, ethical, legal, security and social issues and responsibilities in the utilization of information technology.
IT13	Recognize the need for and engage in planning self-learning and improving performance as a foundation for continuing professional development.

CILO (COURSE INTENDED LEARNING OUTCOME)	
CILO01 – Design, implement, test and debug programs using OOP concepts like abstraction, encapsulation and polymorphism.	

INSTITUTIONAL INTENDED LEARNING OUTCOME	PROGRAM INTENDED LEARNING OUTCOME	COURSE INTENDED LEARNING OUTCOME
IO9 – Performs competently and proficiently according to the standards of the profession and face challenges with ease and confidence.	IT01 – Apply knowledge of computing, science, and mathematics appropriate to the discipline. IT02 – Understand best practices and standards and their applications. IT07 – Apply knowledge through the use of current techniques, skills, tools and practices necessary for the IT profession.	CILO01 – Design, implement, test and debug programs using OOP concepts like abstraction, encapsulation and polymorphism.
IO11 – Innovates techniques in solving problems critically.	IT03 – Analyze complex problems, and identify and define the computing requirements appropriate to its solution. IT04 – Identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems. IT06 – Integrate IT-based solutions into the user environment effectively.	
IO10 – Designs, implements, and evaluates new information pertinent to future professional practice and in day to day life with inventiveness, insight, originality and openness.	IT05 – Design, implement, and evaluate computer-based systems, processes, components, or programs to meet desired needs and requirements under various constraints.	

COURSE DESCRIPTION
Introduction to object-oriented programming emphasizes the fundamental concepts of classes and objects and introduces other important OOP concepts such as abstraction, encapsulation and polymorphism. The Java programming language is used as the teaching vehicle for this course.

COURSE CONTENT

- 1. Object-Oriented Design**
 - Class
 - Object
 - Attribute/Instance Variable
 - Method
- 2. Encapsulation And Information Hiding**
 - Separation Of Behavior Implementation
 - Accessing Object Members
 - Packages
- 3. Classes And Subclasses**
 - Class Hierarchy
 - Deriving Sub-Class
 - Super Class
 - Constructor Calling Chain
- 4. Inheritance (Overriding, Dynamic Dispatch)**
 - What Is And Why Inheritance?
 - Overriding Methods
 - Hiding Methods
 - Hiding Fields
 - Type Casting
 - Polymorphism
 - Final Class And Final Methods
- 5. Abstract Classes And Java Interfaces**
 - Abstract Classes
 - Abstract Method
 - Interfaces (Defining And Implementing)
 - Multiple Interfaces
 - Inheritance Among Interfaces
 - Interface And Polymorphism

ILO CODE	PILO CODE	CILO CODE	TIME FRAME	COMPETENCIES	LEARNING CONTENT	OUTCOME (product/performance)	TEACHING LEARNING ACTIVITIES (TLA)	MODALITY	ASSESSMENTS	RESOURCE/MATERIALS
IO9 IO10 IO11	IT02 IT04 IT05	CILO01	Week 1, 2 and 3	<p>Analyze the basic building blocks of classes and identify the importance of these building blocks with respect to the entire class definition.</p> <p>Design and develop a program that implements classes and objects that model real world object.</p> <p>Decide what relevant properties of real world object to include in the model.</p>	<p>Object-Oriented Design</p> <p>Class</p> <p>Object</p> <p>Attribute/Instance Variable</p> <p>Method</p>	<p>Analyzed the basic building blocks of classes and identified the importance of these building blocks with respect to the entire class definition through written test.</p> <p>Designed and developed a program that implements classes and objects that model real world object through programming activity.</p> <p>Decided what relevant properties of real world</p>	<p>Programming Video Demonstrations</p> <p>Online Hands-On Programming Sessions</p>	<p>Zoom</p> <p>CodeChum</p>	<p>Written Test Connectivism</p> <p>Programming Activity with Rubrics Connectivism</p> <p>Hands On Exam Online Learning Model</p>	<p>PC</p> <p>IDE</p> <p>Handouts</p>

						object to include in the model through hands-on exam.				
IO9 IO10 IO11	T05 IT06	CILO01	Week 4, 5 and 6	<p>Write statements that invoke or call member methods through the use of objects.</p> <p>Design a java program that clearly separates the user interface from the methods that represent the business logic of the program.</p> <p>Exhibit good judgment in separating behavioral implementation.</p>	<p>Encapsulation And Information Hiding</p> <p>Separation Of Behavior Implementation</p> <p>Accessing Object Members</p> <p>Packages</p>	<p>Wrote statements that invoke or call member methods through the use of objects as shown in program source code.</p> <p>Designed a java program that clearly separates the user interface from the methods that represent the business logic of the program through programming activity.</p> <p>Exhibited good judgment in separating</p>	<p>Programming Video Demonstrations</p> <p>Online Hands-On Programming Sessions</p>	<p>Zoom</p> <p>CodeChum</p>	<p>Programming Activity with Rubrics</p> <p>Connectivism</p> <p>Hands On Exam</p> <p>Online Learning Model</p>	<p>LED Projector</p> <p>Books</p> <p>Handouts</p> <p>PC</p>

