

# CEA



COLLEGE OF ENGINEERING  
AND ARCHITECTURE  
MAPÚA MALAYAN COLLEGES MINDANAO

# COLLEGE OF ENGINEERING AND ARCHITECTURE

## PROGRAM CATALOGUE

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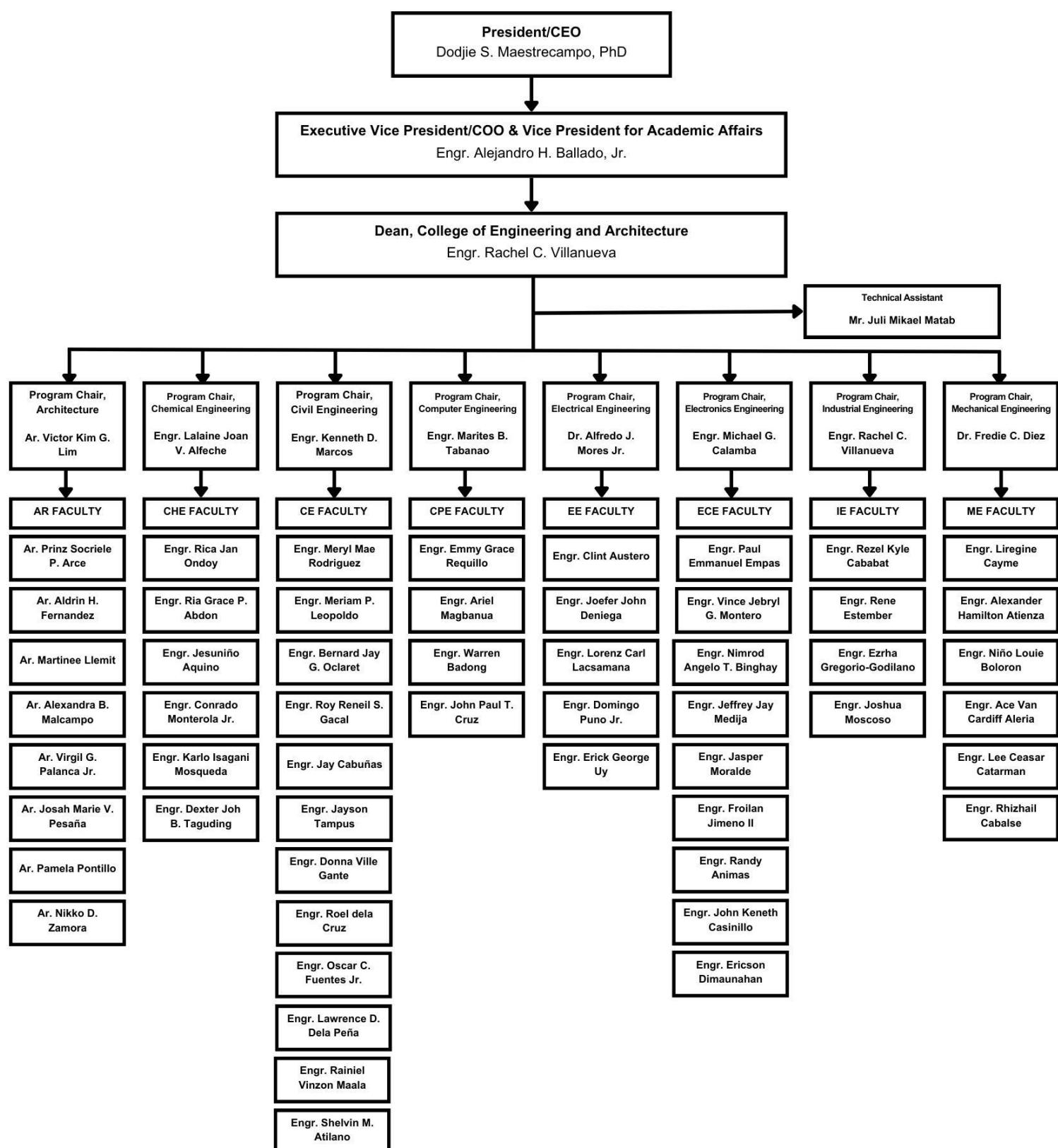
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# ORGANIZATIONAL STRUCTURE



# ABOUT MAPÚA MALAYAN COLLEGES MINDANAO

## THE MISSION OF MAPÚA MALAYAN COLLEGES MINDANAO

1. The institute shall provide a learning environment in order for its students to acquire the attributes that will make them globally competitive & locally in-demand.
2. The institute shall engage in cutting edge and economically viable research, development and innovation that is relevant locally and beyond.
3. The institute shall provide state-of-the-art solutions to problems of industries and communities locally and beyond.

## THE VISION OF MAPÚA MALAYAN COLLEGES MINDANAO

MMCM in being true to its nature has to compete with other schools even as it collaborates with them in the advancement of common interests. Its stance shall be differentiation in the level of its service. Logically, it should go for the attainment of the highest quality standards.

In today's world, it makes sense to reach for global standards. The market for graduates is global. The market of students is global. There is no reason why the market for research and consultancy cannot be global.

Thus, the vision statement:

*Mapúa Malayan Colleges Mindanao shall be a school of global standards and of great significance locally and beyond.*

## OUR LOGO

Mapúa Malayan Colleges Mindanao's logomark was redesigned to represent the level of excellence that MMCM is striving to make itself known for. The goal was to make it scholastic, iconic, and modern.

- The coat of arms or crest is a symbol of legacy, honour, and glory.
- The Mapúa Thinking Man represents the iconic logo of Mapúa University.
- The single helix "M" is a symbol of excellence embedded in our DNA.
- The red laurel is a symbol of victory, achievement, and scholasticism.



## **HISTORY OF MAPÚA MALAYAN COLLEGES MINDANAO**

When the ownership of the Mapúa Institute of Technology was transferred in the year 1999 to the Yuchengco Group of Companies (YGC) under the stewardship of the honourable Ambassador Alfonso T. Yuchengco, great amount of face lifting was undertaken to make the face of Mapúa at par with international standards and great amount of effort was cultivated to further strengthen the academic program of the institution.

In fulfilment of the long-term development plan of Mapúa, land was acquired for its expansion and presence in Davao City, which stands as one of Mindanao's industrial and commercial hubs.

Formerly referred to as Malayan Colleges Mindanao, a Mapúa School (MCM), the groundwork of its campus started in July 2016, formally topped off in 2017, and was ready to start operations the following year in 2018.

In July 2018, then-President of the Philippines Rodrigo Roa Duterte attended the inauguration of MCM to establish its commitment to nurture students and reach their full potential. In the same month, MCM open its gates to its first batch of students (informally referred to as the Alpha Batch), which consisted of one thousand two-hundred eighty (1,280) Senior High School (SHS) and College students.

In August 2020, MCM held its first graduation ceremony for the Alpha Batch of SHS students. However, due to the circumstances surrounding that period, the graduation was fully online.

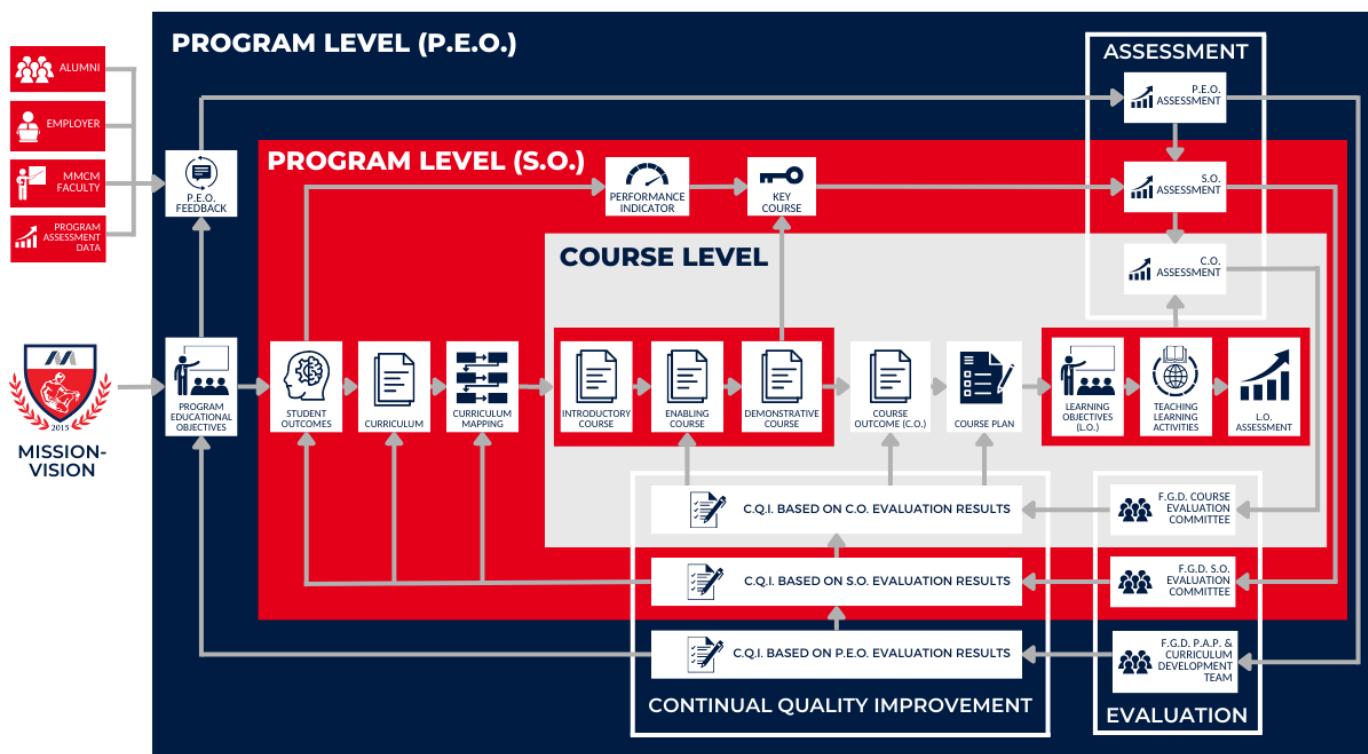
In May 2021, MCM began offering BS Biology and BS Psychology as new programs under the College of Arts and Sciences (CAS). At the same time, MCM launched its Junior High School (JHS) program, offering young students from Grades 7 to 10 with quality Mapúa education.

In April 2022, a major rebranding of MCM was undertaken to further establish the institution's brand of academic and technological education, and to emphasize its Mapúa name. From then onwards, MCM is now referred to as Mapúa Malayan Colleges Mindanao (MMCM).

Today, MMCM offers a total of twenty-one (21) college programs catering to the fields of engineering, architecture, business, information technology, communications, multimedia arts, health sciences, and tourism management, six (6) strands under the Academic, Arts & Design, and Technical-Vocational-Livelihood tracks of MMCM Senior High School, and the Junior High School Curriculum of MMCM Junior High Scho

# MMCM'S OBE FRAMEWORK

## MMCM OBE FRAMEWORK



Mapúa Malayan Colleges Mindanao's (MMCM) Outcomes-Based Education (OBE) framework was developed in relation to the MMCM Value Chain to further give details to the processes relevant to the attainment of the outcomes by the individual programs of MMCM.

The framework exhibits different activities/processes/academic delivery services that were identified to be of primary importance in the attainment of the course outcomes (COs), student outcomes (SOs), and program educational objectives (PEOs) for each of MMCM's program offerings. Thus, the said framework can be viewed as a system of continuous quality improvement (CQI) and evaluation (under different committees) of the different levels of outcomes to be achieved in the different programs of the institution. Consequently, the inherent system of CQI and evaluation of MMCM's OBE framework further reflects a tacit recognition of the institution's relentless pursuit of the improvement and effectiveness of its academic delivery.

# **ABOUT – COLLEGE OF ENGINEERING AND ARCHITECTURE**

The College of Engineering and Architecture (CEA) offers the following programs:

- **Bachelor of Science in Architecture**
- **Bachelor of Science in Chemical Engineering**
- **Bachelor of Science in Civil Engineering**
- **Bachelor of Science in Computer Engineering**
- **Bachelor of Science in Electrical Engineering**
- **Bachelor of Science in Electronics Engineering**
- **Bachelor of Science in Industrial Engineering**
- **Bachelor of Science in Mechanical Engineering**

## **PROGRAM EDUCATIONAL OBJECTIVES AND OUTCOMES**

### **CONTINUOUS QUALITY IMPROVEMENT (CQI) ON THE DELIVERY OF INSTRUCTION**

Mapúa Malayan Colleges Mindanao envisions service excellence as meeting and further exceeding, local and international standards on the delivery of quality education. We have continuously established assurance parameters to guard the process of delivering quality instructions to students, our prime stakeholder. In order to meet the standards of the global community, MMCM ensures that the professional programs are rightfully administered and governed by objectives that holistically mould each student to his intended specialization.

Hence, we align our programs to international standards for global competitiveness; and in this regard, we accordingly align our terminologies as well. The following are the internationally patterned terms that MMCM has adopted and shall be commonly used in our shared understanding of the programs.

### **PROGRAM EDUCATIONAL OBJECTIVES**

Program Educational Objectives or PEOs are statements that describe the career and professional accomplishments that the graduates are expected to achieve after completing the program. These objectives serve as guidelines in designing the curriculum, courses and learning activities of the program in order to prepare the students for the demands of the industry after graduation.

### **STUDENT OUTCOMES**

These are specific statements that describe what students are expected to know and be able to do after the completion of a specific program. These outcomes are program outputs of students that distinguish their amount of learning and their ability to apply such knowledge through milestone projects, research, and other comprehensive assessments.

## **COURSE OBJECTIVES**

Course Objectives are statements that describe the knowledge and skills that the graduates are expected to achieve after completing a specific course. These objectives serve as guidelines in designing activities for the course in order to achieve the desired learning. The attained learning is then needed for the integration of previous and future courses that the student is about to undertake within a specific program.

## **LEARNING OUTCOMES**

A learning outcome is the specification of what a student should learn as the result of a period of specified and supported study. Learning outcomes are concerned with the achievements of the learner, how he understands the topics included in the course, and how he will be able to apply it practically. The output of each activity is used to assess the amount of learning a student has achieved.

# PROGRAM DESCRIPTIONS

## BACHELOR OF SCIENCE IN ARCHITECTURE

BS-AR

Architecture program invest on training fledglings the practice of architecture especially on planning and architectural designing. The program equips learners with both theoretical and practical aspects, and awareness to the many cultural heritage developing their analytic thinking and creativity.

This advances them in becoming responsibly in their field such as interior designer, construction management. Sustainable design and urban design that demands scientific, aesthetic, and orderly coordination. Also, it provides learners contemporary ventures that bridge learners to the world of practice. The program aids learners to meet the local and global standards in the field of architecture.

