PF I.1.1

IMPLEMENTATION

The Faculty

I.1. demonstrate skills and competencies in all of the following:

I.1.1. knowledge of the program objectives/outcome(s);

Documents attached:

- CHED MEMORANDUM ORDER 87 S. 2017
- SAMPLE SYLLABUS

CMO 87 s. 2017

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ANONAS COR. PUREZA STREETS, STA. MESA, MANILA

Republic of the Philippines
OFFICE OF THE PRESIDENT
COMMISSION ON HIGHER EDUCATION

CHED MEMORANDUM ORDER
No. 87
Series of 2017

SUBJECT: POLICIES, STANDARDS AND GUIDELINES FOR THE BACHELOR OF SCIENCE IN COMPUTER ENGINEERING (BSCpE) EFFECTIVE (AY) 2018-2019

In accordance with the pertinent provisions of Republic Act (RA) No. 7722, otherwise known as the "*Higher Education Act of 1994*," in pursuance of an outcomes-based quality assurance system as advocated under CMO 46 s. 2012 (Policy-Standard to Enhance Quality Assurance (QA) in Philippine Higher Education through an Outcomes-Based and Typology-Based Quality Assurance) and as addendum to CMO 37, s. 2012 (Establishment of an Outcomes-Based Educational System in Higher Education Institutions offering Engineering Programs), and by virtue of Commission en banc Resolution No. 788-2017 dated October 24, 2017 the following Policies, Standards and Guidelines (PSG) are hereby adopted and promulgated by the Commission.

ARTICLE I
INTRODUCTION

Section 1. Rationale

Based on the *Guidelines for the Implementation of CMO No. 46 series of 2012* and CMO 37 s. 2012, this PSG implements shift to outcomes based education leading to competency based standards. It specifies the "core competencies" expected of BS Computer Engineering graduates "regardless of the type of Higher Education Institutions (HEI) they graduate from." However, in recognition of outcomes-based education (OBE) and the typology of HEIs, this PSG also provide ample space for HEIs to innovate in the curriculum in line with the assessment of how best to achieve learning outcomes in their particular contexts and their respective missions.

ARTICLE II
AUTHORITY TO OPERATE

Section 2. Government Recognition

All private higher education institutions (PHEIs) intending to offer BS Computer Engineering must first secure proper authority from the Commission in accordance with this PSG. All PHEIs with an existing BS Computer Engineering program are required to shift to an outcomes-based approach based on CMO 37, s. 2012 and guided by this PSG. State universities and colleges (SUCs), and local universities and

colleges (LUCs) should likewise strictly adhere to the provisions in these policies and standards.

ARTICLE III
GENERAL PROVISIONS

Per Section 13 of RA 7722, the higher education institution shall exercise academic freedom in its curricular offerings but must comply with the minimum requirements for specific academic programs, the general education distribution requirements and the specific professional courses.

Section 3. Minimum Standards

The Articles that follow give minimum standards and other requirements and guidelines. The minimum standards are expressed as a minimum set of desired program outcomes which are given in Article IV Section 6. CHED designed a curriculum to attain such outcomes. This curriculum is shown in Article V Section 10 and Section 11 as **sample curriculum**. The number of units of this curriculum is here prescribed as the "minimum unit requirement" under Section 13 of RA 7722. To assure alignment of the curriculum with the program outcomes, this PSG provides a sample curriculum map in Article V Section 12 for the HEI to refer to in compliance with the implementing guidelines of CMO 37, s.2012.

Using a learner-centered/outcomes-based approach, CHED provided a description of Outcomes-Based Teaching and Learning delivery method in Article V Section 13. A sample course syllabus is also given in Article V Section 14 as support to the outcomes-based delivery method. Based on the curriculum and the means of its delivery, CHED determines the physical resource requirements for the library, laboratories and other facilities and the human resource requirements in terms of Administration and faculty. These are provided for in Article VI.

Section 4. Curriculum Design

The HEIs are allowed to design curricula suited to their own contexts and missions provided that they can demonstrate that the same leads to the attainment of the required minimum set of outcomes, albeit by a different route. In the same vein, they have latitude in terms of curriculum delivery and in terms of specification and deployment of human and physical resources as long as they can show that the attainment of the program outcomes and satisfaction of program educational objectives can be assured by the alternative means they propose.

The HEIs can use the **CHED Implementation Handbook for Outcomes-Based Education (OBE) and the Institutional Sustainability Assessment (ISA)** as a guide in making their submissions for Sections 19 to 24 of Article VII.

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ARTICLE IV
PROGRAM SPECIFICATIONS

Section 5. Program Description

5.1 Degree Name

The degree program described herein shall be called Bachelor of Science in Computer Engineering (BSCpE).

5.2 Nature of the Field of Study

The Bachelor of Science in Computer Engineering (BSCpE) is a program that embodies the science and technology of design, development, implementation, maintenance and integration of software and hardware components in modern computing systems and computer-controlled equipment.

5.3 Characteristics of Computer Engineering Graduates

With the ubiquity of computers, computer-based systems and networks in the world today, computer engineers must be versatile in the knowledge drawn from standard topics in computer science and electrical engineering as well as the foundations in mathematics and sciences. Because of the rapid pace of change in the computing field, computer engineers must be life-long learners to maintain their knowledge and skills within their chosen discipline.

An important distinction should be made between computer engineers, electrical engineers, other computer professionals, and engineering technologists. While such distinctions are sometimes ambiguous, computer engineers generally should satisfy the following three characteristics.

1. Possess the ability to design computers, computer-based systems and networks that include both hardware and software and their integration to solve novel engineering problems, subject to trade-offs involving a set of competing goals and constraints. In this context, "design" refers to a level of ability beyond "assembling" or "configuring" systems.

2. Have a breadth of knowledge in mathematics and engineering sciences, associated with the broader scope of engineering and beyond that narrowly required for the field.

3. Acquire and maintain a preparation for professional practice in engineering.

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5.4 Program Educational Objectives

Program Educational Objectives (PEOs) are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve within 3–5 years from graduation. PEOs are based on the needs of the program's constituencies and these shall be determined, articulated, and disseminated to the general public by the unit or department of the HEI offering the BSCpE program. The PEOs should also be assessed and evaluated periodically for continuing improvement.

5.5 Knowledge Areas

The knowledge areas include the following but not limited to:

a) Circuits and Electronics
b) Computing Algorithms
c) Computer Architecture and Organization
d) Digital Design
e) Embedded Systems
f) Computer Networks
g) Professional Practice
h) Information Security
i) Signal Processing
j) Systems and Project Engineering
k) Software Design
l) Occupational Health and Safety
m) Technopreneurship

5.6 Allied Programs

The allied programs of the BSCpE program are the following:

a) Electrical Engineering
b) Electronics Engineering
c) Software Engineering
d) Computer Science
e) Information Technology

These programs are those that may be considered as equivalent to the program for the purpose of determining faculty qualifications to handle allied and related courses to the program.

Section 6. Institutional and Program Outcomes

The minimum standards for the BS Computer Engineering program are expressed in the following minimum set of institutional and BSCpE program outcomes.

6.1 Institutional outcomes

a) Graduates of professional institutions must demonstrate a service orientation in one's profession,

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b) Graduates of colleges must participate in various types of employment, development activities, and public discourses, particularly in response to the needs of the communities one serves
c) Graduates of universities must participate in the generation of new knowledge or in research and development projects
d) Graduates of State Universities and Colleges must, in addition, have the competencies to support "national, regional and local development plans." (RA 7722).
e) Graduates of higher educational institutions must preserve and promote the Filipino historical and cultural heritage.

6.2. BSCpE Program Outcomes

By the time of graduation, the students of the program shall have the ability to:

a) Ability to apply knowledge of mathematics and science to solve complex engineering problems;
b) Ability to design and conduct experiments, as well as to analyze and interpret data;
c) Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, in accordance with standards;
d) Ability to function on multidisciplinary teams;
e) Ability to identify, formulate, and solve complex engineering problems;
f) Understanding of professional and ethical responsibility;
g) Ability to communicate effectively;
h) Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
i) Recognition of the need for, and an ability to engage in life-long learning
j) Knowledge of contemporary issues;
k) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice; and
l) Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments.

A PHEI, SUC, or LUC, at its option, may adopt mission-related program outcomes that are not included in the minimum set

Annex I presents the Competency Standards, Attributes and competencies of a Computer Engineer which should result from the program outcomes stated above.

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Section 7. Sample Performance Indicators

Performance Indicators (PIs) are specific, measurable statements identifying the performance(s) required to meet the outcome; confirmable through evidence.

Table 1. Sample Performance Indicators of a Program Outcome

Performance Outcomes		Performance Indicators	
f	Understanding of professional and ethical responsibility	1	Demonstrate knowledge of professional code of ethics
		2	Evaluate the ethical and societal implications of a design solution to a problem in CpE

Section 8. Program Assessment and Evaluation

Program Assessment refers to one or more processes that identify, collect, and prepare data to evaluate the attainment of Program Outcomes and Program Educational Objectives.

Program Evaluation pertains to one or more processes for interpreting the data and evidence accumulated from the assessment. Evaluation determines the extent at which the Program Outcomes and the Program Educational Objectives are achieved by comparing actual achievement versus set targets and standards. Evaluation results in decisions and actions regarding the continuous improvement of the program.

All HEIs are encouraged to form a Consultative Body to be part of the assessment and evaluation processes to be represented by the stakeholders.

8.1 Assessments and Evaluation of PEOs

The Assessment of Program Educational Objectives may include the following: the stakeholders of the program have to be contacted through surveys or focus group discussion to obtain feedback data on the extent of the achievement of the PEOs.

8.2. Assessment and Evaluation of POs

In the case of Program Outcomes Assessment, the defined Performance Indicators shall be connected to Key Courses (usually the Demonstrating or "D" courses in the Curriculum map), and an appropriate Assessment Methods (AM) may be applied. These methods may be direct or indirect depending on whether the demonstration of learning was measured by actual observation and authentic work of the student or through gathered opinions from the student or his peers. Refer to Table 2.

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Sample Syllabus

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Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

Vision

Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development c citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

- Provision of undergraduate and graduate education which meet international standards of quality and excellence;
- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environ
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resource

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

Objectives

1. Strengthen the Bachelor of Science in Computer Engineering program consistent with global trends;
2. Develop the critical thinking and communication skills of students, giving emphasis to research and extension services;
3. Enhance the competencies of students to evaluate, assess, design and operate safe, effective, economically-efficient and environmental friendly computer-based system;
4. create a conducive teaching and learning atmosphere with emphasis to Bachelor of Science in Computer Engineering faculty and students' growth and academic freedom;

5. establish network with educational institutions, Industries, GO's and NGO's, local and international, which could serve as:
   a. Funding sources and/or partners of researches;
   b. Sources of new technology;
   c. Centers for faculty and students' exchange programs and on-the-job trainings; and
   d. Grantees of scholarship/additional facilities.
6. conduct continuously action researches on the needs of laboratory and other facilities that could be locally produced or innovated using local materials and adapted technolc
7. equip graduates with appropriate knowledge and technical skills imbued with desirable work attitudes and moral values, through enhanced teaching/learning process by multimedia facilities on top of traditional methods;
8. develop faculty as competent mentors and quality researchers through advanced studies and other facets of continuing professional education

Course Title : **OBJECT-ORIENTED PROGRAMMING**

Course Code : **COEN 3444**

Course Credit : **4 units**

Pre-Requisite : **COEN 3340 (DATA STRUCTURES and ALGORITHM ANALYSIS)**

Course Description : This course introduces new techniques and concepts of programming. Java will be use as the programming language and as tool to implement object-or programming. Consequently, students will acquaint themselves with new syntax that is used to program Java programs. Object oriented programming as one of the classifications of prograr mainly introduces the use of objects, methods, variables, abstraction, interface, polymorphism and other object oriented related topics. This course takes as fact that the students have a learned the basic concepts of programming.