						behavioral implementation as shown in the program source code.				
IO9 IO10 IO11	IT01 IT05 IT06	CILO01	Week 7, 8 and 9	<p>Apply the concept of sub-class derivation in a java program that models real-world instances.</p> <p>Demonstrate how constructor calling chain is done by writing constructors that uses super keyword.</p> <p>Organize super classes and sub classes accordingly.</p>	<p>Classes And Subclasses</p> <p>Class Hierarchy</p> <p>Deriving Sub-Class</p> <p>Super Class</p> <p>Constructor Calling Chain</p>	<p>Applied the concept of sub-class derivation in a java program that models real-world instances.</p> <p>Demonstrated how constructor calling chain is done by writing constructors that uses super keyword through programming activity.</p> <p>Organize super classes and sub classes accordingly as shown in</p>	<p>Programming Video Demonstrations</p> <p>Online Hands-On Programming Sessions</p>	<p>Zoom</p> <p>CodeChum</p>	<p>Programming Activity with Rubrics</p> <p>Connectivism</p> <p>Hands On Exam</p> <p>Online Learning Model</p>	<p>Books</p> <p>Handouts</p> <p>PC</p>

						program source code.				
IO9 IO10 IO11	IT02 IT05 IT07	CILO01	Week 10, 11 and 12	<p>Apply the benefit of reusability by creating a java project that demonstrates the concept of inheritance.</p> <p>Implement methods that override other methods (instance) from the parent classes and implement the same for some static methods (hiding).</p> <p>Exhibit good judgment in using polymorphism.</p>	<p>Inheritance (Overriding, Dynamic Dispatch)</p> <p>What Is And Why Inheritance?</p> <p>Overriding Methods Hiding Methods</p> <p>Hiding Fields</p> <p>Type Casting</p> <p>Polymorphism</p> <p>Final Class And Final Methods</p>	<p>Applied the benefit of reusability by creating a java project that demonstrates the concept of inheritance.</p> <p>Implemented methods that override other methods (instance) from the parent classes and implement the same for some static methods (hiding) through programming activity.</p> <p>Exhibited good judgment in using polymorphism as shown in program</p>	<p>Programming Video Demonstrations</p> <p>Online Hands-On Programming Sessions</p>	<p>Zoom</p> <p>CodeChum</p>	<p>Programming Activity with Rubrics</p> <p>Connectivism</p> <p>Hands On Exam</p> <p>Online Learning Model</p>	PC Handouts

						source code.				
IO9 IO10 IO11	IT02 IT03 IT05	CILO01	Week 13, 14, 15 and 16	<p>Contrast abstract classes and methods with concrete classes and their subsequent methods.</p> <p>Create a java program that illustrates the concepts of interface and polymorphism.</p> <p>Practice using Interfaces as to shorten lines of code.</p>	<p>Abstract Classes And Java Interfaces</p> <p>Abstract Classes</p> <p>Abstract Method</p> <p>Interfaces (Defining And Implementing)</p> <p>Multiple Interfaces</p> <p>Inheritance Among Interfaces Interface And Polymorphism</p>	<p>Contrasted abstract classes and methods with concrete classes and their subsequent methods through written exam.</p> <p>Created a java program that illustrates the concepts of interface and polymorphism through programming activity.</p> <p>Practiced using Interfaces as to shorten lines of code through hands-on programming activity.</p>	<p>Programming Video Demonstrations</p> <p>Online Hands-On Programming Sessions</p>	<p>Zoom</p> <p>CodeChum</p>	<p>Written Test</p> <p>Connectivism</p> <p>Programming Activity with Rubrics</p> <p>Connectivism</p> <p>Hands On Exam</p> <p>Online Learning Model</p>	<p>PC</p> <p>Handouts</p>

COURSE OUTPUT

As evidence of attaining the above learning outcomes, the student has to do and submit the following:

- Programming Activities
- Hands-On Exams
- Written Exams

GRADING SYSTEM

- Programming Activities – 30%
- Hands-On Exams – 50%
- Written Exams – 20%

REFERENCES

Internet Resources:

Handouts from JEDI Course Notes-Intro2-MasterDocument.pdf.

PREPARED BY:	<i>P. Centino</i> PAMELA S. CENTINO
DATE:	JUNE 2020