### PROGRAM EDUCATIONAL OBJECTIVES

1. Ensure mastery of comprehensive architectural knowledge, both in theory and practice, and proficient of skills by the graduates necessary in the global practice or architecture;
2. Promote academic freedom and congenial atmosphere for the advancement of the profession;
3. Infuse a high sense of standard of profession ethics, values, attitudes, and sense of responsibility.
4. Promote self-management learning to develop the architectural practitioner's ability and capacity to analyze facts, to think critically and to express ideas effectively;
5. Impact appreciation of the basic philosophy and the fundamental principles of architecture and understanding the direct relationship between man and his environment in the context of ecological balance and sustainable development; and
6. Engender the importance of history and culture in preservation and promotion of the architectural heritage of the country.

### PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Architecture program is expected to demonstrate:

- a. An ability to apply knowledge of arts, science, and architectural design;
- b. An ability to design and conduct critical analysis and interpret data;
- c. An ability to do architectural design to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, and sustainability;
- d. An ability to function on multi – disciplinary teams;
- e. An ability to identify, formulate, and solve architectural problems;
- f. An ability to communicate effectively;
- g. The broad education necessary to understand the impact of architectural solutions in a global, economic, environmental, and societal context;
- h. A recognition of the need for, and an ability to engage in life – long learning;
- i. A knowledge of contemporary issues; and
- j. An ability to use the techniques, skills and modern tools necessary for architectural practice.

# BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

## BS-ChE

Chemical Engineering program provides an outcome – based pedagogy developing profound skills – set and competencies with excellent understanding of the intricacies of engineering sciences especially in areas related to chemical enterprises.

Its mainspring encapsulates the process of material production and efficient utilization through the application of Mathematics, Chemistry, Physics, Material sciences, and Economics with the integration of technological tools. The program aims to equip learners to meet the local and global standards in the field of chemical engineering.

### PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates of chemical engineering program will have the technical skills and professional qualifications to become competent engineers who can support the industry, academe, or government.
2. Graduates of chemical engineering program will be collaborators and innovators in the field, leading or participating in efforts to address social, technical, ethical and business challenges.
3. Graduates of chemical engineering program will be engaged in life – long learning and professional development

### PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Chemical Engineering program are expected to demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An 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;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;
- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i. A recognition of the need for, and an ability to engage in life-long learning;
- j. A knowledge of contemporary issues;
- k. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice;
- l. Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments; and
- m. Understanding in at least one specialized field of chemical engineering practice.

# BACHELOR OF SCIENCE IN CIVIL ENGINEERING

BS-CE

Civil Engineering targets to establish a strong underpinning of the principal concepts of science in league with mathematical and computational tools to alleviate besetting challenges through development and sustainability.

The cornerstone of the program is learner – centered that augment theoretical knowledge and skills on Mathematics, physical and natural sciences, engineering sciences, and all civil engineering activities. Most importantly, it aims to continuously deliver the highest quality, large – scale technical, scientific, and liberal education to capacitate learners to meet the local and global standards in the field of civil engineering.

## PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates of civil engineering programs will have the technical skills and professional qualifications to become competent engineers who can support the industry, academe or government.
2. Graduates of civil engineering program will be collaborators and innovators in the field, leading or participating in efforts to address social, technical and business challenges.
3. Graduates of civil engineering program will be engaged in life – long and professional development.

## PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Civil Engineering program are expected to demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An 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;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;
- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i. A recognition of the need for, and an ability to engage in life-long learning;
- j. A knowledge of contemporary issues;
- k. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice;
- l. Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments; and
- m. Understanding in at least one specialized field of civil engineering practice.

# BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

BS-CpE

Computer Engineering program centers on the learner's acquisition of knowledge and development of adroitness in computer, and information technology.

The program aids to foster the excellent command on designing, developing, implementing, maintaining, and integrating computer hardware and software, and understanding their interdependence. Thus, the program fundamentally fortifies mastery on computer engineering, its application, and its primal concepts to qualify learners to meet the local and global standards in the field of computer engineering.

## PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates of computer engineering program will have the technical skills and professional qualifications to become competent engineers who can support the industry, academe, or government.
2. Graduates of computer engineering program will be collaborators and innovators in the field, leading or participating in efforts to address social, technical, ethical and business challenges.
3. Graduates of computer engineering program will be engaged in life – long learning and professional development.

## PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Computer Engineering program are expected to demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An 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;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;
- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i. A recognition of the need for, and an ability to engage in life-long learning;
- j. A knowledge of contemporary issues;
- k. An ability to use the 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.

# BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

BS-EE

Electrical Engineering program banks on the implementation of learner – centered education highlighting the study and use of technology and applied sciences concerning electrical occurrences. The program enriches the breadth of knowledge of Mathematics, physical sciences, and information technology, and other allied sciences that advances learners grasp basic theory and concepts.

This leads to the process of conceptualization to the utilization of electrical energy having societal and environmental benefits. With the advent of technology, learners will be provided with laboratory experiences in manoeuvring tools and equipment furthering even more their familiarity of the profession. The program aims to harness the potential of learners to meet the local and global standards in the field of electrical engineering.

## PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates of electrical engineering program will have the technical skills and professional qualifications to become competent engineers who can support the industry, academe, or government.
2. Graduates of electrical engineering program will be collaborators and innovators in the field, leading or participating in efforts to address social, technical, ethical and business challenges.
3. Graduates of electrical engineering program will be engaged in life – long learning and professional development.

## PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Electrical Engineering program are expected to demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An 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;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;
- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i. A recognition of the need for, and an ability to engage in life-long learning;
- j. A knowledge of contemporary issues;
- k. An ability to use the 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.

# BACHELOR OF SCIENCE IN ELECTRONICS ENGINEERING

BS-EcE

Electronics Engineering program provides a groundwork for learners to acquire the elemental scope and nature of practice of electronics and communications engineering. It includes an array of activities on telecommunications, information and communications technology (ICT), computers and their networking, hardware and software development and application.

Moreover, its paradigm incorporates device physics, device operation, design an integrated circuits, communication and network system, audio and video processing, robotics, electromagnetic and antenna systems, and electronic materials. The program commits to gear up learners to meet the local and global standards in the field of electronics engineering.

## PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates of electronic engineering program will have the technical skills and professional qualifications to become competent engineers who can support the industry, academe, or government.
2. Graduates of electronic engineering program will be collaborators and innovators in the field, leading or participating in efforts to address social, technical, ethical and business challenges.
3. Graduates of electronic engineering program will be engaged in life – long learning and professional development.

## PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Electronics Engineering program are expected to demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An 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;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;
- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i. A recognition of the need for, and an ability to engage in life-long learning;
- j. A knowledge of contemporary issues;
- k. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice;
- l. Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments; and
- m. Understanding in at least one specialized field of electronics engineering practice.

# BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

BS-IE

Industrial Engineering program focuses on the optimal mastery of the complex processing in crafting, improving, and installing products and integrated systems of people, information, equipment, and energy.

With outcomes – based education, it gears up learner's knowledge and competencies in Mathematics, physical and social sciences in conjunction with the principles and methods of engineering analysis and design to empirically assess outcomes from varied systems. Also, the program advances learners to potentially establish iron – like foundation in both manufacturing and service industries. This hones learners to qualify in the local and global standards in the field of industrial engineering.

## PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates of industrial engineering program will have the technical skills and professional qualifications to become competent engineers who can support the industry, academe, or government.
2. Graduates of electronic engineering program will be collaborators and innovators in the field, leading or participating in efforts to address social, technical, ethical and business challenges.
3. Graduates of electronic engineering program will be engaged in life – long learning and professional development.

## PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Industrial Engineering program are expected to demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An 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;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;
- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i. A recognition of the need for, and an ability to engage in life-long learning;
- j. A knowledge of contemporary issues;
- k. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice;
- l. Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments; and
- m. Ability to design, develop, implement and improve integrated systems that include people, materials, information, equipment and energy.

# BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

## BS-ME

Mechanical Engineering program commits to optimize the proficiency in designing, building, and improving ventures that require mechanical force work and energy founded with basic and applied sciences. Learners will be engaged in various mechanical undertakings such as space vehicles, gadgets, power plants, smart mechanisms and robots, transportation vehicles, and appliances.

With pursuits on the efficient transportation of energy, learners will be further exposed to conversion of thermal energy and chemical energy to mechanical work through the use of the state – of –the –art equipment. Moreover, the program prepares future mechanical engineers to produce products with structural integrity in order to meet the local and global standards in the field of mechanical engineering.

### PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates of mechanical engineering program will have the technical skills and professional qualifications to become competent engineers who can support the industry, academe, or government.
2. Graduates of mechanical engineering program will be collaborators and innovators in the field, leading or participating in efforts to address social, technical, ethical and business challenges.
3. Graduates of mechanical engineering program will be engaged in life – long learning and professional development.

### PROGRAM OUTCOMES

Graduates of the Bachelor of Science in Mechanical Engineering program are expected to demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering;
- b. An ability to design and conduct experiments, as well as to analyze and interpret data;
- c. An 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;
- d. An ability to function on multi-disciplinary teams;
- e. An ability to identify, formulate, and solve engineering problems;
- f. An understanding of professional and ethical responsibility;
- g. An ability to communicate effectively;
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i. A recognition of the need for, and an ability to engage in life-long learning;
- j. A knowledge of contemporary issues;
- k. An ability to use the 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.

# PROGRAM CURRICULA

## BACHELOR OF SCIENCE IN ARCHITECTURE

*Curriculum based on [relevant CHED CMO], applicable to freshmen beginning school year 2023-2024*

### FIRST YEAR

1 <sup>st</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	1	AR001	ARCHITECTURE ORIENTATION	1.25	---	1.0	None	None	
1	1	AR110P	ARCHITECTURE DESIGN 1: INTRO TO DESIGN (Paired)	1.25	3.75	2.0	None	None	
1	1	AR110P	ARCHITECTURAL VISUAL COMMUNICATION 1: GRAPHICS 1 (PAIRED)	1.25	7.50	3.0	None	None	
1	1	AR120P	THEORY OF ARCHITECTURE 1 (PAIRED)	1.25	3.50	2.0	None	None	
1	1	AR150	HISTORY OF ARCHITECTURE 1	2.50	---	2.0	None	None	
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	---	3.0	None	None	
1	1	HUM034	ART APPRECIATION	3.75	---	3.0	None	None	
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	2.50	---	(3.0)	None	None	
1	1	VE021	LIFE COACHING SERIES 1	1.25	---	(2.0)	None	None	
<b>TOTAL</b>				<b>18.75</b>	<b>15.0</b>	<b>16.0</b>	None	None	

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	2	AR101P-1	ARCHITECTURAL DESIGN 2: CREATIVE DESIGN FUNDAMENTALS (Paired)	1.25	3.75	2.0	AR100P, AR120P	None	
1	2	AR111P	ARCHITECTURAL VISUAL COMMUNICATIONS 3: GRAPHICS 2 (Paired)	1.25	7.50	3.0	AR110P	None	
1	2	AR112P	ARCHITECTURAL VISUAL COMMUNICATIONS 2: VISUAL TECHNIQUES 1 (Paired)	1.25	3.75	2.0	None	None	
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	---	3.0	None	None	
1	2	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	---	3.0	None	None	
1	2	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	---	3.0	None	None	
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (Paired)	2.50	3.75	(3.0)	NSTP010	None	
1	2	VE022	LIFE COACHING SERIES 2	1.25	---	(1.0)	VE021	None	
<b>TOTAL</b>				<b>18.75</b>	<b>18.75</b>	<b>16.0</b>			

3rd Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	3	AR113P	ARCHITECTURAL VISUAL COMMUNICATIONS 4: VISUAL TECHNIQUES 2 (PAIRED)	1.25	3.75	2.0	AR112P	None	
1	3	AR121	THEORY OF ARCHITECTURE 2	2.50	-	2.0	AR120P	None	
1	3	AR122P-1	ARCHITECTURAL INTERIORS (PAIRED)	1.25	3.75	2.0	AR120P	None	
1	3	MATH021	COLLEGE MATHEMATICS	3.75	-	3.0	None	None	
1	3	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None	
1	3	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None	
1	3	PE001	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1	-	2.50	2.0	None	None	
1	3	VE023	LIFE COACHING SERIES 3	1.25	-	(1.0)	VE022	None	
<b>TOTAL</b>				<b>17.50</b>	<b>10.00</b>	<b>17.0</b>			

## SECOND YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	1	AR114P	ARCHITECTURAL VISUAL COMMUNICATIONS 5: VISUAL TECHNIQUES 3 (PAIRED)	1.25	3.75	2.0	AR113P	None
2	1	AR130	BUILDING TECHNOLOGY 1: BUILDING MATERIALS	3.75	-	3.0	None	None
2	1	AR140P	BUILDING UTILITIES 1: PLUMBING AND SANITARY SYSTEMS (PAIRED)	2.50	3.75	3.0	None	None
2	1	AR151	HISTORY OF ARCHITECTURE 2	2.50	-	2.0	AR150	None
2	1	AR801E	THEORY OF ARCHITECTURE EXIT EXAM	-	-	0.0	AR121	None
2	1	GEELEC01	GE ELECTIVE 1	3.75	-	3.0	None	None
2	1	MATH014-1	SOLID MENSURATION	2.50	-	2.0	MATH021	None
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None
<b>TOTAL</b>				<b>16.25</b>	<b>10.0</b>	<b>17.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	2	AR102P-1	ARCHITECTURAL DESIGN 3: CREATIVE DESIGN IN ARCHITECTURAL INTERIORS (PAIRED)	1.25	7.50	3.0	AR101P-1, AR121, AR122P-1	None
2	2	AR131P-1	BUILDING TECHNOLOGY 2: CONSTRUCTION DRAWINGS IN WOOD STEEL AND CONCRETE (1 STOREY BUILDING) (P)	2.50	3.75	3.0	AR130, AR140P	None
2	2	AR152	HISTORY OF ARCHITECTURE 3	2.50	-	2.0	AR151	None
2	2	AR170	TROPICAL DESIGN	2.50	-	2.0	None	None
2	2	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None
2	2	SS023	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>16.25</b>	<b>13.75</b>	<b>18.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	3	AR103P-1	ARCHITECTURAL DESIGN 4: SPACE PLANNING 1 (PAIRED)	1.25	7.50	3.0	AR102P-1	None
2	3	AR153	HISTORY OF ARCHITECTURE 4	2.50	-	2.0	AR152	None
2	3	DRAW041P	COMPUTER-AIDED DESIGN AND DRAFTING FOR ARCHITECTURE 1 (PAIRED)	1.25	3.75	2.0	AR114P	None
2	3	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None
2	3	MATH027-1	DIFFERENTIAL AND INTEGRAL CALCULUS	3.75	-	3.0	MATH021	None
2	3	PE004	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4	-	2.50	2.0	PE001, PE002	None
2	3	SS038	THE LIFE AND WORKS OF JOSE RIZAL	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>16.25</b>	<b>13.75</b>	<b>18.0</b>		