Institutional Learning Outcomes	Program Outcomes	Course Objectives
1. Creative and Critical Thinking	Use of contemporary problem solving in the analysis, design, and evaluation of computer and software systems, including system integration and implementation.	After completing the course, the student must be able to:
2. Effective Communication	Communicate effectively with the computing community and with society at large (in local and international scenes) about engineering activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.	✓ Learn the basic syntax and language rule of Java
3. Strong Service Orientation	Share expertise in literacy, productivity, and livelihood technology to the adopted community	✓ Understand the different control structure and their functions in programs
4. Community Engagement		✓ Learn the behavior and concepts of obje and classes
5. Adeptness in the Responsible Use of Technology	Use the techniques, skills and modern computer engineering tools necessary for engineering practice.	✓ Understand the use and the significance encapsulation, polymorphism, inheritanc and abstraction
6. Passion to Life-Long Learning	Engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of practice.	
7. High Level of Leadership and Organizational Skills	Knowledge and understanding computer engineering and management principles as a member and a leader in a team, to manage projects and in	

	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	
9. Sense of Nationalism and Global Responsiveness	The broad education necessary to understand the impact of computer engineering solutions in global and societal context.	✓ Use the different data structures and collections available in the Java standar library ✓ Learn how to read from input streams ar write to output streams ✓ Create custom GUI using the Java Swin API ✓ Understand the concept behind single ar multi-threaded applications ✓ Apply the knowledge of object orien programming in writing Java programs

COURSE PLAN

Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
Week 1	Class orientation Discussion of course goals, expected outcomes, course policies and grading system Assigning of Groups and Officers	Familiarize student on Outcome-Based Education Orient the student on the course syllabus, grading system and classroom rules	Orientation Review of the syllabus, learning activities and assessment Getting to know activity	Course Syllabus	None
Week 2	**Object-Oriented Concepts** • Procedural Programming vs. Object-Oriented Programming • Abstract Data Types (ADTs)	Explain the difference between a Procedural Programming and OOP Get familiar with Abstract Data Types Understand the basic concepts of Object Oriented Programming	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article381.html Malik, D. S.	Quiz Hands-on Activity Recitation

	• Object-Oriented Programming Concepts			*Java Programming*	
Week 3	**Java Fundamentals - Anatomy of a Basic Java Program** • Comments • Primitive Data Types • Expressions and Operators • Reference Types	Familiarize the Java Language Fundamentals Compile a basic program using Java Syntax	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article386.html Malik, D. S. *Java Programming*	Quiz Hands-on Activity Assignment Recitation
Week 4	**Flow Controls** • Conditional Statements • Looping Statements	Understand how the various flow control statements could be useful in Java programs. Understand the concepts of conditional statements in Java. Create Java programs to solve problems using various Flow Control statements and conditional statements	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,*	Quiz Machine Problem Program Tracing Practical Exam
Week 5	Arrays • array declaration • memory allocation • array initialization • accessing and storing values in arrays • multidimensional array	Understand the concepts of array. Learn how to use array in Java. Create Java programs to solve problems using array.	Lecture/Discussion Program Demonstration Recitation/Board work	Skrien, D. *Object-Oriented Design Using Java*	Quiz Machine Problem Practical Exam Recitation

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	_http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

	Overloading	and inheritance.			
Week 9	MIDTERM EXAMINATION				
Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
Week 11	**Collections Framework** • Collection • Set • List • Map	Enumerate the different Collection Frameworks Understand the concepts of collection Frameworks	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article673.html	Peer Programming Recitation Practical Exam Quiz
Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
Week 14	**Thread** • Thread Lifecycle • Thread Synchronization • Critical Sections	Understand the concepts of threading in Java. Create Java program to solve problems that require multi-threading in Java.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article673.html Malik, D. S. *Java Programming*	Short Quiz Machine Problem Program Tracing
Week 15	**Other Java Classes** • Abstract Class • Interfaces	Evaluate Classes used in Java Create an Abstract Class and Interfaces	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html Malik, D. S. *Java Programming*	Oral Participation Hands-On Activity Practical Exam
Week 16	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the grouped students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 17	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 18	**FINAL EXAMINATION**				

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COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
Lecture: 70% Midterm Grade ✓ Class Standing (60%) 45% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Midterm Examination (40%) Lab: 30% Midterm Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam Midterm Examination (40%) Passing Mark: 75%	Lecture: 70% Final Grade ✓ Class Standing (60%) 40% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Final Examination (40%) Lab: 30% Final Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam ✓ Final Examination (40%) Passing Mark: 75%

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REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs

PF I.1.2

I.1. demonstrate skills and competencies in all of the following:

I.1.2. reflecting the program outcomes clearly in the course objectives;

Documents attached:

- SAMPLE SYLLABUS

Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

Vision

Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development c citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

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- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environ
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resource

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

Objectives

1. Strengthen the Bachelor of Science in Computer Engineering program consistent with global trends;
2. Develop the critical thinking and communication skills of students, giving emphasis to research and extension services;
3. Enhance the competencies of students to evaluate, assess, design and operate safe, effective, economically-efficient and environmental friendly computer-based system;
4. create a conducive teaching and learning atmosphere with emphasis to Bachelor of Science in Computer Engineering faculty and students' growth and academic freedom;

5. establish network with educational institutions, Industries, GO's and NGO's, local and international, which could serve as:
   a. Funding sources and/or partners of researches;
   b. Sources of new technology;
   c. Centers for faculty and students' exchange programs and on-the-job trainings; and
   d. Grantees of scholarship/additional facilities.
6. conduct continuously action researches on the needs of laboratory and other facilities that could be locally produced or innovated using local materials and adapted technolc
7. equip graduates with appropriate knowledge and technical skills imbued with desirable work attitudes and moral values, through enhanced teaching/learning process by multimedia facilities on top of traditional methods;
8. develop faculty as competent mentors and quality researchers through advanced studies and other facets of continuing professional education

Course Title : **OBJECT-ORIENTED PROGRAMMING**

Course Code : **COEN 3444**

Course Credit : **4 units**

Pre-Requisite : **COEN 3340 (DATA STRUCTURES and ALGORITHM ANALYSIS)**

Course Description : This course introduces new techniques and concepts of programming. Java will be use as the programming language and as tool to implement object-or programming. Consequently, students will acquaint themselves with new syntax that is used to program Java programs. Object oriented programming as one of the classifications of prograr mainly introduces the use of objects, methods, variables, abstraction, interface, polymorphism and other object oriented related topics. This course takes as fact that the students have al learned the basic concepts of programming.

Institutional Learning Outcomes	Program Outcomes	Course Objectives
1. Creative and Critical Thinking	Use of contemporary problem solving in the analysis, design, and evaluation of computer and software systems, including system integration and implementation.	After completing the course, the student must be able to: ✓ Learn the basic syntax and language rule of Java ✓ Understand the different control structure and their functions in programs ✓ Learn the behavior and concepts of obje and classes ✓ Understand the use and the significance encapsulation, polymorphism, inheritanc and abstraction
2. Effective Communication	Communicate effectively with the computing community and with society at large (in local and international scenes) about engineering activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.	
3. Strong Service Orientation	Share expertise in literacy, productivity, and livelihood technology to the adopted community	
4. Community Engagement		
5. Adeptness in the Responsible Use of Technology	Use the techniques, skills and modern computer engineering tools necessary for engineering practice.	
6. Passion to Life-Long Learning	Engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of practice.	
7. High Level of Leadership and Organizational Skills	Knowledge and understanding computer engineering and management principles as a member and a leader in a team, to manage projects and in	

	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	✓ Use the different data structures and collections available in the Java standar library
9. Sense of Nationalism and Global Responsiveness	The broad education necessary to understand the impact of computer engineering solutions in global and societal context.	✓ Learn how to read from input streams ar write to output streams
		✓ Create custom GUI using the Java Swin API
		✓ Understand the concept behind single ar multi-threaded applications
		✓ Apply the knowledge of object orien programming in writing Java programs

COURSE PLAN

Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
Week 1	Class orientation Discussion of course goals, expected outcomes, course policies and grading system Assigning of Groups and Officers	Familiarize student on Outcome-Based Education Orient the student on the course syllabus, grading system and classroom rules	Orientation Review of the syllabus, learning activities and assessment Getting to know activity	Course Syllabus	None
Week 2	**Object-Oriented Concepts** • Procedural Programming vs. Object-Oriented Programming • Abstract Data Types (ADTs)	Explain the difference between a Procedural Programming and OOP Get familiar with Abstract Data Types Understand the basic concepts of Object Oriented Programming	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article381.html Malik, D. S.	Quiz Hands-on Activity Recitation

	• Object-Oriented Programming Concepts			*Java Programming*	
Week 3	**Java Fundamentals - Anatomy of a Basic Java Program** • Comments • Primitive Data Types • Expressions and Operators • Reference Types	Familiarize the Java Language Fundamentals Compile a basic program using Java Syntax	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article386.html Malik, D. S. *Java Programming*	Quiz Hands-on Activity Assignment Recitation
Week 4	**Flow Controls** • Conditional Statements • Looping Statements	Understand how the various flow control statements could be useful in Java programs. Understand the concepts of conditional statements in Java. Create Java programs to solve problems using various Flow Control statements and conditional statements	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,*	Quiz Machine Problem Program Tracing Practical Exam
Week 5	Arrays • array declaration • memory allocation • array initialization • accessing and storing values in arrays • multidimensional array	Understand the concepts of array. Learn how to use array in Java. Create Java programs to solve problems using array.	Lecture/Discussion Program Demonstration Recitation/Board work	Skrien, D. *Object-Oriented Design Using Java*	Quiz Machine Problem Practical Exam Recitation

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	_http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

	Overloading	and inheritance.			
Week 9	MIDTERM EXAMINATION				
Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
Week 11	**Collections Framework** • Collection • Set • List • Map	Enumerate the different Collection Frameworks Understand the concepts of collection Frameworks	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,* http://www.javafaq.nu/java-article673.html	Peer Programming Recitation Practical Exam Quiz
Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
Week 14	**Thread** • Thread Lifecycle • Thread Synchronization • Critical Sections	Understand the concepts of threading in Java. Create Java program to solve problems that require multi-threading in Java.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article673.html Malik, D. S. *Java Programming*	Short Quiz Machine Problem Program Tracing
Week 15	**Other Java Classes** • Abstract Class • Interfaces	Evaluate Classes used in Java Create an Abstract Class and Interfaces	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html Malik, D. S. *Java Programming*	Oral Participation Hands-On Activity Practical Exam
Week 16	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the grouped students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 17	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 18	FINAL EXAMINATION				

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RM322 CEA BLDG. NDC COMPOUND,
ANONAS COR. PUREZA STREETS, STA. MESA, MANILA

COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
Lecture: 70% Midterm Grade ✓ Class Standing (60%) 45% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Midterm Examination (40%) Lab: 30% Midterm Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam Midterm Examination (40%) Passing Mark: 75%	Lecture: 70% Final Grade ✓ Class Standing (60%) 40% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Final Examination (40%) Lab: 30% Final Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam ✓ Final Examination (40%) Passing Mark: 75%

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REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs

PF I.1.3

I.1. demonstrate skills and competencies in all of the following:

I.1.3. knowledge/mastery of the content, issues and methodologies in the discipline;

Documents attached:

- SAMPLE SYLLABUS

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PF I.1.3

I.1. demonstrate skills and competencies in all of the following:

I.1.3. knowledge/mastery of the content, issues and methodologies in the discipline;

Documents attached:

- SAMPLE SYLLABUS

Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

Vision

Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development c citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

- Provision of undergraduate and graduate education which meet international standards of quality and excellence;
- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environr
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resources

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

Objectives

1. Strengthen the Bachelor of Science in Computer Engineering program consistent with global trends;
2. Develop the critical thinking and communication skills of students, giving emphasis to research and extension services;
3. Enhance the competencies of students to evaluate, assess, design and operate safe, effective, economically-efficient and environmental friendly computer-based system;
4. create a conducive teaching and learning atmosphere with emphasis to Bachelor of Science in Computer Engineering faculty and students' growth and academic freedom;

5. establish network with educational institutions, Industries, GO's and NGO's, local and international, which could serve as:
   a. Funding sources and/or partners of researches;
   b. Sources of new technology;
   c. Centers for faculty and students' exchange programs and on-the-job trainings; and
   d. Grantees of scholarship/additional facilities.
6. conduct continuously action researches on the needs of laboratory and other facilities that could be locally produced or innovated using local materials and adapted technolc
7. equip graduates with appropriate knowledge and technical skills imbued with desirable work attitudes and moral values, through enhanced teaching/learning process by multimedia facilities on top of traditional methods;
8. develop faculty as competent mentors and quality researchers through advanced studies and other facets of continuing professional education

Course Title : **OBJECT-ORIENTED PROGRAMMING**

Course Code : **COEN 3444**

Course Credit : **4 units**

Pre-Requisite : **COEN 3340 (DATA STRUCTURES and ALGORITHM ANALYSIS)**

Course Description : This course introduces new techniques and concepts of programming. Java will be use as the programming language and as tool to implement object-or programming. Consequently, students will acquaint themselves with new syntax that is used to program Java programs. Object oriented programming as one of the classifications of progran mainly introduces the use of objects, methods, variables, abstraction, interface, polymorphism and other object oriented related topics. This course takes as fact that the students have al learned the basic concepts of programming.

Institutional Learning Outcomes	Program Outcomes	Course Objectives
1. Creative and Critical Thinking	Use of contemporary problem solving in the analysis, design, and evaluation of computer and software systems, including system integration and implementation.	After completing the course, the student must be able to:
2. Effective Communication	Communicate effectively with the computing community and with society at large (in local and international scenes) about engineering activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.	✓ Learn the basic syntax and language rul of Java
3. Strong Service Orientation	Share expertise in literacy, productivity, and livelihood technology to the adopted community	✓ Understand the different control structure and their functions in programs
4. Community Engagement		✓ Learn the behavior and concepts of obje and classes
5. Adeptness in the Responsible Use of Technology	Use the techniques, skills and modern computer engineering tools necessary for engineering practice.	✓ Understand the use and the significance encapsulation, polymorphism, inheritanc and abstraction
6. Passion to Life-Long Learning	Engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of practice.	
7. High Level of Leadership and Organizational Skills	Knowledge and understanding computer engineering and management principles as a member and a leader in a team, to manage projects and in	

	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	
9. Sense of Nationalism and Global Responsiveness	The broad education necessary to understand the impact of computer engineering solutions in global and societal context.	✓ Use the different data structures and collections available in the Java standar library ✓ Learn how to read from input streams ar write to output streams ✓ Create custom GUI using the Java Swin API ✓ Understand the concept behind single ar multi-threaded applications ✓ Apply the knowledge of object orien programming in writing Java programs

COURSE PLAN

Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
Week 1	Class orientation Discussion of course goals, expected outcomes, course policies and grading system Assigning of Groups and Officers	Familiarize student on Outcome-Based Education Orient the student on the course syllabus, grading system and classroom rules	Orientation Review of the syllabus, learning activities and assessment Getting to know activity	Course Syllabus	None
Week 2	**Object-Oriented Concepts** • Procedural Programming vs. Object-Oriented Programming • Abstract Data Types (ADTs)	Explain the difference between a Procedural Programming and OOP Get familiar with Abstract Data Types Understand the basic concepts of Object Oriented Programming	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article381.html Malik, D. S.	Quiz Hands-on Activity Recitation

	• Object-Oriented Programming Concepts			*Java Programming*	
Week 3	**Java Fundamentals - Anatomy of a Basic Java Program** • Comments • Primitive Data Types • Expressions and Operators • Reference Types	Familiarize the Java Language Fundamentals Compile a basic program using Java Syntax	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article386.html Malik, D. S. *Java Programming*	Quiz Hands-on Activity Assignment Recitation
Week 4	**Flow Controls** • Conditional Statements • Looping Statements	Understand how the various flow control statements could be useful in Java programs. Understand the concepts of conditional statements in Java. Create Java programs to solve problems using various Flow Control statements and conditional statements	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,*	Quiz Machine Problem Program Tracing Practical Exam
Week 5	Arrays • array declaration • memory allocation • array initialization • accessing and storing values in arrays • multidimensional array	Understand the concepts of array. Learn how to use array in Java. Create Java programs to solve problems using array.	Lecture/Discussion Program Demonstration Recitation/Board work	Skrien, D. *Object-Oriented Design Using Java*	Quiz Machine Problem Practical Exam Recitation

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

	Overloading	and inheritance.			
Week 9	MIDTERM EXAMINATION				
Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
Week 11	**Collections Framework** • Collection • Set • List • Map	Enumerate the different Collection Frameworks Understand the concepts of collection Frameworks	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article673.html	Peer Programming Recitation Practical Exam Quiz
Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
Week 14	**Thread** • Thread Lifecycle • Thread Synchronization • Critical Sections	Understand the concepts of threading in Java. Create Java program to solve problems that require multi-threading in Java.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article673.html Malik, D. S. *Java Programming*	Short Quiz Machine Problem Program Tracing
Week 15	**Other Java Classes** • Abstract Class • Interfaces	Evaluate Classes used in Java Create an Abstract Class and Interfaces	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html Malik, D. S. *Java Programming*	Oral Participation Hands-On Activity Practical Exam
Week 16	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the grouped students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
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Week 18	FINAL EXAMINATION				

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COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
Lecture: 70% Midterm Grade ✓ Class Standing (60%) 45% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Midterm Examination (40%) Lab: 30% Midterm Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam Midterm Examination (40%) Passing Mark: 75%	Lecture: 70% Final Grade ✓ Class Standing (60%) 40% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Final Examination (40%) Lab: 30% Final Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam ✓ Final Examination (40%) Passing Mark: 75%

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REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs

P.F I.1.4

I.1. demonstrate skills and competencies in all of the following:

I.1.4. proficiency in the use of the language of instruction

Documents attached:

- SAMPLE SYLLABUS
- MATIRX OF FACULTY EVALUATION

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Sample Syllabus

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Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

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Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development c citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

- Provision of undergraduate and graduate education which meet international standards of quality and excellence;
- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environ
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resource

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

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	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	
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Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
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	Overloading	and inheritance.			
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Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
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Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
Week 14	**Thread** • Thread Lifecycle • Thread Synchronization • Critical Sections	Understand the concepts of threading in Java. Create Java program to solve problems that require multi-threading in Java.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article673.html Malik, D. S. *Java Programming*	Short Quiz Machine Problem Program Tracing
Week 15	**Other Java Classes** • Abstract Class • Interfaces	Evaluate Classes used in Java Create an Abstract Class and Interfaces	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html Malik, D. S. *Java Programming*	Oral Participation Hands-On Activity Practical Exam
Week 16	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the grouped students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 17	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 18	FINAL EXAMINATION				

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COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
Lecture: 70% Midterm Grade ✓ Class Standing (60%) 45% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Midterm Examination (40%) Lab: 30% Midterm Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam Midterm Examination (40%) Passing Mark: 75%	Lecture: 70% Final Grade ✓ Class Standing (60%) 40% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Final Examination (40%) Lab: 30% Final Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam ✓ Final Examination (40%) Passing Mark: 75%

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REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs

Matrix of Faculty Evaluation

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Faculty Online Evaluation
SUMMARY OF RESULTS
Second Semester S.Y. 1819

COLLEGE OF ENGINEERING

Over-all Rating: 84.8581 — Interpretation: VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
1	ADO, REMEDIOS G.	96.8000	OUTSTANDING	100.0000	OUTSTANDING	92.4188	OUTSTANDING	99.2000	OUTSTANDING	94.0532	OUTSTANDING
2	ARTIFICIO, EDCEL	81.6000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	81.8126	VERY SATISFACTORY	87.2000	VERY SATISFACTORY	81.5888	VERY SATISFACTORY
3	CABRERA, KEVIN MICHAEL A.	81.6000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	81.3358	VERY SATISFACTORY	No Evaluation		81.2551	VERY SATISFACTORY
4	CANLAS, ARLENE B.	92.0000	OUTSTANDING	88.8000	VERY SATISFACTORY	88.1256	VERY SATISFACTORY	100.0000	OUTSTANDING	88.9679	VERY SATISFACTORY
5	CANSINO, JULIUS S	100.0000	OUTSTANDING	No Evaluation		78.1638	VERY SATISFACTORY	100.0000	OUTSTANDING	74.7147	VERY SATISFACTORY
6	CHIN, FRANK ANTHONY	80.0000	VERY SATISFACTORY	71.2000	VERY SATISFACTORY	81.9528	VERY SATISFACTORY	99.2000	OUTSTANDING	80.4870	VERY SATISFACTORY
7	DE LA CRUZ, ARVIN	94.0000	OUTSTANDING	99.2000	OUTSTANDING	86.7844	VERY SATISFACTORY	100.0000	OUTSTANDING	89.4691	VERY SATISFACTORY
8	DELA CRUZ, JOHN	93.2000	OUTSTANDING	95.6000	OUTSTANDING	82.8416	VERY SATISFACTORY	100.0000	OUTSTANDING	86.1891	VERY SATISFACTORY
9	FERNANDO, RONALD D	100.0000	OUTSTANDING	100.0000	OUTSTANDING	81.8126	VERY SATISFACTORY	100.0000	OUTSTANDING	87.2688	VERY SATISFACTORY
10	KHAN, MA. LEONA	77.6000	VERY SATISFACTORY	77.6000	VERY SATISFACTORY	75.1258	VERY SATISFACTORY	No Evaluation		75.8681	VERY SATISFACTORY
11	LEGARDA, MARY ANN VILLA	86.8000	VERY SATISFACTORY	75.6000	VERY SATISFACTORY	64.4602	SATISFACTORY	99.2000	OUTSTANDING	70.0421	SATISFACTORY
12	LORICO, JULIAN L.	92.0000	OUTSTANDING	92.8000	OUTSTANDING	77.9552	VERY SATISFACTORY	100.0000	OUTSTANDING	82.2486	VERY SATISFACTORY
13	MADRIGALEJOS, DANILO JR. C.	82.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	91.3764	OUTSTANDING	No Evaluation		88.3635	VERY SATISFACTORY
14	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	100.0000	OUTSTANDING	92.5694	OUTSTANDING	100.0000	OUTSTANDING	94.7986	OUTSTANDING
15	NATIVIDAD, FERDINAND O	100.0000	OUTSTANDING	100.0000	OUTSTANDING	79.9004	VERY SATISFACTORY	100.0000	OUTSTANDING	85.9303	VERY SATISFACTORY
16	NATIVIDAD, MARK KERVIN	100.0000	OUTSTANDING	94.0000	OUTSTANDING	89.4376	VERY SATISFACTORY	100.0000	OUTSTANDING	92.0063	OUTSTANDING
17	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	100.0000	OUTSTANDING	83.8172	VERY SATISFACTORY	98.8000	OUTSTANDING	88.6720	VERY SATISFACTORY
18	PAJABERA, ORLANDO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	90.4034	VERY SATISFACTORY	98.4000	OUTSTANDING	93.2824	OUTSTANDING

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Faculty Online Evaluation
SUMMARY OF RESULTS
Second Semester S.Y. 1819

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
19	REYES, LUTZER UGTO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	94.6384	OUTSTANDING	100.0000	OUTSTANDING	96.2469	OUTSTANDING
20	RODRIGUEZ, JOSHUA BENJAMIN	100.0000	OUTSTANDING	100.0000	OUTSTANDING	87.7486	VERY SATISFACTORY	100.0000	OUTSTANDING	91.4240	OUTSTANDING
21	SUNGA, BOB MATHEW	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	79.8984	VERY SATISFACTORY	No Evaluation		79.9289	VERY SATISFACTORY
22	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	90.5604	VERY SATISFACTORY	100.0000	OUTSTANDING	93.3923	OUTSTANDING
23	TRIA, ROMAN ANGELO CARPIO	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	79.2852	VERY SATISFACTORY	88.8000	VERY SATISFACTORY	79.4996	VERY SATISFACTORY
24	VELASCO, ANTONIO Y.	96.0000	OUTSTANDING	100.0000	OUTSTANDING	77.74	VERY SATISFACTORY	100.0000	OUTSTANDING	83.6180	VERY SATISFACTORY
25	VERZO, ALLAN	90.0000	VERY SATISFACTORY	63.2000	SATISFACTORY	54.0234	SATISFACTORY	94.8000	OUTSTANDING	62.1364	SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
First Semester S.Y. 1819

COLLEGE OF ENGINEERING

Over-all Rating: 85.7082 — Interpretation: VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1 Rating	Supervisor Evaluator 1 Interpretation	Supervisor Evaluator 2 Rating	Supervisor Evaluator 2 Interpretation	Student Evaluation Rating	Student Evaluation Interpretation	Self Evaluation Rating	Self Evaluation Interpretation	Over-all Evaluation Rating	Over-all Evaluation Interpretation
1	ADO, REMEDIOS G.	94.0000	OUTSTANDING	100.0000	OUTSTANDING	84.881	VERY SATISFACTORY	92.0000	OUTSTANDING	88.2167	VERY SATISFACTORY
2	ARTIFICIO, EDCEL	92.0000	OUTSTANDING	75.2000	VERY SATISFACTORY	76.434	VERY SATISFACTORY	77.6000	VERY SATISFACTORY	79.4238	VERY SATISFACTORY
3	CANLAS, ARLENE B.	92.0000	OUTSTANDING	88.4000	VERY SATISFACTORY	72.491	VERY SATISFACTORY	100.0000	OUTSTANDING	77.9837	VERY SATISFACTORY
4	CANSINO, JULIUS S	100.0000	OUTSTANDING	No Evaluation		81.5388	VERY SATISFACTORY	100.0000	OUTSTANDING	87.0772	VERY SATISFACTORY
5	CHIN, FRANK ANTHONY	91.2000	OUTSTANDING	80.0000	VERY SATISFACTORY	67.6238	SATISFACTORY	100.0000	OUTSTANDING	73.5767	VERY SATISFACTORY
6	DE LA CRUZ, ARVIN	100.0000	OUTSTANDING	100.0000	OUTSTANDING	86.4334	VERY SATISFACTORY	100.0000	OUTSTANDING	90.5034	VERY SATISFACTORY
7	DELA CRUZ, JOHN	94.8000	OUTSTANDING	100.0000	OUTSTANDING	83.2676	VERY SATISFACTORY	100.0000	OUTSTANDING	87.2473	VERY SATISFACTORY
8	DELOS REYES, NORMAN DAVID FARISCAL	92.0000	OUTSTANDING	86.4000	VERY SATISFACTORY	69.6626	SATISFACTORY	100.0000	OUTSTANDING	75.8038	VERY SATISFACTORY
9	FERNANDO, RONALD D	98.0000	OUTSTANDING	100.0000	OUTSTANDING	82.2072	VERY SATISFACTORY	100.0000	OUTSTANDING	87.1450	VERY SATISFACTORY
10	KHAN, MA. LEONA	92.0000	OUTSTANDING	75.2000	VERY SATISFACTORY	73.9648	VERY SATISFACTORY	90.4000	VERY SATISFACTORY	77.6954	VERY SATISFACTORY
11	LEGARDA, MARY ANN VILLA	91.2000	OUTSTANDING	87.6000	VERY SATISFACTORY	72.4466	VERY SATISFACTORY	100.0000	OUTSTANDING	77.7126	VERY SATISFACTORY
12	LORICO, JULIAN L.	94.8000	OUTSTANDING	100.0000	OUTSTANDING	81.7196	VERY SATISFACTORY	100.0000	OUTSTANDING	86.1637	VERY SATISFACTORY
13	MADRIGALEJOS, DANILO JR. C.	93.2000	OUTSTANDING	88.8000	VERY SATISFACTORY	88.6706	VERY SATISFACTORY	99.2000	OUTSTANDING	89.5894	VERY SATISFACTORY
14	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	100.0000	OUTSTANDING	91.8212	OUTSTANDING	100.0000	OUTSTANDING	94.2748	OUTSTANDING
15	NATIVIDAD, FERDINAND O	94.8000	OUTSTANDING	100.0000	OUTSTANDING	74.9954	VERY SATISFACTORY	100.0000	OUTSTANDING	81.4568	VERY SATISFACTORY
16	NATIVIDAD, MARK KERVIN	94.0000	OUTSTANDING	88.8000	VERY SATISFACTORY	90.8962	VERY SATISFACTORY	100.0000	OUTSTANDING	91.3073	OUTSTANDING
17	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	100.0000	OUTSTANDING	80.5744	VERY SATISFACTORY	92.0000	OUTSTANDING	86.4021	VERY SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
First Semester S.Y. 1819