## THIRD YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	1	AR104P-1	ARCHITECTURAL DESIGN 5: SPACE PLANNING 2 (PAIRED)	1.25	11.25	4.0	AR103P-1	None
3	1	AR132P-1	BUILDING TECHNOLOGY 3: CONSTRUCTION DRAWINGS IN WOOD STEEL AND CONCRETE (2 STOREY BUILDING) (P)	2.50	3.75	3.0	AR131P-1, AR140P	None
3	1	AR802E	HISTORY OF ARCHITECTURE EXIT EXAM	-	-	0.0	AR153	None
3	1	CE101-4	SURVEYING	2.50	-	2.0	MATH014-1	None
3	1	CE101F-4	SURVEYING (FIELD)	-	3.75	1.0	MATH014-1	CE101-4
3	1	DRAW042P	COMPUTER-AIDED DESIGN AND DRAFTING FOR ARCHITECTURE 2 (PAIRED)	1.25	3.75	2.0	DRAW041P	None
3	1	GEELEC02	GE ELECTIVE 2	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>11.25</b>	<b>22.50</b>	<b>15.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	2	AR133P-1	BUILDING TECHNOLOGY 4: SPECIFICATION WRITING AND QUANTITY SURVEYING (PAIRED)	2.50	3.75	3.0	AR132P-1	None
3	2	AR141P	BUILDING UTILITIES 2: ELECTRICAL, ELECTRONICS AND MECHANICAL SYSTEMS (PAIRED)	2.50	3.75	3.0	AR140P	None
3	2	AR181	PROFESSIONAL PRACTICE 1: LAWS AFFECTING THE PRACTICE OF ARCHITECTURE	3.75	-	3.0	None	None
3	2	HUM039	ETHICS	3.75	-	3.0	None	None
3	2	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>16.25</b>	<b>7.50</b>	<b>15.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	3	AR105P-1	ARCHITECTURAL DESIGN 6: SITE DEVELOPMENT PLANNING AND LANDSCAPING (PAIRED)	1.25	11.25	4.0	AR104P-1	None
3	3	AR134P-1	BUILDING TECHNOLOGY 5: ALTERNATIVE BUILDING CONSTRUCTION SYSTEMS (PAIRED)	2.50	3.75	3.0	AR133P-1	None
3	3	AR161-1	PLANNING 1: SITE PLANNING AND LANDSCAPE ARCHITECTURE	3.75	-	3.0	CE101-4, CE101F-4, AR170	None
3	3	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None
3	3	MEC101-3	STATICS OF RIGID BODIES FOR AR	3.75	-	3.0	MATH027-1	None
<b>TOTAL</b>				<b>11.25</b>	<b>18.75</b>	<b>14.0</b>		

## FOURTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	1	AR106P-1	ARCHITECTURAL DESIGN 7: COMMUNITY ARCHITECTURE AND URBAN DESIGN (PAIRED)	1.25	15.00	5.0	AR105P-1	None
4	1	AR142P	BUILDING UTILITIES 3: ACOUSTICS AND LIGHTING SYSTEMS (PAIRED)	2.50	3.75	3.0	AR141P	None
4	1	AR162-1	PLANNING 2: FUNDAMENTALS OF URBAN DESIGN AND COMMUNITY ARCHITECTURE	3.75	-	3.0	AR161-1	None
4	1	CE104-3	MECHANICS OF DEFORMABLE BODIES FOR AR	3.75	-	3.0	MEC101-3	None
4	1	CPE127	ARTIFICIAL INTELLIGENCE FOR AR	2.50	-	2.0	DS100L	None
<b>TOTAL</b>				<b>13.75</b>	<b>18.75</b>	<b>16.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	2	AR107P-1	ARCHITECTURAL DESIGN 8: DESIGN OF COMPLEX STRUCTURES (PAIRED)	1.25	15.00	5.0	AR106P-1	None
4	2	AR135-1	THEORY OF STRUCTURES	3.75	-	3.0	CE104-3	None
4	2	AR803E	BUILDING TECHNOLOGY & UTILITIES EXIT EXAM	-	-	0.0	AR142P, AR134P-1	None
4	2	AR171-1	HOUSING	2.50	-	2.0	AR162-1, AR181	None
4	2	AR182	PROFESSIONAL PRACTICE 2: ADMINISTERING THE REGULAR SERVICES OF THE ARCHITECT	3.75	-	3.0	AR181	None
4	2	ARELEC01	AR ELECTIVE 1	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>15.00</b>	<b>15.00</b>	<b>16.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	3	AR136-1	STEEL AND TIMBER DESIGN	3.75	-	3.0	AR135-1	None
4	3	AR163-1	PLANNING 3: INTRODUCTION TO URBAN AND REGIONAL PLANNING	3.75	-	3.0	AR162-1	None
4	3	AR183	PROFESSIONAL PRACTICE 3: GLOBAL PRACTICE FOR THE 21ST CENTURY	3.75	-	3.0	AR182	None
4	3	ARELEC02	AR ELECTIVE 2	3.75	-	3.0	None	None
4	3	RES101-1	METHODS OF RESEARCH FOR AR	3.75	-	3.0	ENG024, AR107P-1	None
<b>TOTAL</b>				<b>18.75</b>	<b>0</b>	<b>15.0</b>		

## FIFTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
5	1	AR137-1	ARCHITECTURAL STRUCTURES	3.75	-	3.0	AR136-1	None
5	1	AR804E	PLANNING AND PROFESSIONAL PRACTICE EXIT EXAM	-	-	0.0	AR163-1, AR171-1, AR183	None
5	1	AR184	BUSINESS MANAGEMENT AND APPLICATION FOR ARCHITECTS 1	3.75	-	3.0	AR183	None
5	1	AR200P-2	ARCHITECTURE DESIGN 9: THESIS RESEARCH WRITING (PAIRED)	1.25	15.00	5.0	RES101-1	None
5	1	ARELEC03	AR ELECTIVE 3	3.75	-	3.0	None	None
5	1	AR198-3	AR CORRELATION 1		6.00	(1.0)	MATH027-1, CE104-3, AR801, AR802	None
<b>TOTAL</b>				<b>12.50</b>	<b>21.00</b>	<b>14.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
5	2	AR185	BUSINESS MANAGEMENT AND APPLICATION FOR ARCHITECTS 2	3.75	-	3.0	AR183	None
5	2	AR200P-3	ARCHITECTURE DESIGN 10: THESIS RESEARCH APPLICATION (PAIRED)	1.25	15.00	5.0	AR200P-2	None
5	2	ARELEC04	AR ELECTIVE 4	3.75	-	3.0	None	None
5	2	AR198-4	AR CORRELATION 2		6.00	(1.0)	AR198, AR107P-1, AR137-1, AR803, AR804	None
<b>TOTAL</b>				<b>8.75</b>	<b>21.00</b>	<b>11.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
5	3	AR191F	ARCHITECTURE SEMINAR	-	3.75	1.0	AR107P-1, AR137-1	None
5	3	AR199R-1	AR PRACTICUM	-	18.00	3.0	AR105P-1, HUM039	None
5	3	SGE101	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None
<b>TOTAL</b>				<b>0</b>	<b>21.75</b>	<b>4.00</b>		

# BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Curriculum based on CMO No. 91 Series of 2017, applicable to freshmen beginning school year 2023-2024

## FIRST YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	1	CHE100	CHEMICAL ENGINEERING ORIENTATION	1.25	-	1.0	None	None
1	1	CHM031	CHEMISTRY FOR ENGINEERS	3.75	-	3.0	None	None
1	1	CHM031L	CHEMISTRY FOR ENGINEERS (LABORATORY)	-	3.75	1.0	None	CHM031
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	-	3.0	None	None
1	1	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None
1	1	MATH031	MATHEMATICS FOR ENGINEERS	3.75	-	3.0	None	None
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	2.50	-	(3.0)	None	None
1	1	VE021	LIFE COACHING SERIES 1	1.25	-	(1.0)	None	None
<b>TOTAL</b>				<b>20.00</b>	<b>3.75</b>	<b>14.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	2	DRAW021W	ENGINEERING DRAWING 1	-	3.75	1.0	None	None
1	2	CHM131	ANALYTICAL CHEMISTRY 1	2.50	-	2.0	CHM031	None
1	2	CHM131L	ANALYTICAL CHEMISTRY 1 (LABORATORY)	-	3.75	1.0	CHM031L	CHM131
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	-	3.0	None	None
1	2	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	-	3.0	None	None
1	2	MATH041	ENGINEERING CALCULUS 1	5.00	-	4.0	MATH031	None
1	2	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)	2.50	3.75	(3.0)	NSTP010	None
<b>TOTAL</b>				<b>22.50</b>	<b>11.25</b>	<b>17.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	3	DRAW023L-1	COMPUTER-AIDED DRAFTING (LABORATORY)	-	3.75	1.0	DRAW021W	None
1	3	CHM132	ANALYTICAL CHEMISTRY 2	2.50	-	2.0	CHM131	None
1	3	CHM141	ORGANIC CHEMISTRY 1	2.50	-	2.0	CHM131	None
1	3	CHM141L	ORGANIC CHEMISTRY 1 (LABORATORY)	-	3.75	1.0	CHM131L	CHM131
1	3	MATH042	ENGINEERING CALCULUS 2	5.00	-	4.0	MATH041	None
1	3	PHY035	PHYSICS FOR ENGINEERS	5.00	-	4.0	MATH041	None
1	3	PHY035L	PHYSICS FOR ENGINEERS (LABORATORY)	-	3.75	1.0	MATH041	PHY035
1	3	GEELEC01	GE ELECTIVE 1	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>20.00</b>	<b>13.75</b>	<b>20.0</b>		

## SECOND YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	1	CHM142	ORGANIC CHEMISTRY 2	2.50	-	2.0	CHM141	None
2	1	CHM142L	ORGANIC CHEMISTRY 2 (LABORATORY)	-	3.75	1.0	CHM141L	CHM141
2	1	ECE121L	COMPUTER-AIDED CALCULATIONS (LABORATORY)	-	3.75	1.0	None	None
2	1	HUM039	ETHICS	3.75	-	3.0	None	None
2	1	IE101-1	ENGINEERING DATA ANALYSIS	3.75	-	3.0	MATH041	None
2	1	MATH056	DIFFERENTIAL EQUATIONS	3.75	-	3.0	MATH042	None
2	1	MEC100-1	ENGINEERING MECHANICS	3.75	-	3.0	MATH042, PHY035	None
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None
2	1	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>21.25</b>	<b>10.00</b>	<b>21.0</b>		

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
2	2	CHE111C	CHE CALCULATIONS 1 (COMPUTATIONAL)	2.50	3.75	3.0	CHM031	None	
2	2	CHE157-1	PHYSICAL CHEMISTRY FOR ENGINEERS 1	2.50	-	2.0	MATH042, CHM133	None	
2	2	CHE157L-1	PHYSICAL CHEMISTRY FOR ENGINEERS 1 (LABORATORY)	-	3.75	1.0	MATH042, CHM133	CHE157-1	
2	2	CPE001L	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)	-	3.75	1.0	None	None	
2	2	EECO102	ENGINEERING ECONOMY	3.75	-	3.0	IE101-1	None	
2	2	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None	
2	2	MATH116	ADVANCED ENGINEERING MATHEMATICS	3.75	-	3.0	MATH056	None	
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None	
<b>TOTAL</b>				<b>16.25</b>	<b>13.75</b>	<b>18.0</b>			

3 <sup>rd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
2	3	ACT099	ACCOUNTING FOR NON-ACCOUNTANT	1.25	-	1.0	None	None	
2	3	CHE130C-1	MOMENTUM TRANSFER (COMPUTATIONAL)	2.50	3.75	3.0	CHE111C, MATH056	None	
2	3	CHE158-1	PHYSICAL CHEMISTRY FOR ENGINEERS 2	2.50	-	2.0	CHE157-1	None	
2	3	CHE158L-1	PHYSICAL CHEMISTRY FOR ENGINEERS 2 (LABORATORY)	-	3.75	1.0	CHE157L-1	CHE158-1	
2	3	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None	
2	3	EMGT100	ENGINEERING MANAGEMENT	2.50	-	2.0	ECCO102	None	
2	3	EMGT100L	PROJECT MANAGEMENT (LABORATORY)	-	3.75	1.0	ECCO102	None	
2	3	GEELEC02	GE ELECTIVE 2	3.75	-	3.0	None	None	
2	3	MATH161	NUMERICAL METHODS	3.75	-	3.0	MATH116	None	
2	3	MATH161L	NUMERICAL METHODS (LABORATORY)	-	3.75	1.0	MATH116, ECE121L	MATH161	
2	3	MATH800E	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	MATH116, ECE121L	None	
<b>TOTAL</b>				<b>16.25</b>	<b>21.25</b>	<b>20.0</b>			

## THIRD YEAR

1 <sup>st</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
3	1	CHE123C-1	CHEMICAL ENGINEERING THERMODYNAMICS (COMPUTATIONAL)	2.50	3.75	3.0	CHE157-1, CHE111C	None	
3	1	CHE133C-1	PARTICLE TECHNOLOGY (COMPUTATIONAL)	2.50	3.75	3.0	CHE130C-1	None	
3	1	CHE134C-1	HEAT AND MASS TRANSFER 1 (COMPUTATIONAL)	3.75	3.75	4.0	CHE130C-1	None	
3	1	EE105-1	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	2.50	-	2.0	PHY035	None	
3	1	EE105L-1	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (LAB)	-	3.75	1.0	PHY035L	EE105-1	
3	1	CHE801E	ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	CHM031, PHY035, ECCO102	None	
3	1	TEC100-2	TECHNOPRENEURSHIP	3.75	-	3.0	EMGT100, ACT099	None	
3	1	EENV102	ENVIRONMENTAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None	
<b>TOTAL</b>				<b>18.75</b>	<b>15.00</b>	<b>19.0</b>			

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
3	2	CHE124C-1	SOLUTIONS THERMODYNAMICS (COMPUTATIONAL)	2.50	3.75	3.0	CHE123C-1, MATH116	None	
3	2	CHE150	CHEMICAL PROCESS INDUSTRIES	3.75	-	3.0	CHM142	None	
3	2	CHE172C	CHEMICAL REACTION ENGINEERING (COMPUTATIONAL)	3.75	3.75	4.0	CHE158-1, MATH116, CHE134C-1	None	
3	2	CHE802E	PHYSICAL AND CHEMICAL PRINCIPLES EXIT EXAM	-	-	0.0	CHE158-1	CHE172C	
3	2	CPE126	ARTIFICIAL INTELLIGENCE	2.50	-	2.0	DS100L	None	
3	2	CPE126L	ARTIFICIAL INTELLIGENCE (LABORATORY)	-	3.75	1.0	DS100L	None	
3	2	RES101	METHODS OF RESEARCH	3.75	-	3.0	IE101-1, ENG024	None	
3	2	SS038	THE LIFE AND WORKS OF JOSE RIZAL	3.75	-	3.0	None	None	
<b>TOTAL</b>				<b>20.00</b>	<b>11.25</b>	<b>19.0</b>			

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	3	CAP200D	CAPSTONE DESIGN / THESIS 1 (LABORATORY)	-	3.75	1.0	RES101	None
3	3	CHE131L-1	CHEMICAL ENGINEERING 1 (LABORATORY)	-	3.75	1.0	CHE134C-1	None
3	3	CHE135C-1	SEPARATION PROCESSES (COMPUTATIONAL)	2.50	3.75	3.0	CHE123C-1, CHE134C-1	None
3	3	CHEELEC01	CHE ELECTIVE 1	3.75	-	3.0	None	None
3	3	HUM034	ART APPRECIATION	3.75	-	3.0	None	None
3	3	MSE102	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None
3	3	SS023	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None
3	3	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>21.25</b>	<b>11.25</b>	<b>20.0</b>		

## FOURTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	1	CAP200D-1	CAPSTONE DESIGN / THESIS 2 (LABORATORY)	-	3.75	1.0	CAP200D	None
4	1	CHE132L-1	CHEMICAL ENGINEERING 2 (LABORATORY)	-	3.75	1.0	CHE131L-1	None
4	1	CHE142C-1	CHEMICAL ENGINEERING DESIGN 1 (COMPUTATIONAL)	1.25	3.75	2.0	CHE133C-1, CHE150-1, CHE172C	None
4	1	CHE180P-1	PROCESS DYNAMICS AND CONTROL (LABORATORY)	2.50	3.75	3.0	MATH116, ECE121L	None
4	1	CHE182-1	BIOCHEMICAL ENGINEERING	3.75	-	3.0	CHE172C, CHM142	None
4	1	CHE184L-1	COMPUTER APPLICATIONS IN CHE (LABORATORY)	-	3.75	1.0	CHE135C-1, CPE001L	None
4	1	CHE185-1	INDUSTRIAL WASTE MANAGEMENT AND CONTROL	3.75	-	3.0	EENV102, CHE133C-1	None
4	1	CHE803E	CHEMICAL ENGINEERING PRINCIPLES EXIT EXAM	-	-	0.0	CHE133C-1, CHE172C, CHE143C-1, CHE181	None
4	1	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None
4	1	CHE198-3	CHE CORRELATION 1	-	7.5	(1.0)	MATH800E, CHE801E	None
<b>TOTAL</b>				<b>15.00</b>	<b>24.75</b>	<b>17.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	2	CAP200D-2	CAPSTONE DESIGN / THESIS 3 (LABORATORY)	-	3.75	1.0	CAP200D-1	None
4	2	CHE143C-1	CHEMICAL ENGINEERING DESIGN 2 (COMPUTATIONAL)	2.50	3.75	3.0	CHE142C-1	None
4	2	CHE150L-1	CHEMICAL PROCESS (LABORATORY)	-	3.75	1.0	CHE142C-1	None
4	2	CHE181	CHE LAWS AND ETHICS	1.25	-	1.0	HUM039	None
4	2	CHE103	PROCESS SAFETY	1.25	-	1.0	CHM031	None
4	2	CHEELEC02	CHE ELECTIVE 2	3.75	-	3.0	None	None
4	2	CHEELEC03	CHE ELECTIVE 3	3.75	-	3.0	None	None
4	2	CHE198-4	CHE CORRELATION 2	-	7.5	(1.0)	CHE802E, CHE803E, CHE182-1	None
<b>TOTAL</b>				<b>12.50</b>	<b>17.25</b>	<b>13.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	3	CHE191F-1	CHE FIELD TRIPS AND SEMINARS (FIELD)	-	3.75	1.0	CHE172C	None
4	3	CHE199R-1	CHE PRACTICUM	-	18.00	3.0	CHE130C-1, HUM039	None
4	3	SAF102	BASIC OCCUPATIONAL SAFETY AND HEALTH	3.75	-	3.0	CHM031	None
4	3	SGE101	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None
<b>TOTAL</b>				<b>3.75</b>	<b>21.75</b>	<b>7.00</b>		

# BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Curriculum based on [relevant CHED CMO], applicable to freshmen beginning school year 2023-2024

## FIRST YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	1	CE100	CIVIL ENGINEERING ORIENTATION	2.50	-	2.0	None	None
1	1	DRAW021W	ENGINEERING DRAWING 1	-	3.75	1.0	None	None
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	-	3.0	None	None
1	1	MATH031	MATHEMATICS FOR ENGINEERS	3.75	-	3.0	None	None
1	1	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	-	3.0	None	None
1	1	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	3.75	-	(3.0)	None	None
1	1	VE021	LIFE COACHING SERIES 1	1.25	-	(1.0)	None	None
<b>TOTAL</b>				<b>22.50</b>	<b>3.75</b>	<b>15.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	2	DRAW023L-1	COMPUTER-AIDED DRAFTING (LABORATORY)	-	3.75	1.0	DRAW021W	None
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	-	3.0	None	None
1	2	MATH041	ENGINEERING CALCULUS 1	5.00	-	4.0	MATH031	None
1	2	CHM031	CHEMISTRY FOR ENGINEERS	3.75	-	3.0	None	None
1	2	CHM031L	CHEMISTRY FOR ENGINEERS (LABORATORY)	-	3.75	1.0	None	CHM031
1	2	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)	2.50	3.75	(3.0)	NSTP010	None
1	2	VE022	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE021	None
<b>TOTAL</b>				<b>20.00</b>	<b>11.25</b>	<b>15.0</b>		

3rd Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	3	CPE001L	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)	-	3.75	1.0	None	None
1	3	HUM039	ETHICS	3.75	-	3.0	None	None
1	3	IE101-1	ENGINEERING DATA ANALYSIS	3.75	-	3.0	MATH041	None
1	3	MATH042	ENGINEERING CALCULUS 2	5.00	-	4.0	MATH041	None
1	3	PHY035	PHYSICS FOR ENGINEERS	5.00	-	4.0	MATH041	None
1	3	PHY035L	PHYSICS FOR ENGINEERS (LABORATORY)	-	3.75	1.0	MATH041	PHY035
1	3	PE001	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1	-	2.50	2.0	None	None
1	3	VE023	LIFE COACHING SERIES 3	1.25	-	(1.0)	VE022	None
<b>TOTAL</b>				<b>18.75</b>	<b>10.00</b>	<b>18.0</b>		

## SECOND YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	1	CPE002L	COMPUTER FUNDAMENTALS AND PROGRAMMING 2 (LAB)	-	3.75	1.0	CPE001L	None
2	1	ECE121L	COMPUTER-AIDED CALCULATIONS (LABORATORY)	-	3.75	1.0	None	None
2	1	EE104-4	ENGINEERING UTILITIES 1	3.75	-	3.0	PHY035, PHY035L	None
2	1	EE104L-4	ENGINEERING UTILITIES 1 (LABORATORY)	-	3.75	1.0	PHY035, PHY035L	EE104-4
2	1	ECCO102	ENGINEERING ECONOMY	3.75	-	3.0	IE101-1	None
2	1	MATH056	DIFFERENTIAL EQUATIONS	3.75	-	3.0	MATH042	None
2	1	MEC101-2	STATICS OF RIGID BODIES	3.75	-	3.0	MATH042, PHY035	None
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None
2	1	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>18.75</b>	<b>13.75</b>	<b>20.0</b>		

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
2	2	CE011	GEOLOGY FOR CIVIL ENGINEERS	2.50	-	2.0	CHM031	None	
2	2	CE101-2	SURVEYING 1	2.75	-	2.0	DRAW021W, MATH041	None	
2	2	CE101F-2	SURVEYING 1 (FIELD)	-	3.75	1.0	DRAW021W, MATH041	CE101-2	
2	2	EENV102	ENVIRONMENTAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None	
2	2	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None	
2	2	EMGT100	ENGINEERING MANAGEMENT	2.50	-	2.0	EECO102	None	
2	2	MATH116	ADVANCED ENGINEERING MATHEMATICS	3.75	-	3.0	MATH056	None	
2	2	MEC102-1	DYNAMICS OF RIGID BODIES	2.50	-	2.0	MEC101-2	None	
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None	
<b>TOTAL</b>				<b>21.50</b>	<b>6.25</b>	<b>20.0</b>			

3 <sup>rd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
2	3	ACT099	ACCOUNTING FOR NON-ACCOUNTANT	1.25	-	1.0	None	None	
2	3	CE101-3	SURVEYING 2	2.50	-	2.0	CE101-2	None	
2	3	CE101F-3	SURVEYING 2 (FIELD)	-	3.75	1.0	CE101-2, CE101F-2	CE101-3	
2	3	CE104	MECHANICS OF DEFORMABLE BODIES FOR CE	5.00	-	4.0	MEC101-2	None	
2	3	CE122-1	HYDROLOGY	2.50	-	2.0	CHM031	None	
2	3	CE181	CE LAWS, ETHICS AND CONTRACTS	2.50	-	2.0	HUM039	None	
2	3	MATH161	NUMERICAL METHODS	3.75	-	3.0	MATH116	None	
2	3	MATH161L	NUMERICAL METHODS (LABORATORY)	-	3.75	1.0	MATH116, ECE121L	MATH161	
2	3	MATH800E	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	IE101-1, MATH116	None	
2	3	PE004	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4	-	2.50	2.0	PE001, PE002	None	
<b>TOTAL</b>				<b>21.25</b>	<b>10.00</b>	<b>21.0</b>			

## THIRD YEAR

1 <sup>st</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
3	1	CE103-1	HIGHWAY AND RAILROAD ENGINEERING	3.75	-	3.0	CE101-3	None	
3	1	CE123-2	HYDRAULICS 1	2.50	-	2.0	MEC102-1	None	
3	1	CE123L-2	HYDRAULICS 1 (LABORATORY)	-	3.75	1.0	MEC102-1	CE123-1	
3	1	CE131C-2	STRUCTURAL THEORY 1 (COMPUTATIONAL)	2.50	3.75	3.0	CE104	None	
3	1	CE141-1	CONSTRUCTION MATERIALS AND TESTING	2.50	-	2.0	CE104	None	
3	1	CE141L-1	CONSTRUCTION MATERIALS AND TESTING (LABORATORY)	-	3.75	1.0	CE104	CE141-1	
3	1	CE801E	ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	CHM031, EMGT100, MEC102-1, MEC102-1	None	
3	1	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None	
3	1	ME123-1	ENGINEERING UTILITIES 2	3.75	-	3.0	PHY035	None	
3	1	SS023	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None	
<b>TOTAL</b>				<b>18.75</b>	<b>15.00</b>	<b>19.0</b>			

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
3	2	CE102	BUILDING SYSTEMS DESIGN	2.50	-	2.0	DRAW023L-1	None	
3	2	CE102L	BUILDING SYSTEMS DESIGN (LABORATORY)	-	3.75	1.0	DRAW023L-1	CE102	
3	2	CE124	HYDRAULICS 2	2.50	-	2.0	CE123-2	None	
3	2	CE124L	HYDRAULICS 2 (LABORATORY)	-	3.75	1.0	CE123-2, CE123L-2	CE123-1	
3	2	CE132C	STRUCTURAL THEORY 2 (COMPUTATIONAL)	2.50	3.75	3.0	CE131C-2	None	
3	2	CE151-1	GEOTECHNICAL ENGINEERING: SOIL MECHANICS	3.75	-	3.0	CE011, CE104	None	
3	2	CE151L-1	GEOTECHNICAL ENGINEERING: SOIL MECHANICS (LAB)	-	3.75	1.0	CE011, CE104	CE151-1	
3	2	RES101	METHODS OF RESEARCH	3.75	-	3.0	IE101-1, ENG024	None	
3	2	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None	
<b>TOTAL</b>				<b>18.75</b>	<b>15.00</b>	<b>19.0</b>			

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec. Hrs.	Lab. Hrs.	Credit Units	Prerequisites	Co-requisites
3	3	CAP200	CAPSTONE DESIGN / THESIS 1 (LECTURE)	1.25	-	1.0	RES101	None
3	3	CAP200D	CAPSTONE DESIGN / THESIS 1 (LABORATORY)	-	3.75	1.0	RES101	None
3	3	CE105-1	PRINCIPLES OF TRANSPORTATION ENGINEERING	3.75	-	3.0	CE103-1	None
3	3	CE133-2	PRINCIPLES OF RCD AND PRE-STRESSED CONCRETE	3.75	-	3.0	CE132C	None
3	3	CE133C-2	PRINCIPLES OF RCD AND PRE-STRESSED CONCRETE (COMPUTATIONAL)	-	3.75	1.0	CE132C	CE133-2
3	3	CE802E	SURVEYING, GEOTECHNICAL AND HYDRAULICS EXIT EXAM	-	-	0.0	CE103-1, CE151-1, CE124	CE105-1
3	3	CEELEC01	CE ELECTIVE 1	3.75	-	3.0	CE132C	None
3	3	CPE126	ARTIFICIAL INTELLIGENCE	2.50	-	2.0	DS100L	None
3	3	CPE126L	ARTIFICIAL INTELLIGENCE (LABORATORY)	-	3.75	1.0	None	None
3	3	HUM034	ART APPRECIATION	3.75	-	3.0	None	None
3	3	TEC100-2	TECHNOPRENEURSHIP	3.75	-	3.0	EMGT100, ACT099	None
<b>TOTAL</b>				<b>22.50</b>	<b>11.25</b>	<b>21.0</b>		

## FOURTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	1	CAP200D-1	CAPSTONE DESIGN / THESIS 2 (LABORATORY)	-	3.75	1.0	CAP200D	None
4	1	CE134-2	PRINCIPLES OF STEEL DESIGN	3.75	-	3.0	CE133-2	None
4	1	CE134C-2	PRINCIPLES OF STEEL DESIGN (COMPUTATION)	-	3.75	1.0	CE133-2	CE134-2
4	1	CE140	QUANTITY SURVEYING	2.50		2.0	CE102	None
4	1	CE140C	QUANTITY SURVEYING (COMPUTATIONAL)		3.75	1.0	CE102	CE140
4	1	CE803E	STRUCTURAL DESIGN EXIT EXAM	-	-	0.0	CE133-2	CE134-2
4	1	CEELEC02	CE ELECTIVE 2	3.75	-	3.0	CE132C	None
4	1	CEELEC03	CE ELECTIVE 3	3.75	-	3.0	CE132C	None
4	1	GEELEC01	GE ELECTIVE 1	3.75	-	3.0	None	None
4	1	CE198-3	CE CORRELATION 1	-	7.5	(1.0)	MATH800E, CE801E	None
<b>TOTAL</b>				<b>17.50</b>	<b>17.25</b>	<b>17.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	2	CAP200D-2	CAPSTONE DESIGN / THESIS 3 (LABORATORY)	-	3.75	1.0	CAP200D-1	None
4	2	CE142-1	CONSTRUCTION METHODS AND PROJECT MANAGEMENT	3.75	-	3.0	EMGT100	None
4	2	CE142L-1	CONSTRUCTION METHODS AND PROJECT MANAGEMENT (LAB)	-	3.75	1.0	EMGT100	CE142-1
4	2	CEELEC04	CE ELECTIVE 4	3.75	-	3.0	CE132C	None
4	2	CEELEC05	CE ELECTIVE 5	3.75	-	3.0	CE132C	None
4	2	GEELEC02	GE ELECTIVE 2	3.75	-	3.0	None	None
4	2	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	-	3.0	None	None
4	2	CE198-4	CE CORRELATION 2	-	7.5	(1.0)	CE802E, CE803E	None
<b>TOTAL</b>				<b>18.75</b>	<b>13.50</b>	<b>17.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	3	CE191F	CE SEMINARS AND FIELD TRIPS (FIELD)	-	3.75	1.0	CE133-2	None
4	3	CE199R-1	CE PRACTICUM	-	18.00	3.0	CE132C, CE141-1, CE141L-1, HUM039, CE142-1, CE142L-1, CE140P-1	None
4	3	SAF103	CONSTRUCTION OCCUPATIONAL SAFETY AND HEALTH	3.75	-	3.0	CHM031	None
4	3	SGE101	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None
<b>TOTAL</b>				<b>3.75</b>	<b>21.75</b>	<b>7.0</b>		

# BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

Curriculum based on [relevant CHED CMO], applicable to freshmen beginning school year 2023-2024

## FIRST YEAR

1 <sup>st</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	1	CPE100	COMPUTER ENGINEERING AS A DISCIPLINE	1.25	-	1.0	None	None	
1	1	CPE001L	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)	-	3.75	1.0	None	None	
1	1	CHM031	CHEMISTRY FOR ENGINEERS	3.75	-	3.0	None	None	
1	1	CHM031L	CHEMISTRY FOR ENGINEERS (LABORATORY)	-	3.75	1.0	None	CHM031	
1	1	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None	
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	-	3.0	None	None	
1	1	MATH031	MATHEMATICS FOR ENGINEERS	3.75	-	3.0	None	None	
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	3.75	-	(3.0)	None	None	
<b>TOTAL</b>				<b>21.25</b>	<b>7.50</b>	<b>15.0</b>			

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	2	CPE003L	ADVANCED PROGRAMMING TECHNIQUES (LAB)	-	3.75	1.0	CPE001L	None	
1	2	DRAW021W	ENGINEERING DRAWING 1	-	3.75	1.0	None	None	
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	-	3.0	None	None	
1	2	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	-	3.0	None	None	
1	2	MATH041	ENGINEERING CALCULUS 1	5.00	-	4.0	MATH031	None	
1	2	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None	
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)	2.50	3.75	(3.0)	NSTP010	None	
1	2	VE022	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE021	None	
<b>TOTAL</b>				<b>20.00</b>	<b>11.25</b>	<b>15.0</b>			

3rd Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	3	DRAW023L-1	COMPUTER-AIDED DRAFTING (LABORATORY)	-	3.75	1.0	DRAW021W	None	
1	3	CPE141L	PROGRAMMING LOGIC AND DESIGN (LAB)	-	7.50	2.0	CPE001L	None	
1	3	EE099L	BASIC ELECTRICITY AND ELECTRONICS WORKSHOP (LABORATORY)	-	3.75	1.0	None	None	
1	3	HUM039	ETHICS	3.75	-	3.0	None	None	
1	3	MATH042	ENGINEERING CALCULUS 2	5.00	-	4.0	MATH041	None	
1	3	PE001	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1	-	2.50	2.0	None	None	
1	3	PHY035	PHYSICS FOR ENGINEERS	5.00	-	4.0	MATH041	None	
1	3	PHY035L	PHYSICS FOR ENGINEERS (LABORATORY)	-	3.75	1.0	MATH041	PHY035	
1	3	VE023	LIFE COACHING SERIES 3	1.25	-	(1.0)	VE022	None	
<b>TOTAL</b>				<b>15.00</b>	<b>21.25</b>	<b>18.0</b>			

## SECOND YEAR

1 <sup>st</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
2	1	CPE105-1	DISCRETE MATHEMATICS	3.75	-	3.0	MATH041	None	
2	1	CPE142L	OBJECT ORIENTED PROGRAMMING (LAB)	-	7.50	2.0	CPE141L	None	
2	1	ECE121L	COMPUTER-AIDED CALCULATIONS (LABORATORY)	-	3.75	1.0	None	None	
2	1	EE101-3	FUNDAMENTALS OF ELECTRICAL CIRCUITS	3.75	-	3.0	MATH042, PHY035	None	
2	1	EE101L-3	FUNDAMENTALS OF ELECTRICAL CIRCUITS (LABORATORY)	-	3.75	1.0	PHY035L	EE101-3	
2	1	IE101-1	ENGINEERING DATA ANALYSIS	3.75	-	3.0	MATH041	None	
2	1	MATH056	DIFFERENTIAL EQUATIONS	3.75	-	3.0	MATH042	None	
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None	
2	1	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	-	3.0	None	None	
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>			

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	2	CS105L	DATA STRUCTURES AND ALGORITHMS (LABORATORY)	-	7.50	2.0	CPE142L	None
2	2	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None
2	2	ECE101-3	FUNDAMENTAL OF ELECTRONIC CIRCUITS	3.75	-	3.0	EE101-3	None
2	2	ECE101L-3	FUNDAMENTAL OF ELECTRONIC CIRCUITS (LABORATORY)	-	3.75	1.0	EE101L-3	ECE101-3
2	2	EECO102	ENGINEERING ECONOMY	3.75	-	3.0	IE101-1	None
2	2	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None
2	2	GEELEC01	GE ELECTIVE 1	3.75	-	3.0	None	None
2	2	MATH116	ADVANCED ENGINEERING MATHEMATICS	3.75	-	3.0	MATH056	None
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	3	ACT099	ACCOUNTING FOR NON-ACCOUNTANT	1.25		1.0	None	None
2	3	CPE101-1	DIGITAL ELECTRONICS: LOGIC CIRCUITS AND DESIGN	3.75	-	3.0	ECE101-3	None
2	3	CPE101L-1	DIGITAL ELECTRONICS: LOGIC CIRCUITS AND DESIGN (LAB)	-	3.75	1.0	ECE101L-3	CPE101-1
2	3	CPE106-1	DATA AND DIGITAL COMMUNICATIONS	3.75	-	3.0	ECE101-3	None
2	3	CPE121L-1	COMPUTER ENGINEERING DRAFTING AND DESIGN (LAB)	-	3.75	1.0	ECE101-3	None
2	3	EMGT100	ENGINEERING MANAGEMENT	2.50	-	2.0	EECO102	None
2	3	EMGT100L	PROJECT MANAGEMENT (LABORATORY)	-	3.75	1.0	EECO102	None
2	3	MATH161	NUMERICAL METHODS	3.75	-	3.0	MATH116	None
2	3	MATH161L	NUMERICAL METHODS (LABORATORY)	-	3.75	1.0	MATH116, ECE121L	MATH161
2	3	MATH800E	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	IE101-1, MATH116	None
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>		

## THIRD YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	1	CPE103-4	MICROPROCESSORS	3.75	-	3.0	CPE101-1	None
3	1	CPE103L-4	MICROPROCESSORS (LABORATORY)	-	3.75	1.0	CPE101L-1	CPE103-4
3	1	CPE109-1	COMPUTER NETWORKS AND SECURITY	3.75	-	3.0	CPE106-1	None
3	1	CPE109L-1	COMPUTER NETWORKS AND SECURITY (LABORATORY)	-	3.75	1.0	CPE106-1	CPE109-1
3	1	CPE126	ARTIFICIAL INTELLIGENCE	2.50	-	2.0	DS100L	None
3	1	CPE126L	ARTIFICIAL INTELLIGENCE (LABORATORY)	-	3.75	1.0	DS100L	None
3	1	CPE104L-1	INTRODUCTION TO HARDWARE DESCRIPTION LANGUAGE (LAB)	-	3.75	1.0	CPE141L, CpE101-1	None
3	1	CPE143L	WEB DESIGN AND DEVELOPMENT (LABORATORY)	-	7.50	2.0	CPE142L	None
3	1	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None
3	1	TEC100-2	TECHNOPRENEURSHIP	3.75	-	3.0	EMGT100, ACT099	None
<b>TOTAL</b>				<b>17.50</b>	<b>22.50</b>	<b>20.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	2	CPE108	FUNDAMENTALS OF MIXED SIGNALS AND SENSORS	2.50	-	2.0	ECE101-3	None
3	2	CPE108L	FUNDAMENTALS OF MIXED SIGNALS AND SENSORS (LABORATORY)	-	3.75	1.0	ECE101L-3	ECE101-3
3	2	CPE107-1	SOFTWARE DESIGN	3.75	-	3.0	CS105L	None
3	2	CPE107L-1	SOFTWARE DESIGN (LABORATORY)	-	3.75	1.0	CS105L	CPE107-1
3	2	CPE144L	MOBILE APPLICATION DEVELOPMENT (LABORATORY)	-	7.50	2.0	CPE142L	None
3	2	CPE801E	ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	CHM031, PHY035, EECO102	None
3	2	ECE130	FEEDBACK AND CONTROL SYSTEMS	3.75	-	3.0	MATH116	None
3	2	NETA172P-1	CCNA ROUTING AND SWITCHING 1(PAIRED)	2.50	3.75	3.0	PHY035	None
3	2	RES101	METHODS OF RESEARCH	3.75	-	3.0	IE101-1, ENG024	None
3	2	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>20.00</b>	<b>18.75</b>	<b>21.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	3	CAP200D	CAPSTONE DESIGN / THESIS 1 (LABORATORY)	-	3.75	1.0	RES101	None
3	3	CPE112-1	EMBEDDED SYSTEMS	3.75	-	3.0	CPE103-4	None
3	3	CPE112L-1	EMBEDDED SYSTEMS (LABORATORY)	-	3.75	1.0	CPE103L-4	CPE112-1
3	3	CPE181	CPE LAWS AND PROFESSIONAL PRACTICE	2.50	-	2.0	HUM039	None
3	3	CPE151	OPERATING SYSTEMS	3.75	-	3.0	CS105L	None
3	3	CPE151L	OPERATING SYSTEMS (LABORATORY)	-	3.75	1.0	CS105L	CPE151
3	3	CPE802E	COMPUTER ENGINEERING 1 EXIT EXAM	-	-	0.0	CPE142L, CPE143L, CS105L, CPE107-1	None
3	3	CPEELEC01	CPE ELECTIVE 1 (PAIRED)	2.50	3.75	3.0	None	None
3	3	EENV102	ENVIRONMENTAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None
3	3	GEELEC02	GE ELECTIVE 2	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>20.00</b>	<b>15.00</b>	<b>20.0</b>		

## FOURTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	1	CAP200D-1	CAPSTONE DESIGN / THESIS 2 (LABORATORY)	-	3.75	1.0	CAP200D	None
4	1	CPE110-1	EMERGING TECHNOLOGIES IN CPE	3.75	-	3.0	CPE103-4	None
4	1	CPE113-1	DIGITAL SIGNAL PROCESSING	3.75	-	3.0	ECE130	None
4	1	CPE113L-1	DIGITAL SIGNAL PROCESSING (LABORATORY)	-	3.75	1.0	ECE130, ECE121L	CPE113-1
4	1	CPE131-1	COMPUTER ARCHITECTURE AND ORGANIZATION	3.75	-	3.0	CPE103-4	None
4	1	CPE131L-1	COMPUTER ARCHITECTURE AND ORGANIZATION (LAB)	-	3.75	1.0	CPE103L-4	CPE131-1
4	1	CPEELEC02	CPE ELECTIVE 2 (PAIRED)	2.50	3.75	3.0	None	None
4	1	CPE198-3	CPE CORRELATION 1	-	7.5	(1.0)	MATH800E, CPE801E	None
<b>TOTAL</b>				<b>13.75</b>	<b>21.00</b>	<b>15.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	2	CAP200D-2	CAPSTONE DESIGN / THESIS 3 (LABORATORY)	-	3.75	1.0	CAP200D-1	None
4	2	CPE803E	COMPUTER ENGINEERING 2 EXIT EXAM	-	-	0.0	CPE109-1, CPE110-1, CPE113-1, CPE151, CPE181	CPE131-1
4	2	CPEELEC03	CPE ELECTIVE 3 (PAIRED)	2.50	3.75	3.0	None	None
4	2	HUM034	ART APPRECIATION	3.75	-	3.0	None	None
4	2	SS023	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None
4	2	CPE198-4	CPE CORRELATION 2	-	7.5	(1.0)	CPE802E, CPE803E	None
<b>TOTAL</b>				<b>10.00</b>	<b>13.50</b>	<b>10.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	3	CPE191F-1	CPE SEMINARS AND FIELD TRIPS (FIELD)	-	3.75	1.0	CPE109-1, CPE144L	None
4	3	CPE199R-1	CPE PRACTICUM	-	18.00	3.0	CPE143L, CS105L, ECE101-3, HUM039	None
4	3	SAF102	BASIC OCCUPATIONAL SAFETY AND HEALTH	3.75	-	3.0	CHM031	None
4	3	SGE101	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None
<b>TOTAL</b>				<b>3.75</b>	<b>21.75</b>	<b>7.00</b>		

# BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Curriculum based on [relevant CHED CMO], applicable to freshmen beginning school year 2023-2024