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
18	PAJABERA, ORLANDO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	88.9388	VERY SATISFACTORY	96.0000	OUTSTANDING	92.2572	OUTSTANDING
19	REYES, LUTZER UGTO	98.0000	OUTSTANDING	100.0000	OUTSTANDING	92.113	OUTSTANDING	100.0000	OUTSTANDING	94.0791	OUTSTANDING
20	RODRIGUEZ, JOSHUA BENJAMIN	97.2000	OUTSTANDING	100.0000	OUTSTANDING	85.2712	VERY SATISFACTORY	100.0000	OUTSTANDING	89.1298	VERY SATISFACTORY
21	SAWI, CHRISTOPHER M.	94.0000	OUTSTANDING	89.6000	VERY SATISFACTORY	91.1376	OUTSTANDING	100.0000	OUTSTANDING	91.5563	OUTSTANDING
22	SUNGA, BOB MATHEW	94.0000	OUTSTANDING	80.0000	VERY SATISFACTORY	94.4314	OUTSTANDING	No Evaluation		92.9020	OUTSTANDING
23	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	83.3844	VERY SATISFACTORY	100.0000	OUTSTANDING	88.3691	VERY SATISFACTORY
24	TRIA, ROMAN ANGELO CARPIO	94.0000	OUTSTANDING	90.0000	VERY SATISFACTORY	87.9336	VERY SATISFACTORY	83.2000	VERY SATISFACTORY	89.3535	VERY SATISFACTORY
25	VELASCO, ANTONIO Y.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	72.6726	VERY SATISFACTORY	100.0000	OUTSTANDING	80.8708	VERY SATISFACTORY
26	VERZO, ALLAN	91.2000	OUTSTANDING	78.0000	VERY SATISFACTORY	74.6778	VERY SATISFACTORY	96.4000	OUTSTANDING	78.3145	VERY SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
Second Semester S.Y. 1718

COLLEGE OF ENGINEERING

Over-all Rating: 82.0481
Interpretation: VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
1	ADO, REMEDIOS G.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	91.038	OUTSTANDING	99.2000	OUTSTANDING	93.7266	OUTSTANDING
2	ARTIFICIO, EDCEL	100.0000	OUTSTANDING	88.0000	VERY SATISFACTORY	90.3662	VERY SATISFACTORY	91.6000	OUTSTANDING	92.0563	OUTSTANDING
3	CABRERA, KEVIN MICHAEL A.	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	78.27	VERY SATISFACTORY	100.0000	OUTSTANDING	78.7890	VERY SATISFACTORY
4	CANLAS, ARLENE B.	80.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	70.9544	SATISFACTORY	100.0000	OUTSTANDING	75.6681	VERY SATISFACTORY
5	CANSINO, JULIUS S	100.0000	OUTSTANDING	No Evaluation		78.99	VERY SATISFACTORY	100.0000	OUTSTANDING	85.2930	VERY SATISFACTORY
6	CHIN, FRANK ANTHONY	80.0000	VERY SATISFACTORY	89.6000	VERY SATISFACTORY	79.473	VERY SATISFACTORY	99.2000	OUTSTANDING	80.5911	VERY SATISFACTORY
7	DE LA CRUZ, ARVIN	92.8000	OUTSTANDING	100.0000	OUTSTANDING	86.6644	VERY SATISFACTORY	100.0000	OUTSTANDING	89.2251	VERY SATISFACTORY
8	DELA CRUZ, JOHN	No Evaluation		No Evaluation		89.4924	VERY SATISFACTORY	96.0000	OUTSTANDING	62.6447	SATISFACTORY
9	DELOS REYES, NORMAN DAVID FARISCAL	80.0000	VERY SATISFACTORY	84.8000	VERY SATISFACTORY	70.4004	SATISFACTORY	88.0000	VERY SATISFACTORY	73.7603	VERY SATISFACTORY
10	FERNANDO, RONALD D	88.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	94.0466	OUTSTANDING	100.0000	OUTSTANDING	93.4326	OUTSTANDING
11	KHAN, MA. LEONA	80.0000	VERY SATISFACTORY	78.4000	VERY SATISFACTORY	69.4284	SATISFACTORY	No Evaluation		72.4399	VERY SATISFACTORY
12	LEGARDA, MARY ANN VILLA	80.0000	VERY SATISFACTORY	79.2000	VERY SATISFACTORY	58.21	SATISFACTORY	No Evaluation		64.6670	SATISFACTORY
13	LORICO, JULIAN L.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	82.152	VERY SATISFACTORY	100.0000	OUTSTANDING	87.5064	VERY SATISFACTORY
14	MADRIGALEJOS, DANILO JR. C.	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	83.417	VERY SATISFACTORY	No Evaluation		82.3919	VERY SATISFACTORY
15	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	100.0000	OUTSTANDING	92.8298	OUTSTANDING	100.0000	OUTSTANDING	94.9809	OUTSTANDING
16	MANALO, RICO M.	60.0000	SATISFACTORY	71.6000	VERY SATISFACTORY	70.759	SATISFACTORY	100.0000	OUTSTANDING	68.6913	SATISFACTORY
17	NATIVIDAD, FERDINAND O	100.0000	OUTSTANDING	100.0000	OUTSTANDING	74.836	VERY SATISFACTORY	100.0000	OUTSTANDING	82.3852	VERY SATISFACTORY
18	NATIVIDAD, MARK KERVIN	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	86.9062	VERY SATISFACTORY	100.0000	OUTSTANDING	84.8343	VERY SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
Second Semester S.Y. 1718

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
19	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	100.0000	OUTSTANDING	76.8968	VERY SATISFACTORY	100.0000	OUTSTANDING	83.8278	VERY SATISFACTORY
20	PAJABERA, ORLANDO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	89.9204	VERY SATISFACTORY	98.4000	OUTSTANDING	92.9443	OUTSTANDING
21	PANGILINAN, KERUBIN	60.0000	SATISFACTORY	67.2000	SATISFACTORY	71.9958	VERY SATISFACTORY	85.6000	VERY SATISFACTORY	69.1171	SATISFACTORY
22	REYES, LUTZER UGTO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	92.3382	OUTSTANDING	100.0000	OUTSTANDING	94.6367	OUTSTANDING
23	RODRIGUEZ, JOSHUA BENJAMIN	100.0000	OUTSTANDING	100.0000	OUTSTANDING	89.366	VERY SATISFACTORY	100.0000	OUTSTANDING	92.5562	OUTSTANDING
24	SAWI, CHRISTOPHER M.	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	92.8966	OUTSTANDING	100.0000	OUTSTANDING	89.0276	VERY SATISFACTORY
25	SERVIANO, AZDIE	60.0000	SATISFACTORY	65.6000	SATISFACTORY	69.1738	SATISFACTORY	60.0000	SATISFACTORY	66.9817	SATISFACTORY
26	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	88.2376	VERY SATISFACTORY	100.0000	OUTSTANDING	91.7663	OUTSTANDING
27	TRIA, ROMAN ANGELO CARPIO	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	90.0558	VERY SATISFACTORY	80.4000	VERY SATISFACTORY	87.0391	VERY SATISFACTORY
28	VELASCO, ANTONIO Y.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	78.1446	VERY SATISFACTORY	100.0000	OUTSTANDING	84.7012	VERY SATISFACTORY
29	VERZO, ALLAN	60.0000	SATISFACTORY	78.4000	VERY SATISFACTORY	62.6746	SATISFACTORY	100.0000	OUTSTANDING	63.7122	SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
First Semester S.Y. 1718

COLLEGE OF ENGINEERING

Over-all Rating: 80.7489 — Interpretation: VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
1	ADO, REMEDIOS G.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	96.0716	OUTSTANDING	98.4000	OUTSTANDING	97.2501	OUTSTANDING
2	ARTIFICIO, EDCEL	79.2000	VERY SATISFACTORY	91.2000	OUTSTANDING	90.4918	VERY SATISFACTORY	91.6000	OUTSTANDING	88.3043	VERY SATISFACTORY
3	CABRERA, KEVIN MICHAEL A.	79.2000	VERY SATISFACTORY	84.0000	VERY SATISFACTORY	80.219	VERY SATISFACTORY	96.8000	OUTSTANDING	80.3933	VERY SATISFACTORY
4	CANLAS, ARLENE B.	80.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	78.4648	VERY SATISFACTORY	100.0000	OUTSTANDING	80.9254	VERY SATISFACTORY
5	CANSINO, JULIUS S	100.0000	OUTSTANDING	No Evaluation		69.6612	SATISFACTORY	100.0000	OUTSTANDING	78.7628	VERY SATISFACTORY
6	CECOGO, JOHN VINCENT	80.0000	VERY SATISFACTORY	90.4000	VERY SATISFACTORY	74.05	VERY SATISFACTORY	71.2000	VERY SATISFACTORY	76.8750	VERY SATISFACTORY
7	DE LA CRUZ, ARVIN	No Evaluation		No Evaluation		84.7498	VERY SATISFACTORY	100.0000	OUTSTANDING	59.3249	SATISFACTORY
8	DELOS REYES, NORMAN DAVID FARISCAL	79.2000	VERY SATISFACTORY	91.6000	OUTSTANDING	61.9294	SATISFACTORY	81.2000	VERY SATISFACTORY	68.3506	SATISFACTORY
9	FERNANDO, RONALD D	100.0000	OUTSTANDING	100.0000	OUTSTANDING	92.1688	OUTSTANDING	99.2000	OUTSTANDING	94.5182	OUTSTANDING
10	KHAN, MA. LEONA	78.4000	VERY SATISFACTORY	78.4000	VERY SATISFACTORY	54.3372	SATISFACTORY	80.8000	VERY SATISFACTORY	61.5560	SATISFACTORY
11	LEGARDA, MARY ANN VILLA	75.2000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	66.1772	SATISFACTORY	99.2000	OUTSTANDING	69.3640	SATISFACTORY
12	LIGAYO, MICHAEL ANGELO D.	78.4000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	86.8736	VERY SATISFACTORY	No Evaluation		84.4915	VERY SATISFACTORY
13	LORICO, JULIAN L.	80.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	83.3342	VERY SATISFACTORY	100.0000	OUTSTANDING	84.3339	VERY SATISFACTORY
14	MADRIGALEJOS, DANILO JR. C.	80.0000	VERY SATISFACTORY	87.6000	VERY SATISFACTORY	85.6142	VERY SATISFACTORY	97.6000	OUTSTANDING	84.6899	VERY SATISFACTORY
15	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	100.0000	OUTSTANDING	89.7482	VERY SATISFACTORY	100.0000	OUTSTANDING	92.8237	OUTSTANDING
16	MANALO, RICO M.	78.4000	VERY SATISFACTORY	84.0000	VERY SATISFACTORY	68.924	SATISFACTORY	100.0000	OUTSTANDING	72.3268	VERY SATISFACTORY
17	NATIVIDAD, FERDINAND O	80.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	73.7794	VERY SATISFACTORY	100.0000	OUTSTANDING	77.6456	VERY SATISFACTORY
18	NATIVIDAD, MARK KERVIN	80.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	85.681	VERY SATISFACTORY	100.0000	OUTSTANDING	85.9767	VERY SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
First Semester S.Y. 1718

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
19	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	100.0000	OUTSTANDING	81.6212	VERY SATISFACTORY	99.2000	OUTSTANDING	87.1348	VERY SATISFACTORY
20	PAJABERA, ORLANDO	80.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	88.9086	VERY SATISFACTORY	98.4000	OUTSTANDING	88.2360	VERY SATISFACTORY
21	PANGILINAN, KERUBIN	78.4000	VERY SATISFACTORY	83.6000	VERY SATISFACTORY	71.5824	VERY SATISFACTORY	92.8000	OUTSTANDING	74.1477	VERY SATISFACTORY
22	REYES, LUTZER UGTO	80.0000	VERY SATISFACTORY	100.0000	OUTSTANDING	89.3976	VERY SATISFACTORY	100.0000	OUTSTANDING	88.5783	VERY SATISFACTORY
23	RODRIGUEZ, JOSHUA BENJAMIN	100.0000	OUTSTANDING	100.0000	OUTSTANDING	89.2252	VERY SATISFACTORY	100.0000	OUTSTANDING	92.4576	OUTSTANDING
24	SAWI, CHRISTOPHER M.	80.0000	VERY SATISFACTORY	95.6000	OUTSTANDING	94.673	OUTSTANDING	100.0000	OUTSTANDING	91.8311	OUTSTANDING
25	SERVIANO, AZDIE	78.4000	VERY SATISFACTORY	84.0000	VERY SATISFACTORY	68.096	SATISFACTORY	83.6000	VERY SATISFACTORY	71.7472	VERY SATISFACTORY
26	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	88.3148	VERY SATISFACTORY	100.0000	OUTSTANDING	91.8204	OUTSTANDING
27	VELASCO, ANTONIO Y.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	71.0254	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	79.7178	VERY SATISFACTORY
28	VERZO, ALLAN	70.4000	SATISFACTORY	80.0000	VERY SATISFACTORY	50.436	FAIR	100.0000	OUTSTANDING	57.3852	SATISFACTORY