## FIRST YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	1	CHM031	CHEMISTRY FOR ENGINEERS	3.75	-	3.0	None	None
1	1	CHM031L	CHEMISTRY FOR ENGINEERS (LABORATORY)	-	3.75	1.0	None	CHM031
1	1	EE100L	ELECTRICAL ENGINEERING ORIENTATION(LABORATORY)	-	3.75	1.0	None	None
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	-	3.0	None	None
1	1	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None
1	1	MATH031	MATHEMATICS FOR ENGINEERS	3.75	-	3.0	None	None
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	2.50	-	(3.0)	None	None
1	1	VE021	LIFE COACHING SERIES 1	1.25	-	(1.0)	None	None
<b>TOTAL</b>				<b>18.75</b>	<b>7.50</b>	<b>14.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	2	DRAW021W	ENGINEERING DRAWING 1	-	3.75	1.0	None	None
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	-	3.0	None	None
1	2	HUM039	ETHICS	3.75	-	3.0	None	None
1	2	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	-	3.0	None	None
1	2	MATH041	ENGINEERING CALCULUS 1	5.00	-	4.0	MATH031	None
1	2	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)	2.50	3.75	(3.0)	NSTP010	None
1	2	VE022	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE021	None
<b>TOTAL</b>				<b>23.75</b>	<b>7.50</b>	<b>17.0</b>		

3rd Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	3	CPE001L	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)	-	3.75	1.0	None	None
1	3	DRAW023L-1	COMPUTER-AIDED DRAFTING (LABORATORY)	-	3.75	1.0	DRAW021W	None
1	3	EE099L	BASIC ELECTRICITY AND ELECTRONICS WORKSHOP (LABORATORY)	-	3.75	1.0	None	None
1	3	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None
1	3	IE101-1	ENGINEERING DATA ANALYSIS	3.75	-	3.0	MATH041	None
1	3	MATH042	ENGINEERING CALCULUS 2	5.00	-	4.0	MATH041	None
1	3	PE001	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1	-	2.50	2.0	None	None
1	3	PHY035	PHYSICS FOR ENGINEERS	5.00	-	4.0	MATH041	None
1	3	PHY035L	PHYSICS FOR ENGINEERS (LABORATORY)	-	3.75	1.0	MATH041	PHY035
1	3	VE023	LIFE COACHING SERIES 3	1.25	-	(1.0)	VE022	None
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>20.0</b>		

## SECOND YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	1	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None
2	1	ECE121L	COMPUTER-AIDED CALCULATIONS (LABORATORY)	-	3.75	1.0	None	None
2	1	ECCO102	ENGINEERING ECONOMY	3.75	-	3.0	IE101-1	None
2	1	EE100L-1	BUILDING WIRING INSTALLATION TECHNOLOGY (LABORATORY)		3.75	1.0	EE100L	None
2	1	EE101-2	CIRCUITS 1	3.75	-	3.0	MATH042, PHY035	None
2	1	EE101L-2	CIRCUITS 1 (LABORATORY)	-	3.75	1.0	PHY035L	EE101-2
2	1	MATH056	DIFFERENTIAL EQUATIONS	3.75	-	3.0	MATH042	None
2	1	ME111-1	THERMODYNAMICS	3.75	-	3.0	MATH042, PHY035	None
2	1	MEC100-1	ENGINEERING MECHANICS	3.75	-	3.0	MATH042, PHY035	None
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	2	ECE101-4	ELECTRONICS CIRCUITS: DEVICES AND ANALYSIS	3.75	-	3.0	EE101-2	None
2	2	ECE101L-4	ELECTRONICS CIRCUITS: DEVICES AND ANALYSIS (LAB)	-	3.75	1.0	EE101L-2	ECE101-4
2	2	ECE115-1	ELECTROMAGNETICS FOR EE	2.50	-	2.0	PHY035, MATH056	None
2	2	EE102-1	CIRCUITS 2	3.75	-	3.0	EE101-2	None
2	2	EE102L-1	CIRCUITS 2 (LABORATORY)	-	3.75	1.0	EE101L-2	EE102-1
2	2	EMGT100	ENGINEERING MANAGEMENT	2.50	-	2.0	ECCO102	None
2	2	EMGT100L	PROJECT MANAGEMENT (LABORATORY)	-	3.75	1.0	ECCO102	None
2	2	EENV102	ENVIRONMENTAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None
2	2	MATH116	ADVANCED ENGINEERING MATHEMATICS	3.75	-	3.0	MATH056	None
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None
<b>TOTAL</b>				<b>20.00</b>	<b>13.75</b>	<b>21.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	3	CE104-2	MECHANICS OF DEFORMABLE BODIES FOR EE	3.75	-	3.0	MEC100-1	None
2	3	EE103	CIRCUITS 3	2.50	-	2.0	EE102-1	None
2	3	EE103L	CIRCUITS 3 (LABORATORY)	-	3.75	1.0	EE102L-1	EE103
2	3	EE106-1	DC MACHINERY	2.50	-	2.0	EE102-1, ECE115-1	None
2	3	EE106L-1	DC MACHINERY (LABORATORY)	-	3.75	1.0	EE102L-1	EE106-1
2	3	EE100L-2	INDUSTRIAL MOTOR CONTROL TECHNOLOGY (LABORATORY)		3.75	1.0	EE100L-1	None
2	3	EE181	ELECTRICAL ENGINEERING LAWS, CODES AND ETHICS	2.50	-	2.0	HUM039	None
2	3	MATH161	NUMERICAL METHODS	3.75	-	3.0	MATH116	None
2	3	MATH161L	NUMERICAL METHODS (LABORATORY)	-	3.75	1.0	MATH116, ECE121L	MATH161
2	3	MATH800E	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	IE101-1, MATH116	None
2	3	PE004	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4	-	2.50	2.0	PE001, PE002	None
2	3	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>		

## THIRD YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	1	ACT099	ACCOUNTING FOR NON-ACCOUNTANT	1.25	-	1.00	None	None
3	1	CPE101-2	LOGIC CIRCUITS AND SWITCHING THEORY FOR EE	2.50	-	2.0	ECE101-4	None
3	1	CPE101L-2	LOGIC CIRCUITS AND SWITCHING THEORY FOR EE (LAB)	-	3.75	1.0	ECE101L-4	CPE101-2
3	1	CPE126	ARTIFICIAL INTELLIGENCE	2.50	-	2.0	DS100L	None
3	1	CPE126L	ARTIFICIAL INTELLIGENCE (LABORATORY)	-	3.75	1.0	DS100L	None
3	1	ECE130	FEEDBACK AND CONTROL SYSTEMS	3.75	-	3.0	MATH116	None
3	1	EE107-1	AC MACHINERY	3.75	-	3.0	EE106-1	None
3	1	EE107L-1	AC MACHINERY (LABORATORY)	-	3.75	1.0	EE106L-1	EE107-1
3	1	EE122-1	AC APPARATUS AND DEVICES	2.50	-	2.0	EE103	None
3	1	EE122L-1	AC APPARATUS AND DEVICES (LABORATORY)	-	3.75	1.0	EE103L	EE122-1
3	1	EE801E	ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	CHM031, PHY035, EECO102, MEC100-1, ME111-1	None
3	1	HUM034	ART APPRECIATION	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>20.00</b>	<b>15.00</b>	<b>20.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	2	CPE103-2	MICROPROCESSOR SYSTEMS FOR ELECTRICAL ENGINEERS	2.50	-	2.0	CPE101-2	None
3	2	CPE103L-2	MICROPROCESSOR SYSTEMS FOR ELECTRICAL ENGINEERS (LAB)	-	3.75	1.0	CPE101L-2	CPE103-2
3	2	EE109-2	ELECTRICAL SYSTEMS AND ILLUMINATION ENGINEERING DESIGN	3.75	-	3.0	EE107-1, EE122-1	EE182L
3	2	EE109L-2	ELECTRICAL SYSTEMS DESIGN (LABORATORY)	-	3.75	1.0	EE107L-1, EE122L-1	EE109-2
3	2	EE109L-3	ILLUMINATION ENGINEERING DESIGN (LABORATORY)	-	3.75	1.0	EE107L-1, EE122L-1	EE109-2
3	2	EE182C	ELECTRICAL STANDARDS AND PRACTICES (COMPUTATIONAL)	-	3.75	1.0	EE181	None
3	2	EE802E	ELECTRICAL ENGINEERING 1 EXIT EXAM	-	-	0.0	CPE101-2, EE107-1, EE122-1	EE182L, ECE103-1
3	2	GEELEC01	GE ELECTIVE 1	3.75	-	3.0	None	None
3	2	MSE102	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031, CE104-2	None
3	2	RES101	METHODS OF RESEARCH	3.75	-	3.0	IE101-1, ENG024	None
3	2	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>21.25</b>	<b>15.00</b>	<b>21.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	3	CAP200D	CAPSTONE DESIGN / THESIS 1 (LABORATORY)	-	3.75	1.0	RES101	None
3	3	CE120-1	FLUID MECHANICS FOR EE	2.50	-	2.0	MEC100-1	None
3	3	ECE103-1	INDUSTRIAL ELECTRONICS FOR ELECTRICAL ENGINEERS	3.75	-	3.0	ECE101-4	None
3	3	ECE103L-1	INDUSTRIAL ELECTRONICS FOR ELECTRICAL ENGINEERS (LAB)	-	3.75	1.0	ECE101L-4	ECE103-1
3	3	EE134-1	POWER SYSTEMS ANALYSIS 1	2.50	-	2.0	EE182L, EE122-1	None
3	3	EE134L-1	POWER SYSTEMS ANALYSIS 1 (LABORATORY)	-	3.75	1.0	EE182L, EE122L-1	EE134-1
3	3	EEELEC01	EE ELECTIVE 1	3.75	-	3.0	None	None
3	3	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	-	3.0	None	None
3	3	TEC100-2	TECHNOPRENEURSHIP	3.75	-	3.0	EMGT100, ACT099	None
<b>TOTAL</b>				<b>20.00</b>	<b>11.25</b>	<b>19.0</b>		

## FOURTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	1	CAP200D-1	CAPSTONE DESIGN / THESIS 2 (LABORATORY)	-	3.75	1.0	CAP200D	None
4	1	ECE132-1	INSTRUMENTATION AND CONTROL	2.50	-	2.0	ECE130	None
4	1	ECE132L-1	INSTRUMENTATION AND CONTROL (LABORATORY)	-	3.75	1.0	ECE130	ECE132-1
4	1	ECE140-1	PRINCIPLES OF COMMUNICATION SYSTEM FOR EE	3.75	-	3.0	ECE101-4	None
4	1	EE135-1	POWER SYSTEMS ANALYSIS 2	2.50	-	2.0	EE134-1	None
4	1	EE135L-1	POWER SYSTEMS ANALYSIS 2 (LABORATORY)	-	3.75	1.0	EE134L-1	EE135-1
4	1	EE136L-1	FUNDAMENTALS OF POWER PLANT ENGINEERING DESIGN (LAB)	-	3.75	1.0	EE134-1, EE134L-1	EE135L-1
4	1	EE803E	ELECTRICAL ENGINEERING 2 EXIT EXAM	-	-	0.0	EE107-1, EE122-1, EE182L, EE109-2, ECE140-1, EE134-1	EE134-1
4	1	EEELEC02	EE ELECTIVE 2	3.75	-	3.0	None	None
4	1	GEELEC02	GE ELECTIVE 2	3.75	-	3.0	None	None
4	1	EE198-3	EE CORRELATION 1	-	7.5	(1.0)	MATH800E, EE801E	None
<b>TOTAL</b>				<b>16.25</b>	<b>21.00</b>	<b>17.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	2	<b>CAP200D-2</b>	CAPSTONE DESIGN / THESIS 3 (LABORATORY)	-	3.75	1.0	CAP200D-1	None
4	2	<b>EE137-1</b>	DISTRIBUTION SYSTEMS AND SUBSTATION DESIGN	2.50	-	2.0	EE134-1	None
4	2	<b>EE137L-1</b>	DISTRIBUTION SYSTEMS AND SUBSTATION DESIGN (LAB)	-	3.75	1.0	EE134L-1	EE137-1
4	2	<b>EEELEC03</b>	EE ELECTIVE 3	3.75	-	3.0	None	None
4	2	<b>SS023</b>	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None
4	2	<b>SS038</b>	THE LIFE AND WORKS OF JOSE RIZAL	3.75	-	3.0	None	None
4	2	<b>EE198-4</b>	EE CORRELATION 2	-	7.5	(1.0)	EE134-1, ECE132-1, ECE140-1, EE802E, EE803E	None
<b>TOTAL</b>				<b>13.75</b>	<b>13.50</b>	<b>13.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	3	<b>EE191F-1</b>	EE SEMINARS AND COLLOQUIUM (FIELD)	-	3.75	1.0	EE182C	None
4	3	<b>EE199R-1</b>	EE PRACTICUM	-	18.0	3.0	EE102-1, ECE101-4, HUM039	None
4	3	<b>SAF102</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH	3.75	-	3.0	CHM031	None
4	3	<b>SGE101</b>	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None
<b>TOTAL</b>				<b>3.75</b>	<b>21.75</b>	<b>7.00</b>		

# BACHELOR OF SCIENCE IN ELECTRONICS ENGINEERING

Curriculum based on [relevant CHED CMO], applicable to freshmen beginning school year 2023-2024

## FIRST YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	1	CHM031	CHEMISTRY FOR ENGINEERS	3.75	-	3.0	None	None
1	1	CHM031L	CHEMISTRY FOR ENGINEERS (LABORATORY)	-	3.75	1.0	None	CHM031
1	1	CPE001L	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)	-	3.75	1.0	None	None
1	1	ECE100	ELECTRONICS ENGINEERING ORIENTATION	1.25	-	1.0	None	None
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	-	3.0	None	None
1	1	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None
1	1	MATH031	MATHEMATICS FOR ENGINEERS	3.75	-	3.0	None	None
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	2.50	-	(3.0)	None	None
1	1	VE021	LIFE COACHING SERIES 1	1.25	-	(1.0)	None	None
<b>TOTAL</b>				<b>20.0</b>	<b>7.50</b>	<b>15.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	2	DRAW021W	ENGINEERING DRAWING 1	-	3.75	1.0	None	None
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	-	3.0	None	None
1	2	HUM039	ETHICS	3.75	-	3.0	None	None
1	2	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	-	3.0	None	None
1	2	MATH041	ENGINEERING CALCULUS 1	5.00	-	4.0	MATH031	None
1	2	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)	2.50	3.75	(3.0)	NSTP010	None
1	2	VE022	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE021	None
<b>TOTAL</b>				<b>23.75</b>	<b>7.50</b>	<b>17.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	3	DRAW023L-1	COMPUTER-AIDED DRAFTING (LABORATORY)	-	3.75	1.0	DRAW021W	None
1	3	EE099L	BASIC ELECTRICITY AND ELECTRONICS WORKSHOP (LABORATORY)	-	3.75	1.0	None	None
1	3	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None
1	3	IE101-1	ENGINEERING DATA ANALYSIS	3.75	-	3.0	MATH041	None
1	3	MATH042	ENGINEERING CALCULUS 2	5.00	-	4.0	MATH041	None
1	3	PE001	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1	-	2.50	2.0	None	None
1	3	PHY035	PHYSICS FOR ENGINEERS	5.00	-	4.0	MATH041	None
1	3	PHY035L	PHYSICS FOR ENGINEERS (LABORATORY)	-	3.75	1.0	MATH041	PHY035
1	3	VE023	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE022	None
<b>TOTAL</b>				<b>18.75</b>	<b>13.75</b>	<b>19.0</b>		