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Second Semester S.Y. 1617

COLLEGE OF ENGINEERING

Over-all Rating: 78.9293 — Interpretation: VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
1	ADO, REMEDIOS G.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	92.1066	OUTSTANDING	100.0000	OUTSTANDING	94.4746	OUTSTANDING
2	ARTIFICIO, EDCEL	100.0000	OUTSTANDING	80.0000	VERY SATISFACTORY	76.9848	VERY SATISFACTORY	80.8000	VERY SATISFACTORY	81.8894	VERY SATISFACTORY
3	CABRERA, KEVIN MICHAEL A.	86.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	75.3856	VERY SATISFACTORY	100.0000	OUTSTANDING	77.9699	VERY SATISFACTORY
4	CANLAS, ARLENE B.	91.6000	OUTSTANDING	90.0000	VERY SATISFACTORY	78.2158	VERY SATISFACTORY	100.0000	OUTSTANDING	82.0711	VERY SATISFACTORY
5	CANSINO, JULIUS S	98.4000	OUTSTANDING	No Evaluation		76.4488	VERY SATISFACTORY	100.0000	OUTSTANDING	73.1942	VERY SATISFACTORY
6	CATRIZ JR., ELORDE S	80.0000	VERY SATISFACTORY	72.4000	VERY SATISFACTORY	82.0188	VERY SATISFACTORY	73.2000	VERY SATISFACTORY	80.6532	VERY SATISFACTORY
7	CECOGO, JOHN VINCENT	86.4000	VERY SATISFACTORY	78.4000	VERY SATISFACTORY	73.5548	VERY SATISFACTORY	63.2000	SATISFACTORY	76.6084	VERY SATISFACTORY
8	CHIN, FRANK ANTHONY	80.0000	VERY SATISFACTORY	No Evaluation		74.3048	VERY SATISFACTORY	No Evaluation		68.0134	SATISFACTORY
9	DELOS REYES, NORMAN DAVID FARISCAL	80.0000	VERY SATISFACTORY	74.4000	VERY SATISFACTORY	49.55	FAIR	82.4000	VERY SATISFACTORY	58.1250	SATISFACTORY
10	FERNANDO, RONALD D	88.8000	VERY SATISFACTORY	100.0000	OUTSTANDING	86.4672	VERY SATISFACTORY	100.0000	OUTSTANDING	88.2870	VERY SATISFACTORY
11	KHAN, MA. LEONA	61.6000	SATISFACTORY	58.4000	SATISFACTORY	57.4742	SATISFACTORY	56.4000	SATISFACTORY	58.3919	SATISFACTORY
12	LEGARDA, MARY ANN VILLA	80.0000	VERY SATISFACTORY	74.4000	VERY SATISFACTORY	55.7792	SATISFACTORY	No Evaluation		62.4854	SATISFACTORY
13	LIGAYO, MICHAEL ANGELO D.	80.0000	VERY SATISFACTORY	74.0000	VERY SATISFACTORY	88.293	VERY SATISFACTORY	84.0000	VERY SATISFACTORY	85.2051	VERY SATISFACTORY
14	LORICO, JULIAN L.	96.4000	OUTSTANDING	80.8000	VERY SATISFACTORY	87.4786	VERY SATISFACTORY	100.0000	OUTSTANDING	88.5950	VERY SATISFACTORY
15	MADRIGALEJOS, DANILO JR. C.	80.0000	VERY SATISFACTORY	79.2000	VERY SATISFACTORY	89.7008	VERY SATISFACTORY	96.0000	OUTSTANDING	86.7106	VERY SATISFACTORY
16	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	96.0000	OUTSTANDING	90.781	VERY SATISFACTORY	100.0000	OUTSTANDING	93.1467	OUTSTANDING
17	MAIGUE, CHENNE	80.0000	VERY SATISFACTORY	72.8000	VERY SATISFACTORY	78.7528	VERY SATISFACTORY	95.2000	OUTSTANDING	78.4070	VERY SATISFACTORY
18	MANALO, RICO M.	80.0000	VERY SATISFACTORY	76.0000	VERY SATISFACTORY	64.6054	SATISFACTORY	No Evaluation		68.8238	SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
Second Semester S.Y. 1617

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
19	NATIVIDAD, FERDINAND O	100.0000	OUTSTANDING	84.0000	VERY SATISFACTORY	76.1296	VERY SATISFACTORY	100.0000	OUTSTANDING	81.6907	VERY SATISFACTORY
20	NATIVIDAD, MARK KERVIN	91.2000	OUTSTANDING	76.4000	VERY SATISFACTORY	75.3286	VERY SATISFACTORY	100.0000	OUTSTANDING	78.6100	VERY SATISFACTORY
21	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	97.6000	OUTSTANDING	80.204	VERY SATISFACTORY	93.6000	OUTSTANDING	85.9028	VERY SATISFACTORY
22	PAJABERA, ORLANDO	100.0000	OUTSTANDING	83.2000	VERY SATISFACTORY	85.5762	VERY SATISFACTORY	97.6000	OUTSTANDING	88.2233	VERY SATISFACTORY
23	PANGILINAN, KERUBIN	78.4000	VERY SATISFACTORY	69.2000	SATISFACTORY	77.0722	VERY SATISFACTORY	86.0000	VERY SATISFACTORY	76.5505	VERY SATISFACTORY
24	PILUETA, NIÑO U.	93.2000	OUTSTANDING	80.0000	VERY SATISFACTORY	72.3994	VERY SATISFACTORY	100.0000	OUTSTANDING	77.3196	VERY SATISFACTORY
25	REYES, LUTZER UGTO	94.0000	OUTSTANDING	94.0000	OUTSTANDING	93.2062	OUTSTANDING	100.0000	OUTSTANDING	93.4443	OUTSTANDING
26	RODRIGUEZ, JOSHUA BENJAMIN	100.0000	OUTSTANDING	84.8000	VERY SATISFACTORY	86.6306	VERY SATISFACTORY	100.0000	OUTSTANDING	89.1214	VERY SATISFACTORY
27	SAWI, CHRISTOPHER M.	91.6000	OUTSTANDING	80.0000	VERY SATISFACTORY	91.4552	OUTSTANDING	100.0000	OUTSTANDING	90.3386	VERY SATISFACTORY
28	SERVIANO, AZDIE	78.4000	VERY SATISFACTORY	70.8000	SATISFACTORY	68.941	SATISFACTORY	69.2000	SATISFACTORY	71.0187	VERY SATISFACTORY
29	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	96.4000	OUTSTANDING	85.3782	VERY SATISFACTORY	100.0000	OUTSTANDING	89.4047	VERY SATISFACTORY
30	TRIA, ROMAN ANGELO CARPIO	80.0000	VERY SATISFACTORY	82.4000	VERY SATISFACTORY	92.4912	OUTSTANDING	71.2000	VERY SATISFACTORY	88.9838	VERY SATISFACTORY
31	VALENTINO, JIMMAR	No Evaluation		No Evaluation		74.7632	VERY SATISFACTORY	84.4000	VERY SATISFACTORY	52.3342	SATISFACTORY
32	VELASCO, ANTONIO Y.	100.0000	OUTSTANDING	91.2000	OUTSTANDING	76.2128	VERY SATISFACTORY	100.0000	OUTSTANDING	82.4690	VERY SATISFACTORY
33	VERZO, ALLAN	60.0000	SATISFACTORY	56.8000	SATISFACTORY	55.034	SATISFACTORY	100.0000	OUTSTANDING	56.2038	SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
First Semester S.Y. 1617

COLLEGE OF ENGINEERING

Over-all Rating: 81.3897 — Interpretation: VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
1	ADO, REMEDIOS G.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	91.3586	OUTSTANDING	99.2000	OUTSTANDING	93.9510	OUTSTANDING
2	ARTIFICIO, EDCEL	83.6000	VERY SATISFACTORY	84.4000	VERY SATISFACTORY	65.7012	SATISFACTORY	94.0000	OUTSTANDING	71.1508	VERY SATISFACTORY
3	CABRERA, KEVIN MICHAEL A.	84.6000	VERY SATISFACTORY	83.6000	VERY SATISFACTORY	75.3318	VERY SATISFACTORY	100.0000	OUTSTANDING	78.0523	VERY SATISFACTORY
4	CANLAS, ARLENE B.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	86.1474	VERY SATISFACTORY	100.0000	OUTSTANDING	90.3032	VERY SATISFACTORY
5	CANSINO, JULIUS S	100.0000	OUTSTANDING	100.0000	OUTSTANDING	81.5926	VERY SATISFACTORY	100.0000	OUTSTANDING	87.1148	VERY SATISFACTORY
6	CATRIZ JR., ELORDE S	89.6000	VERY SATISFACTORY	82.8000	VERY SATISFACTORY	82.9372	VERY SATISFACTORY	73.6000	VERY SATISFACTORY	84.2560	VERY SATISFACTORY
7	CECOGO, JOHN VINCENT	92.8000	OUTSTANDING	84.8000	VERY SATISFACTORY	88.429	VERY SATISFACTORY	72.0000	VERY SATISFACTORY	86.9403	VERY SATISFACTORY
8	DELOS REYES, NORMAN DAVID FARISCAL	82.0000	VERY SATISFACTORY	82.8000	VERY SATISFACTORY	65.015	SATISFACTORY	83.6000	VERY SATISFACTORY	70.1905	SATISFACTORY
9	FERNANDO, RONALD D	100.0000	OUTSTANDING	100.0000	OUTSTANDING	83.631	VERY SATISFACTORY	100.0000	OUTSTANDING	88.5417	VERY SATISFACTORY
10	KHAN, MA. LEONA	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	78.639	VERY SATISFACTORY	96.0000	OUTSTANDING	79.0473	VERY SATISFACTORY
11	LEGARDA, MARY ANN VILLA	78.4000	VERY SATISFACTORY	78.4000	VERY SATISFACTORY	70.6914	SATISFACTORY	100.0000	OUTSTANDING	73.0040	VERY SATISFACTORY
12	LIGAYO, MICHAEL ANGELO D.	83.6000	VERY SATISFACTORY	83.6000	VERY SATISFACTORY	80.0904	VERY SATISFACTORY	85.6000	VERY SATISFACTORY	81.1433	VERY SATISFACTORY
13	LORICO, JULIAN L.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	75.9248	VERY SATISFACTORY	100.0000	OUTSTANDING	83.1474	VERY SATISFACTORY
14	MADRIGALEJOS, DANILO JR. C.	79.2000	VERY SATISFACTORY	82.0000	VERY SATISFACTORY	81.08	VERY SATISFACTORY	97.6000	OUTSTANDING	80.7960	VERY SATISFACTORY
15	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	100.0000	OUTSTANDING	86.105	VERY SATISFACTORY	100.0000	OUTSTANDING	90.2735	VERY SATISFACTORY
16	MAIGUE, CHENNE	80.8000	VERY SATISFACTORY	82.8000	VERY SATISFACTORY	61.6874	SATISFACTORY	80.0000	VERY SATISFACTORY	67.6212	SATISFACTORY
17	MANALO, RICO M.	82.0000	VERY SATISFACTORY	82.0000	VERY SATISFACTORY	58.0988	SATISFACTORY	88.8000	VERY SATISFACTORY	65.2692	SATISFACTORY

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		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
18	NATIVIDAD, FERDINAND O	100.0000	OUTSTANDING	100.0000	OUTSTANDING	74.6226	VERY SATISFACTORY	100.0000	OUTSTANDING	82.2358	VERY SATISFACTORY
19	NATIVIDAD, MARK KERVIN	83.6000	VERY SATISFACTORY	85.2000	VERY SATISFACTORY	71.6738	VERY SATISFACTORY	100.0000	OUTSTANDING	75.4117	VERY SATISFACTORY
20	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	100.0000	OUTSTANDING	77.73	VERY SATISFACTORY	100.0000	OUTSTANDING	84.4110	VERY SATISFACTORY
21	PAJABERA, ORLANDO	85.2000	VERY SATISFACTORY	85.2000	VERY SATISFACTORY	85.0218	VERY SATISFACTORY	92.4000	OUTSTANDING	85.0753	VERY SATISFACTORY
22	PANGILINAN, KERUBIN	81.2000	VERY SATISFACTORY	83.6000	VERY SATISFACTORY	75.0162	VERY SATISFACTORY	92.8000	OUTSTANDING	77.1113	VERY SATISFACTORY
23	REYES, LUTZER UGTO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	85.3796	VERY SATISFACTORY	100.0000	OUTSTANDING	89.7657	VERY SATISFACTORY
24	RODRIGUEZ, JOSHUA BENJAMIN	100.0000	OUTSTANDING	83.6000	VERY SATISFACTORY	86.2418	VERY SATISFACTORY	100.0000	OUTSTANDING	88.7293	VERY SATISFACTORY
25	SAWI, CHRISTOPHER M.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	90.465	VERY SATISFACTORY	98.8000	OUTSTANDING	93.3255	OUTSTANDING
26	SERVIANO, AZDIE	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	81.4362	VERY SATISFACTORY	96.8000	OUTSTANDING	81.0053	VERY SATISFACTORY
27	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	No Evaluation		83.2092	VERY SATISFACTORY	99.2000	OUTSTANDING	88.2464	VERY SATISFACTORY
28	VELASCO, ANTONIO Y.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	68.45	SATISFACTORY	100.0000	OUTSTANDING	77.9150	VERY SATISFACTORY
29	VERZO, ALLAN	78.8000	VERY SATISFACTORY	79.2000	VERY SATISFACTORY	57.9826	SATISFACTORY	100.0000	OUTSTANDING	64.2678	SATISFACTORY

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P.F. I1.5

I.1. demonstrate skills and competencies in all of the following:

I.1.5. the use of higher-order thinking skills such as analytical, critical, creative, innovative and problem solving;

Documents attached:

- SAMPLE SYLLABUS
- FACULTY EVALUATION

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Sample Syllabus

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Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

Vision

Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development c citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

- Provision of undergraduate and graduate education which meet international standards of quality and excellence;
- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environ
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resource

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

Objectives

1. Strengthen the Bachelor of Science in Computer Engineering program consistent with global trends;
2. Develop the critical thinking and communication skills of students, giving emphasis to research and extension services;
3. Enhance the competencies of students to evaluate, assess, design and operate safe, effective, economically-efficient and environmental friendly computer-based system;
4. create a conducive teaching and learning atmosphere with emphasis to Bachelor of Science in Computer Engineering faculty and students' growth and academic freedom;

5. establish network with educational institutions, Industries, GO's and NGO's, local and international, which could serve as:
   a. Funding sources and/or partners of researches;
   b. Sources of new technology;
   c. Centers for faculty and students' exchange programs and on-the-job trainings; and
   d. Grantees of scholarship/additional facilities.
6. conduct continuously action researches on the needs of laboratory and other facilities that could be locally produced or innovated using local materials and adapted technolc
7. equip graduates with appropriate knowledge and technical skills imbued with desirable work attitudes and moral values, through enhanced teaching/learning process by multimedia facilities on top of traditional methods;
8. develop faculty as competent mentors and quality researchers through advanced studies and other facets of continuing professional education

Course Title : **OBJECT-ORIENTED PROGRAMMING**

Course Code : **COEN 3444**

Course Credit : **4 units**

Pre-Requisite : **COEN 3340 (DATA STRUCTURES and ALGORITHM ANALYSIS)**

Course Description : This course introduces new techniques and concepts of programming. Java will be use as the programming language and as tool to implement object-or programming. Consequently, students will acquaint themselves with new syntax that is used to program Java programs. Object oriented programming as one of the classifications of prograr mainly introduces the use of objects, methods, variables, abstraction, interface, polymorphism and other object oriented related topics. This course takes as fact that the students have al learned the basic concepts of programming.

Institutional Learning Outcomes	Program Outcomes	Course Objectives
1. Creative and Critical Thinking	Use of contemporary problem solving in the analysis, design, and evaluation of computer and software systems, including system integration and implementation.	After completing the course, the student must be able to:
2. Effective Communication	Communicate effectively with the computing community and with society at large (in local and international scenes) about engineering activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.	✓ Learn the basic syntax and language rul of Java ✓ Understand the different control structure and their functions in programs
3. Strong Service Orientation	Share expertise in literacy, productivity, and livelihood technology to the adopted community	✓ Learn the behavior and concepts of obje and classes
4. Community Engagement		✓ Understand the use and the significance encapsulation, polymorphism, inheritanc and abstraction
5. Adeptness in the Responsible Use of Technology	Use the techniques, skills and modern computer engineering tools necessary for engineering practice.	
6. Passion to Life-Long Learning	Engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of practice.	
7. High Level of Leadership and Organizational Skills	Knowledge and understanding computer engineering and management principles as a member and a leader in a team, to manage projects and in	

	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	
9. Sense of Nationalism and Global Responsiveness	The broad education necessary to understand the impact of computer engineering solutions in global and societal context.	✓ Use the different data structures and collections available in the Java standar library ✓ Learn how to read from input streams ar write to output streams ✓ Create custom GUI using the Java Swin API ✓ Understand the concept behind single ar multi-threaded applications ✓ Apply the knowledge of object orien programming in writing Java programs

COURSE PLAN

Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
Week 1	Class orientation Discussion of course goals, expected outcomes, course policies and grading system Assigning of Groups and Officers	Familiarize student on Outcome-Based Education Orient the student on the course syllabus, grading system and classroom rules	Orientation Review of the syllabus, learning activities and assessment Getting to know activity	Course Syllabus	None
Week 2	**Object-Oriented Concepts** • Procedural Programming vs. Object-Oriented Programming • Abstract Data Types (ADTs)	Explain the difference between a Procedural Programming and OOP Get familiar with Abstract Data Types Understand the basic concepts of Object Oriented Programming	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article381.html Malik, D. S.	Quiz Hands-on Activity Recitation

	• Object-Oriented Programming Concepts			*Java Programming*	
Week 3	**Java Fundamentals - Anatomy of a Basic Java Program** • Comments • Primitive Data Types • Expressions and Operators • Reference Types	Familiarize the Java Language Fundamentals Compile a basic program using Java Syntax	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article386.html Malik, D. S. *Java Programming*	Quiz Hands-on Activity Assignment Recitation
Week 4	**Flow Controls** • Conditional Statements • Looping Statements	Understand how the various flow control statements could be useful in Java programs. Understand the concepts of conditional statements in Java. Create Java programs to solve problems using various Flow Control statements and conditional statements	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,*	Quiz Machine Problem Program Tracing Practical Exam
Week 5	Arrays • array declaration • memory allocation • array initialization • accessing and storing values in arrays • multidimensional array	Understand the concepts of array. Learn how to use array in Java. Create Java programs to solve problems using array.	Lecture/Discussion Program Demonstration Recitation/Board work	Skrien, D. *Object-Oriented Design Using Java*	Quiz Machine Problem Practical Exam Recitation

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	_http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

	Overloading	and inheritance.			
Week 9	MIDTERM EXAMINATION				
Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
Week 11	**Collections Framework** • Collection • Set • List • Map	Enumerate the different Collection Frameworks Understand the concepts of collection Frameworks	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article673.html	Peer Programming Recitation Practical Exam Quiz
Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
Week 14	**Thread** • Thread Lifecycle • Thread Synchronization • Critical Sections	Understand the concepts of threading in Java. Create Java program to solve problems that require multi-threading in Java.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article673.html Malik, D. S. *Java Programming*	Short Quiz Machine Problem Program Tracing
Week 15	**Other Java Classes** • Abstract Class • Interfaces	Evaluate Classes used in Java Create an Abstract Class and Interfaces	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html Malik, D. S. *Java Programming*	Oral Participation Hands-On Activity Practical Exam
Week 16	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the grouped students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 17	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 18	FINAL EXAMINATION				

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COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
Lecture: 70% Midterm Grade ✓ Class Standing (60%) 45% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Midterm Examination (40%) Lab: 30% Midterm Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam Midterm Examination (40%) Passing Mark: 75%	Lecture: 70% Final Grade ✓ Class Standing (60%) 40% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Final Examination (40%) Lab: 30% Final Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam ✓ Final Examination (40%) Passing Mark: 75%

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REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs

Faculty Evaluation

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Faculty Online Evaluation
SUMMARY OF RESULTS
Second Semester S.Y. 1819

COLLEGE OF ENGINEERING

Over-all Rating: 84.8581
Interpretation: VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
1	ADO, REMEDIOS G.	96.8000	OUTSTANDING	100.0000	OUTSTANDING	92.4188	OUTSTANDING	99.2000	OUTSTANDING	94.0532	OUTSTANDING
2	ARTIFICIO, EDCEL	81.6000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	81.8126	VERY SATISFACTORY	87.2000	VERY SATISFACTORY	81.5888	VERY SATISFACTORY
3	CABRERA, KEVIN MICHAEL A.	81.6000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	81.3358	VERY SATISFACTORY	No Evaluation		81.2551	VERY SATISFACTORY
4	CANLAS, ARLENE B.	92.0000	OUTSTANDING	88.8000	VERY SATISFACTORY	88.1256	VERY SATISFACTORY	100.0000	OUTSTANDING	88.9679	VERY SATISFACTORY
5	CANSINO, JULIUS S	100.0000	OUTSTANDING	No Evaluation		78.1638	VERY SATISFACTORY	100.0000	OUTSTANDING	74.7147	VERY SATISFACTORY
6	CHIN, FRANK ANTHONY	80.0000	VERY SATISFACTORY	71.2000	VERY SATISFACTORY	81.9528	VERY SATISFACTORY	99.2000	OUTSTANDING	80.4870	VERY SATISFACTORY
7	DE LA CRUZ, ARVIN	94.0000	OUTSTANDING	99.2000	OUTSTANDING	86.7844	VERY SATISFACTORY	100.0000	OUTSTANDING	89.4691	VERY SATISFACTORY
8	DELA CRUZ, JOHN	93.2000	OUTSTANDING	95.6000	OUTSTANDING	82.8416	VERY SATISFACTORY	100.0000	OUTSTANDING	86.1891	VERY SATISFACTORY
9	FERNANDO, RONALD D	100.0000	OUTSTANDING	100.0000	OUTSTANDING	81.8126	VERY SATISFACTORY	100.0000	OUTSTANDING	87.2688	VERY SATISFACTORY
10	KHAN, MA. LEONA	77.6000	VERY SATISFACTORY	77.6000	VERY SATISFACTORY	75.1258	VERY SATISFACTORY	No Evaluation		75.8681	VERY SATISFACTORY
11	LEGARDA, MARY ANN VILLA	86.8000	VERY SATISFACTORY	75.6000	VERY SATISFACTORY	64.4602	SATISFACTORY	99.2000	OUTSTANDING	70.0421	SATISFACTORY
12	LORICO, JULIAN L.	92.0000	OUTSTANDING	92.8000	OUTSTANDING	77.9552	VERY SATISFACTORY	100.0000	OUTSTANDING	82.2486	VERY SATISFACTORY
13	MADRIGALEJOS, DANILO JR. C.	82.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	91.3764	OUTSTANDING	No Evaluation		88.3635	VERY SATISFACTORY
14	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	100.0000	OUTSTANDING	92.5694	OUTSTANDING	100.0000	OUTSTANDING	94.7986	OUTSTANDING
15	NATIVIDAD, FERDINAND O	100.0000	OUTSTANDING	100.0000	OUTSTANDING	79.9004	VERY SATISFACTORY	100.0000	OUTSTANDING	85.9303	VERY SATISFACTORY
16	NATIVIDAD, MARK KERVIN	100.0000	OUTSTANDING	94.0000	OUTSTANDING	89.4376	VERY SATISFACTORY	100.0000	OUTSTANDING	92.0063	OUTSTANDING
17	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	100.0000	OUTSTANDING	83.8172	VERY SATISFACTORY	98.8000	OUTSTANDING	88.6720	VERY SATISFACTORY
18	PAJABERA, ORLANDO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	90.4034	VERY SATISFACTORY	98.4000	OUTSTANDING	93.2824	OUTSTANDING

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Faculty Online Evaluation
SUMMARY OF RESULTS
Second Semester S.Y. 1819

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
19	REYES, LUTZER UGTO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	94.6384	OUTSTANDING	100.0000	OUTSTANDING	96.2469	OUTSTANDING
20	RODRIGUEZ, JOSHUA BENJAMIN	100.0000	OUTSTANDING	100.0000	OUTSTANDING	87.7486	VERY SATISFACTORY	100.0000	OUTSTANDING	91.4240	OUTSTANDING
21	SUNGA, BOB MATHEW	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	79.8984	VERY SATISFACTORY	No Evaluation		79.9289	VERY SATISFACTORY
22	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	90.5604	VERY SATISFACTORY	100.0000	OUTSTANDING	93.3923	OUTSTANDING
23	TRIA, ROMAN ANGELO CARPIO	80.0000	VERY SATISFACTORY	80.0000	VERY SATISFACTORY	79.2852	VERY SATISFACTORY	88.8000	VERY SATISFACTORY	79.4996	VERY SATISFACTORY
24	VELASCO, ANTONIO Y.	96.0000	OUTSTANDING	100.0000	OUTSTANDING	77.74	VERY SATISFACTORY	100.0000	OUTSTANDING	83.6180	VERY SATISFACTORY
25	VERZO, ALLAN	90.0000	VERY SATISFACTORY	63.2000	SATISFACTORY	54.0234	SATISFACTORY	94.8000	OUTSTANDING	62.1364	SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
First Semester S.Y. 1819