## SECOND YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	1	CPE142L	OBJECT ORIENTED PROGRAMMING (LAB)	-	7.50	2.0	CPE001L	None
2	1	EE101-2	CIRCUITS 1	3.75	-	3.0	MATH042, PHY035	None
2	1	EE101L-2	CIRCUITS 1 (LABORATORY)	-	3.75	1.0	PHY035L	EE101-2
2	1	ECCO102	ENGINEERING ECONOMY	3.75	-	3.0	IE101-1	None
2	1	EENV102	ENVIRONMENTAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None
2	1	MATH056	DIFFERENTIAL EQUATIONS	3.75	-	3.0	MATH042	None
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None
2	1	PHY034	PHYSICS FOR ECE	3.75	-	3.0	MATH041	None
2	1	PHY034L	PHYSICS FOR ECE (LABORATORY)	-	3.75	1.0	MATH041	PHY034
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	2	ECE101-2	ELECTRONICS DEVICES AND CIRCUITS	3.75	-	3.0	MATH042, PHY035	None
2	2	ECE101L-2	ELECTRONICS DEVICES AND CIRCUITS (LABORATORY)	-	3.75	1.0	PHY035L	ECE101-2
2	2	ECE121L	COMPUTER-AIDED CALCULATIONS (LABORATORY)	-	3.75	1.0	None	None
2	2	EE102-1	CIRCUITS 2	3.75	-	3.0	EE101-2	None
2	2	EE102L-1	CIRCUITS 2 (LABORATORY)	-	3.75	1.0	EE101L-2	EE102-1
2	2	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None
2	2	MATH116	ADVANCED ENGINEERING MATHEMATICS	3.75	-	3.0	MATH056	None
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None
2	2	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None
2	2	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	3	CPE115-1	LOGIC CIRCUIT AND SWITCHING THEORY	3.75	-	3.0	ECE101-2	None
2	3	CPE115L-1	LOGIC CIRCUIT AND SWITCHING THEORY (LABORATORY)	-	3.75	1.0	ECE101L-2	CPE115-1
2	3	ECE102-1	ELECTRONICS CIRCUITS ANALYSIS AND DESIGN	3.75	-	3.0	ECE101-2	None
2	3	ECE102L-1	ELECTRONICS CIRCUITS ANALYSIS AND DESIGN (LAB)	-	3.75	1.0	ECE101L-2	ECE102-1
2	3	ECE115	ELECTROMAGNETICS FOR ECE	5.00	-	4.0	PHY035, MATH056	None
2	3	EMGT100	ENGINEERING MANAGEMENT	2.50	-	2.0	EECO102	None
2	3	EMGT100L	PROJECT MANAGEMENT (LABORATORY)	-	3.75	1.0	EECO102	None
2	3	MATH116L	ADVANCED ENGINEERING MATHEMATICS (LAB)	-	3.75	1.0	MATH116, ECE121L	MATH161
2	3	MATH161	NUMERICAL METHODS	3.75	-	3.0	MATH116	None
2	3	MATH800E	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	IE101-1, MATH116	None
2	3	PE004	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4	-	2.50	2.0	PE001, PE002	None
<b>TOTAL</b>				<b>18.75</b>	<b>17.50</b>	<b>21.0</b>		

## THIRD YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	1	CPE123-1	MICROPROCESSOR AND MICROCONTROLLER SYSTEMS AND DESIGN	3.75	-	3.0	CPE115-1	None
3	1	CPE123L-1	MICROPROCESSOR AND MICROCONTROLLER SYSTEMS AND DESIGN (LAB)	-	3.75	1.0	CPE115L-1	CPE123-1
3	1	CPE126	ARTIFICIAL INTELLIGENCE	2.50	-	2.0	DS100L	None
3	1	CPE126L	ARTIFICIAL INTELLIGENCE (LABORATORY)	-	3.75	1.0	DS100L	None
3	1	ECE130	FEEDBACK AND CONTROL SYSTEMS	3.75	-	3.0	MATH116	None
3	1	ECE130L	FEEDBACK AND CONTROL SYSTEMS (LABORATORY)	-	3.75	1.0	MATH116, ECE121L	ECE130
3	1	ECE141-1	PRINCIPLES OF COMMUNICATION SYSTEM	3.75	-	3.0	ECE102-1, ECE115	None
3	1	ECE141L-1	PRINCIPLES OF COMMUNICATION SYSTEM (LAB)	-	3.75	1.0	ECE102L-1	ECE141-1
3	1	ECE801E	ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	CHM031, PHY035, PHY034, EMGT100	None
3	1	MSE102	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None
3	1	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>21.25</b>	<b>15.00</b>	<b>21.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	2	ACT099	ACCOUNTING FOR NON-ACCOUNTANT	1.25	-	1.0	None	None
3	2	CPE144L	MOBILE APPLICATION DEVELOPMENT (LABORATORY)	-	7.50	2.0	CPE142L	None
3	2	ECE107-1	ELECTRONIC SYSTEMS AND DESIGN	3.75	-	3.0	ECE102-1	None
3	2	ECE107L-1	ELECTRONIC SYSTEMS AND DESIGN (LABORATORY)	-	3.75	1.0	ECE102-1	ECE107-1
3	2	ECE142-1	MODULATION AND CODING TECHNIQUES	3.75	-	3.0	ECE141-1	None
3	2	ECE142L-1	MODULATION AND CODING TECHNIQUES LABORATORY	-	3.75	1.0	ECE141L-1	ECE142-1
3	2	GEELEC01	GE ELECTIVE 1	3.75	-	3.0	None	None
3	2	NETA172P-1	CCNA ROUTING AND SWITCHING 1(PAIRED)	2.50	3.75	3.0	PHY035	None
3	2	RES101	METHODS OF RESEARCH	3.75	-	3.0	IE101-1, ENG024	None
<b>TOTAL</b>				<b>18.75</b>	<b>18.75</b>	<b>20.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	3	CAP200D	CAPSTONE DESIGN / THESIS 1 (LABORATORY)	-	3.75	1.0	RES101	None
3	3	ECE143-1	TRANSMISSION MEDIA AND ANTENNA SYSTEMS AND DESIGN	3.75	-	3.0	ECE142-1	None
3	3	ECE143L-1	TRANSMISSION MEDIA AND ANTENNA SYSTEMS AND DESIGN (LAB)	-	3.75	1.0	ECE142L-1	ECE143-1
3	3	ECE144-1	DATA COMMUNICATIONS	3.75	-	3.0	ECE142-1	None
3	3	ECE144L-1	DATA COMMUNICATIONS (LABORATORY)	-	3.75	1.0	ECE142L-1	ECE144-1
3	3	ECE802E	ELECTRONICS ENGINEERING EXIT EXAM	-	-	0.0	ECE107-1, EE102-1, ECE130, ECE115, CPE123-1	None
3	3	ECE163	SIGNALS SPECTRA AND SIGNAL PROCESSING	3.75	-	3.0	MATH116	None
3	3	ECE163L	SIGNALS SPECTRA AND SIGNAL PROCESSING (LAB)	-	3.75	1.0	ECE121L, MATH116	ECE163
3	3	ECEELEC01-1	ECE ELECTIVE 1 (PAIRED)	2.50	3.75	3.0	None	None
3	3	TEC100-2	TECHNOPRENEURSHIP	3.75	-	3.0	EMGT100, ACT099	None
<b>TOTAL</b>				<b>17.50</b>	<b>18.75</b>	<b>19.0</b>		

## FOURTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	1	CAP200D-1	CAPSTONE DESIGN / THESIS 2 (LABORATORY)	-	3.75	1.0	CAP200D	None
4	1	ECEELEC02-1	ECE ELECTIVE 2 (PAIRED)	2.50	3.75	3.0	None	None
4	1	ECE127	INTRODUCTION TO BIOMEDICAL ENGINEERING	2.50	-	2.0	ECE107-1	None
4	1	ECE146	ADVANCE COMMUNICATIONS SYSTEM AND DESIGN	3.75	-	3.0	ECE143-1	None
4	1	ECE146L	ADVANCE COMMUNICATIONS SYSTEM AND DESIGN (LABORATORY)	-	3.75	1.0	ECE143L-1	ECE146
4	1	ECE803E	ELECTRONICS SYSTEMS AND TECHNOLOGIES EXIT EXAM	-	-	0.0	ECE143-1, ECE144-1, ECE130, ECE163	None
4	1	HUM034	ART APPRECIATION	3.75	-	3.0	None	None
4	1	SS023	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None
4	1	ECE198-3	ECE CORRELATION 1	-	7.5	(1.0)	MATH800E, ECE801E	None
<b>TOTAL</b>				<b>16.25</b>	<b>17.25</b>	<b>16.0</b>		

<b>2<sup>nd</sup> Term</b>								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	2	<b>CAP200D-2</b>	CAPSTONE DESIGN / THESIS 3 (LABORATORY)	-	3.75	1.0	CAP200D-1	None
4	2	<b>ECE181</b>	ECE LAWS, CODES AND PROFESSIONAL ETHICS	3.75	-	3.0	HUM039	None
4	2	<b>ECEELEC03-1</b>	ECE ELECTIVE 3 (PAIRED)	2.50	3.75	3.0	None	None
4	2	<b>GEELEC02</b>	GE ELECTIVE 2	3.75	-	3.0	None	None
4	2	<b>SS038</b>	THE LIFE AND WORKS OF JOSE RIZAL	3.75	-	3.0	None	None
4	2	<b>ECE198-4</b>	ECE CORRELATION 2	-	7.50	(1.0)	ECE802E, ECE803E	None
<b>TOTAL</b>				<b>13.75</b>	<b>13.50</b>	<b>13.0</b>		

<b>3<sup>rd</sup> Term</b>								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	3	<b>ECE191F-1</b>	ECE SEMINARS AND COLLOQUIUM (FIELD)	-	3.75	1.0	CPE123-1, ECE141-1	None
4	3	<b>ECE199R-1</b>	ECE PRACTICUM	-	18.00	3.0	CPE123-1, ECE143-1, HUM039	None
4	3	<b>SAF102</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH	3.75	-	3.0	CHM031	None
4	3	<b>SGE101</b>	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None
<b>TOTAL</b>				<b>3.75</b>	<b>21.75</b>	<b>7.0</b>		

# BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

Curriculum based on [relevant CHED CMO], applicable to freshmen beginning school year 2023-2024

## FIRST YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	1	IE100	INDUSTRIAL ENGINEERING ORIENTATION	1.25	-	1.0	None	None
1	1	CHM031	CHEMISTRY FOR ENGINEERS	3.75	-	3.0	None	None
1	1	CHM031L	CHEMISTRY FOR ENGINEERS (LABORATORY)	-	3.75	1.0	None	CHM031
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	-	3.0	None	None
1	1	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None
1	1	MATH031	MATHEMATICS FOR ENGINEERS	3.75	-	3.0	None	None
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	2.50	-	(3.0)	None	None
1	1	VE021	LIFE COACHING SERIES 1	1.25	-	(1.0)	None	None
<b>TOTAL</b>				<b>20.00</b>	<b>3.75</b>	<b>14.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	2	DRAW021W	ENGINEERING DRAWING 1	-	3.75	1.0	None	None
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	-	3.0	None	None
1	2	HUM034	ART APPRECIATION	3.75	-	3.0	None	None
1	2	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	-	3.0	None	None
1	2	MATH041	ENGINEERING CALCULUS 1	5.00	-	4.0	MATH031	None
1	2	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)	2.50	3.75	(3.0)	NSTP010	None
1	2	VE022	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE021	None
<b>TOTAL</b>				<b>23.75</b>	<b>7.50</b>	<b>17.0</b>		

3rd Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
1	3	CPE001L	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)	-	3.75	1.0	None	None
1	3	DRAW023L-1	COMPUTER-AIDED DRAFTING (LABORATORY)	-	3.75	1.0	DRAW021W	None
1	3	MATH042	ENGINEERING CALCULUS 2	5.00	-	4.0	MATH041	None
1	3	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None
1	3	IE101-1	ENGINEERING DATA ANALYSIS	3.75	-	3.0	MATH041	None
1	3	PHY035	PHYSICS FOR ENGINEERS	5.00	-	4.0	MATH041	None
1	3	PHY035L	PHYSICS FOR ENGINEERS (LABORATORY)	-	3.75	1.0	MATH041	PHY035
1	3	PE001	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1	-	2.50	2.0	None	None
1	3	VE023	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE022	None
<b>TOTAL</b>				<b>18.75</b>	<b>13.75</b>	<b>19.0</b>		

## SECOND YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	1	ECE121L	COMPUTER-AIDED CALCULATIONS (LABORATORY)	-	3.75	1.0	None	None
2	1	EECO102	ENGINEERING ECONOMY	3.75	-	3.0	IE101-1	None
2	1	GEELECO1	GE ELECTIVE 1	3.75	-	3.0	None	None
2	1	IE102	ADVANCED STATISTICAL ANALYSIS FOR INDUSTRIAL ENGINEERING	3.75	-	3.0	IE101-1	None
2	1	IE111-1	INDUSTRIAL MATERIALS AND PROCESSES	2.50	-	2.0	CHM031, PHY035	None
2	1	IE111L-1	INDUSTRIAL MATERIALS AND PROCESSES (LABORATORY)	-	3.75	1.0	CHM031L, PHY035L	IE111-1
2	1	MATH056	DIFFERENTIAL EQUATIONS	3.75	-	3.0	MATH042	None
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None
<b>TOTAL</b>				<b>17.50</b>	<b>10.00</b>	<b>18.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	2	ACT112	FINANCIAL ACCOUNTING	3.75	-	3.0	None	None
2	2	CPE002L	COMPUTER FUNDAMENTALS AND PROGRAMMING 2 (LAB)	-	3.75	1.0	CPE001L	None
2	2	EENV102	ENVIRONMENTAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None
2	2	EMGT100L	PROJECT MANAGEMENT (LABORATORY)		3.75	1.0	EECO102	None
2	2	EMGT103-1	INDUSTRIAL ORGANIZATION AND MANAGEMENT	3.75	-	3.0	IE101-1	None
2	2	MEC100-1	ENGINEERING MECHANICS	3.75	-	3.0	MATH042, PHY035	None
2	2	MATH116	ADVANCED ENGINEERING MATHEMATICS	3.75	-	3.0	MATH056	None
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None
<b>TOTAL</b>				<b>18.75</b>	<b>10.00</b>	<b>19.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	3	ACT113	MANAGERIAL ACCOUNTING	3.75	-	3.0	ACT112	None
2	3	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None
2	3	IE121-1	OPERATIONS RESEARCH 1	3.75	-	3.0	MATH116	None
2	3	ME111-1	THERMODYNAMICS	3.75	-	3.0	MATH042, PHY035	None
2	3	MATH161	NUMERICAL METHODS	3.75	-	3.0	MATH116	None
2	3	MATH161L	NUMERICAL METHODS (LABORATORY)	-	3.75	1.0	MATH116, ECE121L	MATH161
2	3	MATH800E	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	IE101-1, MATH116	None
2	3	PE004	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4	-	2.50	2.0	PE001, PE002	None
2	3	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>18.75</b>	<b>10.00</b>	<b>19.0</b>		