COLLEGE OF ENGINEERING

Over-all Rating 85.7082 **Interpretation** VERY SATISFACTORY

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
1	ADO, REMEDIOS G.	94.0000	OUTSTANDING	100.0000	OUTSTANDING	84.881	VERY SATISFACTORY	92.0000	OUTSTANDING	88.2167	VERY SATISFACTORY
2	ARTIFICIO, EDCEL	92.0000	OUTSTANDING	75.2000	VERY SATISFACTORY	76.434	VERY SATISFACTORY	77.6000	VERY SATISFACTORY	79.4238	VERY SATISFACTORY
3	CANLAS, ARLENE B.	92.0000	OUTSTANDING	88.4000	VERY SATISFACTORY	72.491	VERY SATISFACTORY	100.0000	OUTSTANDING	77.9837	VERY SATISFACTORY
4	CANSINO, JULIUS S	100.0000	OUTSTANDING	No Evaluation		81.5388	VERY SATISFACTORY	100.0000	OUTSTANDING	87.0772	VERY SATISFACTORY
5	CHIN, FRANK ANTHONY	91.2000	OUTSTANDING	80.0000	VERY SATISFACTORY	67.6238	SATISFACTORY	100.0000	OUTSTANDING	73.5767	VERY SATISFACTORY
6	DE LA CRUZ, ARVIN	100.0000	OUTSTANDING	100.0000	OUTSTANDING	86.4334	VERY SATISFACTORY	100.0000	OUTSTANDING	90.5034	VERY SATISFACTORY
7	DELA CRUZ, JOHN	94.8000	OUTSTANDING	100.0000	OUTSTANDING	83.2676	VERY SATISFACTORY	100.0000	OUTSTANDING	87.2473	VERY SATISFACTORY
8	DELOS REYES, NORMAN DAVID FARISCAL	92.0000	OUTSTANDING	86.4000	VERY SATISFACTORY	69.6626	SATISFACTORY	100.0000	OUTSTANDING	75.8038	VERY SATISFACTORY
9	FERNANDO, RONALD D	98.0000	OUTSTANDING	100.0000	OUTSTANDING	82.2072	VERY SATISFACTORY	100.0000	OUTSTANDING	87.1450	VERY SATISFACTORY
10	KHAN, MA. LEONA	92.0000	OUTSTANDING	75.2000	VERY SATISFACTORY	73.9648	VERY SATISFACTORY	90.4000	VERY SATISFACTORY	77.6954	VERY SATISFACTORY
11	LEGARDA, MARY ANN VILLA	91.2000	OUTSTANDING	87.6000	VERY SATISFACTORY	72.4466	VERY SATISFACTORY	100.0000	OUTSTANDING	77.7126	VERY SATISFACTORY
12	LORICO, JULIAN L.	94.8000	OUTSTANDING	100.0000	OUTSTANDING	81.7196	VERY SATISFACTORY	100.0000	OUTSTANDING	86.1637	VERY SATISFACTORY
13	MADRIGALEJOS, DANILO JR. C.	93.2000	OUTSTANDING	88.8000	VERY SATISFACTORY	88.6706	VERY SATISFACTORY	99.2000	OUTSTANDING	89.5894	VERY SATISFACTORY
14	MAHAGUAY, ROLITO LACEDA	100.0000	OUTSTANDING	100.0000	OUTSTANDING	91.8212	OUTSTANDING	100.0000	OUTSTANDING	94.2748	OUTSTANDING
15	NATIVIDAD, FERDINAND O	94.8000	OUTSTANDING	100.0000	OUTSTANDING	74.9954	VERY SATISFACTORY	100.0000	OUTSTANDING	81.4568	VERY SATISFACTORY
16	NATIVIDAD, MARK KERVIN	94.0000	OUTSTANDING	88.8000	VERY SATISFACTORY	90.8962	VERY SATISFACTORY	100.0000	OUTSTANDING	91.3073	OUTSTANDING
17	OQUINDO, FLORINDA H	100.0000	OUTSTANDING	100.0000	OUTSTANDING	80.5744	VERY SATISFACTORY	92.0000	OUTSTANDING	86.4021	VERY SATISFACTORY

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Faculty Online Evaluation
SUMMARY OF RESULTS
First Semester S.Y. 1819

	Name of Faculty	Supervisor Evaluator 1		Supervisor Evaluator 2		Student Evaluation		Self Evaluation		Over-all Evaluation	
		Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation	Rating	Interpretation
18	PAJABERA, ORLANDO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	88.9388	VERY SATISFACTORY	96.0000	OUTSTANDING	92.2572	OUTSTANDING
19	REYES, LUTZER UGTO	98.0000	OUTSTANDING	100.0000	OUTSTANDING	92.113	OUTSTANDING	100.0000	OUTSTANDING	94.0791	OUTSTANDING
20	RODRIGUEZ, JOSHUA BENJAMIN	97.2000	OUTSTANDING	100.0000	OUTSTANDING	85.2712	VERY SATISFACTORY	100.0000	OUTSTANDING	89.1298	VERY SATISFACTORY
21	SAWI, CHRISTOPHER M.	94.0000	OUTSTANDING	89.6000	VERY SATISFACTORY	91.1376	OUTSTANDING	100.0000	OUTSTANDING	91.5563	OUTSTANDING
22	SUNGA, BOB MATHEW	94.0000	OUTSTANDING	80.0000	VERY SATISFACTORY	94.4314	OUTSTANDING	No Evaluation		92.9020	OUTSTANDING
23	TENERIFE JR, PEDRITO	100.0000	OUTSTANDING	100.0000	OUTSTANDING	83.3844	VERY SATISFACTORY	100.0000	OUTSTANDING	88.3691	VERY SATISFACTORY
24	TRIA, ROMAN ANGELO CARPIO	94.0000	OUTSTANDING	90.0000	VERY SATISFACTORY	87.9336	VERY SATISFACTORY	83.2000	VERY SATISFACTORY	89.3535	VERY SATISFACTORY
25	VELASCO, ANTONIO Y.	100.0000	OUTSTANDING	100.0000	OUTSTANDING	72.6726	VERY SATISFACTORY	100.0000	OUTSTANDING	80.8708	VERY SATISFACTORY
26	VERZO, ALLAN	91.2000	OUTSTANDING	78.0000	VERY SATISFACTORY	74.6778	VERY SATISFACTORY	96.4000	OUTSTANDING	78.3145	VERY SATISFACTORY

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P.F. I.1.6

I.1. demonstrate skills and competencies in all of the following:

I.1.6. innovativeness and resourcefulness in the different instructional processes;

Documents attached:

- SAMPLE SYLLABUS

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Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

Vision

Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development c citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

- Provision of undergraduate and graduate education which meet international standards of quality and excellence;
- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environ
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resource

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

Objectives

1. Strengthen the Bachelor of Science in Computer Engineering program consistent with global trends;
2. Develop the critical thinking and communication skills of students, giving emphasis to research and extension services;
3. Enhance the competencies of students to evaluate, assess, design and operate safe, effective, economically-efficient and environmental friendly computer-based system;
4. create a conducive teaching and learning atmosphere with emphasis to Bachelor of Science in Computer Engineering faculty and students' growth and academic freedom;

5. establish network with educational institutions, Industries, GO's and NGO's, local and international, which could serve as:
   a. Funding sources and/or partners of researches;
   b. Sources of new technology;
   c. Centers for faculty and students' exchange programs and on-the-job trainings; and
   d. Grantees of scholarship/additional facilities.
6. conduct continuously action researches on the needs of laboratory and other facilities that could be locally produced or innovated using local materials and adapted technolc
7. equip graduates with appropriate knowledge and technical skills imbued with desirable work attitudes and moral values, through enhanced teaching/learning process by multimedia facilities on top of traditional methods;
8. develop faculty as competent mentors and quality researchers through advanced studies and other facets of continuing professional education

Course Title : **OBJECT-ORIENTED PROGRAMMING**

Course Code : **COEN 3444**

Course Credit : **4 units**

Pre-Requisite : **COEN 3340 (DATA STRUCTURES and ALGORITHM ANALYSIS)**
Course Description : This course introduces new techniques and concepts of programming. Java will be use as the programming language and as tool to implement object-ori programming. Consequently, students will acquaint themselves with new syntax that is used to program Java programs. Object oriented programming as one of the classifications of prograr mainly introduces the use of objects, methods, variables, abstraction, interface, polymorphism and other object oriented related topics. This course takes as fact that the students have al learned the basic concepts of programming.

Institutional Learning Outcomes	Program Outcomes	Course Objectives
1. Creative and Critical Thinking	Use of contemporary problem solving in the analysis, design, and evaluation of computer and software systems, including system integration and implementation.	After completing the course, the student must be able to: ✓ Learn the basic syntax and language rul of Java ✓ Understand the different control structure and their functions in programs ✓ Learn the behavior and concepts of obje and classes ✓ Understand the use and the significance encapsulation, polymorphism, inheritanc and abstraction
2. Effective Communication	Communicate effectively with the computing community and with society at large (in local and international scenes) about engineering activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.	
3. Strong Service Orientation	Share expertise in literacy, productivity, and livelihood technology to the adopted community	
4. Community Engagement		
5. Adeptness in the Responsible Use of Technology	Use the techniques, skills and modern computer engineering tools necessary for engineering practice.	
6. Passion to Life-Long Learning	Engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of practice.	
7. High Level of Leadership and Organizational Skills	Knowledge and understanding computer engineering and management principles as a member and a leader in a team, to manage projects and in	

	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	
9. Sense of Nationalism and Global Responsiveness	The broad education necessary to understand the impact of computer engineering solutions in global and societal context.	✓ Use the different data structures and collections available in the Java standar library ✓ Learn how to read from input streams ar write to output streams ✓ Create custom GUI using the Java Swin API ✓ Understand the concept behind single ar multi-threaded applications ✓ Apply the knowledge of object orien programming in writing Java programs

COURSE PLAN

Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
Week 1	Class orientation Discussion of course goals, expected outcomes, course policies and grading system Assigning of Groups and Officers	Familiarize student on Outcome-Based Education Orient the student on the course syllabus, grading system and classroom rules	Orientation Review of the syllabus, learning activities and assessment Getting to know activity	Course Syllabus	None
Week 2	**Object-Oriented Concepts** • Procedural Programming vs. Object-Oriented Programming • Abstract Data Types (ADTs)	Explain the difference between a Procedural Programming and OOP Get familiar with Abstract Data Types Understand the basic concepts of Object Oriented Programming	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article381.html Malik, D. S.	Quiz Hands-on Activity Recitation

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	_http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

	Overloading	and inheritance.			
Week 9	MIDTERM EXAMINATION				
Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
Week 11	**Collections Framework** • Collection • Set • List • Map	Enumerate the different Collection Frameworks Understand the concepts of collection Frameworks	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,* http://www.javafaq.nu/java-article673.html	Peer Programming Recitation Practical Exam Quiz
Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
Week 14	**Thread** • Thread Lifecycle • Thread Synchronization • Critical Sections	Understand the concepts of threading in Java. Create Java program to solve problems that require multi-threading in Java.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article673.html Malik, D. S. *Java Programming*	Short Quiz Machine Problem Program Tracing
Week 15	**Other Java Classes** • Abstract Class • Interfaces	Evaluate Classes used in Java Create an Abstract Class and Interfaces	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html Malik, D. S. *Java Programming*	Oral Participation Hands-On Activity Practical Exam
Week 16	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the grouped students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 17	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 18	FINAL EXAMINATION				

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COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
Lecture: 70% Midterm Grade ✓ Class Standing (60%) 45% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Midterm Examination (40%) Lab: 30% Midterm Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam Midterm Examination (40%) Passing Mark: 75%	Lecture: 70% Final Grade ✓ Class Standing (60%) 40% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Final Examination (40%) Lab: 30% Final Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam ✓ Final Examination (40%) Passing Mark: 75%

REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs

P.F. I.7

I.1. demonstrate skills and competencies in all of the following:

I.1.7. integration of values and work ethics in the teaching-learning process;

Documents attached:

- SAMPLE SYLLABUS

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ANONAS COR. PUREZA STREETS, STA. MESA, MANILA

Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

Vision

Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development of citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

- Provision of undergraduate and graduate education which meet international standards of quality and excellence;
- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environ
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resources

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

Objectives

1. Strengthen the Bachelor of Science in Computer Engineering program consistent with global trends;
2. Develop the critical thinking and communication skills of students, giving emphasis to research and extension services;
3. Enhance the competencies of students to evaluate, assess, design and operate safe, effective, economically-efficient and environmental friendly computer-based system;
4. create a conducive teaching and learning atmosphere with emphasis to Bachelor of Science in Computer Engineering faculty and students' growth and academic freedom;

5. establish network with educational institutions, Industries, GO's and NGO's, local and international, which could serve as:
   a. Funding sources and/or partners of researches;
   b. Sources of new technology;
   c. Centers for faculty and students' exchange programs and on-the-job trainings; and
   d. Grantees of scholarship/additional facilities.
6. conduct continuously action researches on the needs of laboratory and other facilities that could be locally produced or innovated using local materials and adapted technolc
7. equip graduates with appropriate knowledge and technical skills imbued with desirable work attitudes and moral values, through enhanced teaching/learning process by multimedia facilities on top of traditional methods;
8. develop faculty as competent mentors and quality researchers through advanced studies and other facets of continuing professional education

Course Title : **OBJECT-ORIENTED PROGRAMMING**

Course Code : **COEN 3444**

Course Credit : **4 units**

Pre-Requisite : **COEN 3340 (DATA STRUCTURES and ALGORITHM ANALYSIS)**
Course Description : This course introduces new techniques and concepts of programming. Java will be use as the programming language and as tool to implement object-or programming. Consequently, students will acquaint themselves with new syntax that is used to program Java programs. Object oriented programming as one of the classifications of prograr mainly introduces the use of objects, methods, variables, abstraction, interface, polymorphism and other object oriented related topics. This course takes as fact that the students have al learned the basic concepts of programming.

Institutional Learning Outcomes	Program Outcomes	Course Objectives
1. Creative and Critical Thinking	Use of contemporary problem solving in the analysis, design, and evaluation of computer and software systems, including system integration and implementation.	After completing the course, the student must be able to:
2. Effective Communication	Communicate effectively with the computing community and with society at large (in local and international scenes) about engineering activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.	✓ Learn the basic syntax and language rul of Java
3. Strong Service Orientation	Share expertise in literacy, productivity, and livelihood technology to the adopted community	✓ Understand the different control structure and their functions in programs
4. Community Engagement		✓ Learn the behavior and concepts of obje and classes
5. Adeptness in the Responsible Use of Technology	Use the techniques, skills and modern computer engineering tools necessary for engineering practice.	✓ Understand the use and the significance encapsulation, polymorphism, inheritanc and abstraction
6. Passion to Life-Long Learning	Engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of practice.	
7. High Level of Leadership and Organizational Skills	Knowledge and understanding computer engineering and management principles as a member and a leader in a team, to manage projects and in	

	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	
9. Sense of Nationalism and Global Responsiveness	The broad education necessary to understand the impact of computer engineering solutions in global and societal context.	✓ Use the different data structures and collections available in the Java standar library ✓ Learn how to read from input streams ar write to output streams ✓ Create custom GUI using the Java Swin API ✓ Understand the concept behind single ar multi-threaded applications ✓ Apply the knowledge of object orien programming in writing Java programs

COURSE PLAN

Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
Week 1	Class orientation Discussion of course goals, expected outcomes, course policies and grading system Assigning of Groups and Officers	Familiarize student on Outcome-Based Education Orient the student on the course syllabus, grading system and classroom rules	Orientation Review of the syllabus, learning activities and assessment Getting to know activity	Course Syllabus	None
Week 2	**Object-Oriented Concepts** • Procedural Programming vs. Object-Oriented Programming • Abstract Data Types (ADTs)	Explain the difference between a Procedural Programming and OOP Get familiar with Abstract Data Types Understand the basic concepts of Object Oriented Programming	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article381.html Malik, D. S.	Quiz Hands-on Activity Recitation

	• Object-Oriented Programming Concepts			*Java Programming*	
Week 3	**Java Fundamentals - Anatomy of a Basic Java Program** • Comments • Primitive Data Types • Expressions and Operators • Reference Types	Familiarize the Java Language Fundamentals Compile a basic program using Java Syntax	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article386.html Malik, D. S. *Java Programming*	Quiz Hands-on Activity Assignment Recitation
Week 4	**Flow Controls** • Conditional Statements • Looping Statements	Understand how the various flow control statements could be useful in Java programs. Understand the concepts of conditional statements in Java. Create Java programs to solve problems using various Flow Control statements and conditional statements	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,*	Quiz Machine Problem Program Tracing Practical Exam
Week 5	Arrays • array declaration • memory allocation • array initialization • accessing and storing values in arrays • multidimensional array	Understand the concepts of array. Learn how to use array in Java. Create Java programs to solve problems using array.	Lecture/Discussion Program Demonstration Recitation/Board work	Skrien, D. *Object-Oriented Design Using Java*	Quiz Machine Problem Practical Exam Recitation

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

	Overloading	and inheritance.			
Week 9	MIDTERM EXAMINATION				
Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
Week 11	**Collections Framework** • Collection • Set • List • Map	Enumerate the different Collection Frameworks Understand the concepts of collection Frameworks	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article673.html	Peer Programming Recitation Practical Exam Quiz
Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
Week 14	**Thread** • Thread Lifecycle • Thread Synchronization • Critical Sections	Understand the concepts of threading in Java. Create Java program to solve problems that require multi-threading in Java.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article673.html Malik, D. S. *Java Programming*	Short Quiz Machine Problem Program Tracing
Week 15	**Other Java Classes** • Abstract Class • Interfaces	Evaluate Classes used in Java Create an Abstract Class and Interfaces	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html Malik, D. S. *Java Programming*	Oral Participation Hands-On Activity Practical Exam
Week 16	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the grouped students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 17	**APPLICATION PROJECT PRESENTATION**	Culminating activity given to the students to test their mastery of the course by developing application programs utilizing all the theories and concepts acquired	Project Presentation System Walk-through Simulation	*Application Project Documentation* *Developed System*	Project Deliberation
Week 18	FINAL EXAMINATION				

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COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
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REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs

P.F. I.18

I.1. demonstrate skills and competencies in all of the following:

I.1.8. integration of Gender and Development (GAD) activities

Documents attached:

- SAMPLE SYLLABUS

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Gender and Development (GAD) activities were integrated during class discussion. In most cases GAD activities were done in the Computer Engineering Ethics and Laws.

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POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
College of Engineering
Department of Computer Engineering

Vision

Clearing the paths while laying new foundations to transform the Polytechnic University of the Philippines into an epistemic community.

Mission

Reflective of the great emphasis being given by the country's leadership aimed at providing appropriate attention to the alleviation of the plight of the poor, the development
citizens, and of the national economy to become globally competitive, the University shall commit its academic resources and manpower to achieve its goals through:

- Provision of undergraduate and graduate education which meet international standards of quality and excellence;
- Generation and transmission of knowledge in the broad range of disciplines relevant and responsive to the dynamically changing domestic and international environ
- Provision of more equitable access to higher education opportunities to deserving and qualified Filipinos; and
- Optimization, through efficiency and effectiveness, of social, institutional, and individual returns and benefits derived from the utilization of higher education resource

Goals

1. Provide quality education through instruction, advance research and extension services.
2. Produce world-class professionals as potential industry leaders and job providers.
3. Develop and produce facilities through the use of adapted technology and indigenous materials.
4. Maintain, upgrade or improve facilities through the applications of engineering technology.

Objectives

1. Strengthen the Bachelor of Science in Computer Engineering program consistent with global trends;
2. Develop the critical thinking and communication skills of students, giving emphasis to research and extension services;
3. Enhance the competencies of students to evaluate, assess, design and operate safe, effective, economically-efficient and environmental friendly computer-based system;
4. create a conducive teaching and learning atmosphere with emphasis to Bachelor of Science in Computer Engineering faculty and students' growth and academic freedom;

5. establish network with educational institutions, Industries, GO's and NGO's, local and international, which could serve as:
   a. Funding sources and/or partners of researches;
   b. Sources of new technology;
   c. Centers for faculty and students' exchange programs and on-the-job trainings; and
   d. Grantees of scholarship/additional facilities.
6. conduct continuously action researches on the needs of laboratory and other facilities that could be locally produced or innovated using local materials and adapted technolo
7. equip graduates with appropriate knowledge and technical skills imbued with desirable work attitudes and moral values, through enhanced teaching/learning process by multimedia facilities on top of traditional methods;
8. develop faculty as competent mentors and quality researchers through advanced studies and other facets of continuing professional education

Course Title : **OBJECT-ORIENTED PROGRAMMING**

Course Code : **COEN 3444**

Course Credit : **4 units**

Pre-Requisite : **COEN 3340 (DATA STRUCTURES and ALGORITHM ANALYSIS)**

Course Description : This course introduces new techniques and concepts of programming. Java will be use as the programming language and as tool to implement object-or programming. Consequently, students will acquaint themselves with new syntax that is used to program Java programs. Object oriented programming as one of the classifications of prograr mainly introduces the use of objects, methods, variables, abstraction, interface, polymorphism and other object oriented related topics. This course takes as fact that the students have al learned the basic concepts of programming.

Institutional Learning Outcomes	Program Outcomes	Course Objectives
1. Creative and Critical Thinking	Use of contemporary problem solving in the analysis, design, and evaluation of computer and software systems, including system integration and implementation.	After completing the course, the student must be able to:
2. Effective Communication	Communicate effectively with the computing community and with society at large (in local and international scenes) about engineering activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.	✓ Learn the basic syntax and language rule of Java
3. Strong Service Orientation	Share expertise in literacy, productivity, and livelihood technology to the adopted community	✓ Understand the different control structure and their functions in programs
4. Community Engagement		✓ Learn the behavior and concepts of obje and classes
5. Adeptness in the Responsible Use of Technology	Use the techniques, skills and modern computer engineering tools necessary for engineering practice.	✓ Understand the use and the significance encapsulation, polymorphism, inheritanc and abstraction
6. Passion to Life-Long Learning	Engage in life-long learning and an understanding of the need to keep current of the developments in the specific field of practice.	
7. High Level of Leadership and Organizational Skills	Knowledge and understanding computer engineering and management principles as a member and a leader in a team, to manage projects and in	

	multidisciplinary environment.	✓ . Familiarize themselves with error and exception handling code
8. Sense of Personal and Professional Ethics	Recognition of professional, social, and ethical responsibility	
9. Sense of Nationalism and Global Responsiveness	The broad education necessary to understand the impact of computer engineering solutions in global and societal context.	✓ Use the different data structures and collections available in the Java standar library ✓ Learn how to read from input streams ar write to output streams ✓ Create custom GUI using the Java Swin API ✓ Understand the concept behind single ar multi-threaded applications ✓ Apply the knowledge of object orien programming in writing Java programs

COURSE PLAN

Week	Topic	Learning Outcomes	Methodology	Resources	Assessment
Week 1	Class orientation Discussion of course goals, expected outcomes, course policies and grading system Assigning of Groups and Officers	Familiarize student on Outcome-Based Education Orient the student on the course syllabus, grading system and classroom rules	Orientation Review of the syllabus, learning activities and assessment Getting to know activity	Course Syllabus	None
Week 2	**Object-Oriented Concepts** • Procedural Programming vs. Object-Oriented Programming • Abstract Data Types (ADTs)	Explain the difference between a Procedural Programming and OOP Get familiar with Abstract Data Types Understand the basic concepts of Object Oriented Programming	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article381.html Malik, D. S.	Quiz Hands-on Activity Recitation

	• Object-Oriented Programming Concepts			*Java Programming*	
Week 3	**Java Fundamentals - Anatomy of a Basic Java Program** • Comments • Primitive Data Types • Expressions and Operators • Reference Types	Familiarize the Java Language Fundamentals Compile a basic program using Java Syntax	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article386.html Malik, D. S. *Java Programming*	Quiz Hands-on Activity Assignment Recitation
Week 4	**Flow Controls** • Conditional Statements • Looping Statements	Understand how the various flow control statements could be useful in Java programs. Understand the concepts of conditional statements in Java. Create Java programs to solve problems using various Flow Control statements and conditional statements	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming,*	Quiz Machine Problem Program Tracing Practical Exam
Week 5	**Arrays** • array declaration • memory allocation • array initialization • accessing and storing values in arrays • multidimensional array	Understand the concepts of array. Learn how to use array in Java. Create Java programs to solve problems using array.	Lecture/Discussion Program Demonstration Recitation/Board work	Skrien, D. *Object-Oriented Design Using Java*	Quiz Machine Problem Practical Exam Recitation

Week 6	**Objects and Classes in Java** • Classes • Access Modifiers • Methods and Attributes • Constructors • Class Methods and Class Variables	Understand the difference between procedural and object oriented programming. Learn the benefits of OOP. Learn how to define a class. Understand the concepts and significance of UML. Create Java programs to solve problems using array and array functions. Create a UML design of a given program.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article669.html	Quiz Machine Problem Program Tracing Hands-on Activity
Week 7	**Declaring Classes** • Methods • String Manipulations • Encapsulation • Types of Java Methods	Understand the concepts of declaring classes. Understand the java methods. Learn the concepts of string manipulation in Java. Create Java programs to solve problems that require different types of Java method.	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article664.html	Long Quiz Machine Problem Hands-on Activity Practical Exam
Week 8	**Polymorphism and Inheritance** • Importance of Inheritance • Importance of Polymorphism • Methods overriding and	Understand the concepts of polymorphism. Learn different way of using inheritance in Java. Create Java programs to solve problems that require polymorphism	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article422.html	Machine Problem Practical Exam Hands-on Activity

	Overloading	and inheritance.			
Week 9	MIDTERM EXAMINATION				
Week 10	**Exception and Assertion** • Importance of Exceptions in Java • Customizing a Java Exception • Importance of Assertions in Java programs • Writing Java programs that implements exceptions handling and assertions	Understand the significance and the concepts of exception in Java. Learn how to create a customized exception. Understand the concepts of using Assertion in Java. Differentiate the Exception and Assertion. Create Java program to solve problems that require handling exceptions and assertion.	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article562.html	Short Quiz Machine Problem Practical Exam Assignment
Week 11	**Collections Framework** • Collection • Set • List • Map	Enumerate the different Collection Frameworks Understand the concepts of collection Frameworks	Lecture/Discussion Program Demonstration Recitation/Board work	Wu, Thomas C. *An Introduction to Object-Oriented Programming.* http://www.javafaq.nu/java-article673.html	Peer Programming Recitation Practical Exam Quiz
Week 12	**Input and Output Streams** •InputStream/ OutputStream Classes • Reader/Writer Classes • File Handler Classes	Comprehend the applications of I/O streams with Java Apply the Input and Output Streams with Java	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article680.html	Group Work Oral Participation Hands-On Activity Assignment

Week 13	**GUI Development** • AWT Graphical Components • Event Handling • Anonymous Classes	Evaluate the AWT Graphical Components and Event handling Create a Graphical User Interface (GUI)	Lecture/Discussion Program Demonstration Recitation/Board work	http://www.javafaq.nu/java-article672.html Wu, Thomas C. *An Introduction to Object-Oriented Programming*	Long Quiz Machine Problem Practical Exam
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Week 18	FINAL EXAMINATION				

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COURSE GRADING SYSTEM:

Midterm Grade	Final Grade
Lecture: 70% Midterm Grade ✓ Class Standing (60%) 45% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Midterm Examination (40%) Lab: 30% Midterm Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam Midterm Examination (40%) Passing Mark: 75%	Lecture: 70% Final Grade ✓ Class Standing (60%) 40% Long Quiz (Average of 3 Quizzes) 25% Seatwork, Assignments, Recitations (Class Participation) 35% Short Quizzes ✓ Final Examination (40%) Lab: 30% Final Grade ✓ Class Standing (60%) 40% Laboratory Exercises / Machine Problems 35% Project 25% Practical Exam ✓ Final Examination (40%) Passing Mark: 75%

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REVISION HISTORY			
Rev. No.	Description of Change	Approved by	Effective Date
1	Format to OBE	Engr. Julius S. Cansino	SY 2017-2018

Prepared by:

DR. ARVIN R. DE LA CRUZ
Name of Faculty

Noted by:

ENGR. JULIUS S. CANSINO
Chairperson

Approved by:

ENGR. GUILLERMO O. BERNABE
Dean

DR. MANUEL M. MUHI
Vice President for Academic Affairs