## THIRD YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	1	ECO103	PRINCIPLES OF ECONOMICS	3.75	-	3.0	None	None
3	1	IE112-1	WORK STUDY AND MEASUREMENT	3.75	-	3.0	IE101-1, IE111-1, EMGT103-1	None
3	1	IE112L-1	WORK STUDY AND MEASUREMENT (LABORATORY)	-	3.75	1.0	IE101-1, IE111-1, EMGT103-1	IE112-1
3	1	IE122-1	OPERATIONS RESEARCH 2	3.75	-	3.0	IE121-1	None
3	1	IE801E	ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	CHM031, PHY035, EMGT103-1, EENV102	None
3	1	IT120	INFORMATION SYSTEMS	3.75	-	3.0	CPE002L	None
3	1	SS038	THE LIFE AND WORKS OF JOSE RIZAL	3.75	-	3.0	None	None
3	1	TEC100-1	TECHNOPRENEURSHIP FOR IE	3.75	-	3.0	EMGT103-1	None
<b>TOTAL</b>				<b>22.50</b>	<b>3.75</b>	<b>19.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	2	CPE126	ARTIFICIAL INTELLIGENCE	2.50	-	2.0	DS100L	None
3	2	CPE126L	ARTIFICIAL INTELLIGENCE (LABORATORY)	-	3.75	1.0	DS100L	None
3	2	IE105-1	QUALITY MANAGEMENT SYSTEMS	3.75	-	3.0	IE102, IE112-1	None
3	2	IE113-1	ERGONOMICS 1	2.50	-	2.0	IE112-1	None
3	2	IE113L-1	ERGONOMICS 1 (LABORATORY)	-	3.75	1.0	IE112L-1	IE113-1
3	2	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None
3	2	GEELEC02	GE ELECTIVE 2	3.75	-	3.0	None	None
3	2	RES101	METHODS OF RESEARCH	3.75	-	3.0	IE101-1, ENG024	None
<b>TOTAL</b>				<b>20.00</b>	<b>7.50</b>	<b>18.0</b>		

3 <sup>rd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
3	3	CAP200D	CAPSTONE DESIGN / THESIS 1 (LABORATORY)	-	3.75	1.0	RES101	None	
3	3	IE114-1	ERGONOMICS 2	2.50	-	2.0	IE113-1	None	
3	3	IE114L-1	ERGONOMICS 2 (LABORATORY)	-	3.75	1.0	IE113L-1	IE114-1	
3	3	IE131-1C	OPERATIONS MANAGEMENT (COMPUTATIONAL)	3.75	3.75	3.0	IE105-1, IE121-1	None	
3	3	EE104-2	BASIC ELECTRICAL ENGINEERING FOR IE	3.75	-	3.0	PHY035	None	
3	3	IE802E	INDUSTRIAL ENGINEERING 1 EXIT EXAM	-	-	0.0	IE112-1, IE113-1, EECO102, IE102	None	
3	3	IEELEC01	IE ELECTIVE 1	3.75	-	3.0	None	None	
3	3	SS023	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None	
3	3	HUM039	ETHICS	3.75	-	3.0	None	None	
<b>TOTAL</b>				<b>21.25</b>	<b>11.25</b>	<b>19.0</b>			

## FOURTH YEAR

1 <sup>st</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
4	1	CAP200D-1	CAPSTONE DESIGN / THESIS 2 (LABORATORY)	-	3.75	1.0	CAP200D	None	
4	1	IE132-1	FACILITIES PLANNING AND DESIGN PRINCIPLES	3.75	-	3.0	IE131-1	None	
4	1	IE151-1	PROJECT FEASIBILITY	2.50	-	2.0	ACT113, IE131-1	None	
4	1	IE152-1	SYSTEMS ENGINEERING	3.75	-	3.0	IE131-1	None	
4	1	IE803E	INDUSTRIAL ENGINEERING 2 EXIT EXAM	-	-	0.0	IE114-1, IE121-1, IE122-1, IE131-2	None	
4	1	IE133-1	SUPPLY CHAIN MANAGEMENT	3.75	-	3.0	IE131-1	None	
4	1	IEELEC02	IE ELECTIVE 2	3.75	-	3.0	None	None	
4	1	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	-	3.0	None	None	
4	1	IE198-3	IE CORRELATION 1	-	7.5	(1.0)	MATH800E, IE801E	None	
<b>TOTAL</b>				<b>21.25</b>	<b>9.75</b>	<b>18.0</b>			

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
4	2	CAP200D-2	CAPSTONE DESIGN / THESIS 3 (LABORATORY)	-	3.75	1.0	CAP200D-1	None	
4	2	IE141-1	SYSTEMS SIMULATION	1.25	-	1.0	IE122-1, IE132-1	None	
4	2	IE141L-1	SYSTEMS SIMULATION (LABORATORY)	-	3.75	1.0	IE122-1, IE132-1	IE141-1	
4	2	IE151F-1	PROJECT FEASIBILITY (FIELD)	-	3.75	1.0	IE151-1	None	
4	2	IEELEC03	IE ELECTIVE 3	3.75	-	3.0	None	None	
4	2	IEELEC04	IE ELECTIVE 4	3.75	-	3.0	None	None	
4	2	IE198-4	IE CORRELATION 2	-	7.5	(1.0)	IE132-1, IE152-1, IE802E, IE803E	None	
<b>TOTAL</b>				<b>8.75</b>	<b>17.25</b>	<b>10.0</b>			

3 <sup>rd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
4	3	IE191F-1	IE SEMINARS AND PLANT VISITS (FIELD)	-	3.75	1.0	IE131-1	None	
4	3	IE199R-1	IE PRACTICUM	-	18.00	3.0	IE112-1, HUM039, IE133-1, IE132-1	None	
4	3	SAF102	BASIC OCCUPATIONAL SAFETY AND HEALTH	3.75	-	3.0	CHM031	None	
4	3	SGE101	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None	
<b>TOTAL</b>				<b>3.75</b>	<b>21.75</b>	<b>7.0</b>			

# BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Curriculum based on [relevant CHED CMO], applicable to freshmen beginning school year 2023-2024

## FIRST YEAR

1 <sup>st</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	1	CHM031	CHEMISTRY FOR ENGINEERS	3.75	-	3.0	None	None	
1	1	CHM031L	CHEMISTRY FOR ENGINEERS (LABORATORY)	-	3.75	1.0	None	CHM031	
1	1	ENG023	RECEPTIVE COMMUNICATION SKILLS	3.75	-	3.0	None	None	
1	1	HUM021	LOGIC AND CRITICAL THINKING	3.75	-	3.0	None	None	
1	1	MATH031	MATHEMATICS FOR ENGINEERS	3.75	-	3.0	None	None	
1	1	ME100	ORIENTATION TO MECHANICAL ENGINEERING	2.50	-	1.0	None	None	
1	1	NSTP010	NATIONAL SERVICE TRAINING PROGRAM 1	3.75	-	(3.0)	None	None	
1	1	VE021	LIFE COACHING SERIES 1	1.25	-	(1.0)	None	None	
<b>TOTAL</b>				<b>22.50</b>	<b>3.75</b>	<b>14.0</b>			

2 <sup>nd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	2	DRAW021W	ENGINEERING DRAWING 1	-	3.75	1.0	None	None	
1	2	ENG024	WRITING FOR ACADEMIC STUDIES	3.75	-	3.0	None	None	
1	2	MATH035	MATHEMATICS IN THE MODERN WORLD	3.75	-	3.0	None	None	
1	2	MATH041	ENGINEERING CALCULUS 1	5.00	-	4.0	MATH031	None	
1	2	SS021	UNDERSTANDING THE SELF	3.75	-	3.0	None	None	
1	2	SS022	READINGS IN PHILIPPINE HISTORY	3.75	-	3.0	None	None	
1	2	NSTP011P	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)	2.50	3.75	(3.0)	NSTP010	None	
1	2	VE022	LIFE COACHING SERIES 2	1.25	-	(1.0)	VE021	None	
<b>TOTAL</b>				<b>23.75</b>	<b>7.50</b>	<b>17.0</b>			

3 <sup>rd</sup> Term									
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites	
1	3	DRAW023L-1	COMPUTER-AIDED DRAFTING (LABORATORY)	-	3.75	1.0	DRAW021W	None	
1	3	HUM039	ETHICS	3.75	-	3.0	None	None	
1	3	MATH042	ENGINEERING CALCULUS 2	5.00	-	4.0	MATH041	None	
1	3	IE101-1	ENGINEERING DATA ANALYSIS	3.75	-	3.0	MATH041	None	
1	3	PHY035	PHYSICS FOR ENGINEERS	5.00	-	4.0	MATH041	None	
1	3	PHY035L	PHYSICS FOR ENGINEERS (LABORATORY)	-	3.75	1.0	MATH041	PHY035	
1	3	PE001	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1	-	2.50	2.0	None	None	
1	3	VE023	LIFE COACHING SERIES 3	1.25	-	(1.0)	VE022	None	
<b>TOTAL</b>				<b>18.75</b>	<b>10.00</b>	<b>18.0</b>			

## SECOND YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	1	EE104-3	BASIC ELECTRICAL ENGINEERING FOR ME	2.50	-	2.0	PHY035	None
2	1	EE104L-3	BASIC ELECTRICAL ENGINEERING FOR ME (LABORATORY)	-	3.75	1.0	PHY035L	EE104-3
2	1	ENG041	PURPOSIVE COMMUNICATION	3.75	-	3.0	None	None
2	1	GEELEC01	GE ELECTIVE 1	3.75	-	3.0	None	None
2	1	MATH056	DIFFERENTIAL EQUATIONS	3.75	-	3.0	MATH042	None
2	1	ME101L	WORKSHOP THEORY AND PRACTICE (LABORATORY)	-	3.75	1.0	DRAW021W	None
2	1	ME111-1	THERMODYNAMICS	3.75	-	3.0	MATH042, PHY035	None
2	1	MEC101-2	STATICS OF RIGID BODIES	3.75	-	3.0	MATH042, PHY035	None
2	1	PE002	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2	-	2.50	2.0	None	None
<b>TOTAL</b>				<b>21.25</b>	<b>10.00</b>	<b>21.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	2	ACT099	ACCOUNTING FOR NON-ACCOUNTANT	1.25		1.0	None	None
2	2	CPE001L	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)	-	3.75	1.0	None	None
2	2	ECE121L	COMPUTER-AIDED CALCULATIONS (LABORATORY)	-	3.75	1.0	None	None
2	2	EE108-1	DC/AC MACHINERY	2.50	-	2.0	EE104-3	None
2	2	EE108L-1	DC/AC MACHINERY (LABORATORY)	-	3.75	1.0	EE104L-3	EE108-1
2	2	EECO102	ENGINEERING ECONOMY	3.75	-	3.0	IE101-1	None
2	2	MATH116	ADVANCED ENGINEERING MATHEMATICS	3.75	-	3.0	MATH056	None
2	2	ME102L	MACHINE SHOP THEORY AND PRACTICE 1 (LABORATORY)	-	3.75	1.0	ME101L	None
2	2	ME112-1	THERMODYNAMICS 2	3.75	-	3.0	ME111-1	None
2	2	MEC102-1	DYNAMICS OF RIGID BODIES	2.50	-	2.0	MEC101-2	None
2	2	PE003	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3	-	2.50	2.0	PE001, PE002	None
<b>TOTAL</b>				<b>17.50</b>	<b>17.50</b>	<b>20.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
2	3	CE104-1	MECHANICS OF DEFORMABLE BODIES FOR ME	3.75	-	3.0	MEC102-1	None
2	3	CE120	FLUID MECHANICS FOR ME	3.75	-	3.0	ME111-1	None
2	3	ECE104-1	BASIC ELECTRONICS	2.50	-	2.0	EE104-3	None
2	3	ECE104L-1	BASIC ELECTRONICS (LABORATORY)	-	3.75	1.0	EE104L-3	ECE104-1
2	3	EMGT100	ENGINEERING MANAGEMENT	2.50	-	2.0	ECCO102	None
2	3	EMGT100L	PROJECT MANAGEMENT (LABORATORY)	-	3.75	1.0	ECCO102	None
2	3	MATH161	NUMERICAL METHODS	3.75	-	3.0	MATH116	None
2	3	MATH161L	NUMERICAL METHODS (LABORATORY)	-	3.75	1.0	MATH116, ECE121L	MATH161
2	3	MATH800E	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	IE101-1, MATH056	MATH116
2	3	SS036	SCIENCE, TECHNOLOGY, AND SOCIETY	3.75	-	3.0	None	None
2	3	PE004	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4	-	2.50	2.0	PE001, PE002	None
<b>TOTAL</b>				<b>17.50</b>	<b>17.50</b>	<b>20.0</b>		

## THIRD YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	1	DS100L	APPLIED DATA SCIENCE LABORATORY	-	3.75	1.0	None	None
3	1	EENV102	ENVIRONMENTAL SCIENCE AND ENGINEERING	3.75	-	3.0	CHM031	None
3	1	ME113-1	HEAT TRANSFER	2.50	-	2.0	ME112-1, MATH056	None
3	1	ME114-1	COMBUSTION ENGINEERING	2.50	-	2.0	ME112-1	None
3	1	ME130L-1	COMPUTER APPLICATIONS FOR MECHANICAL ENGINEERS (LABORATORY)	-	3.75	1.0	CPE001L	None
3	1	ME801E	ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	CHM031, PHY035, EECO102, MEC101-2, MEC102-1	None
3	1	MSE102-1	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING FOR ME	2.50	-	2.0	CE104-1, CHM031	None
3	1	MSE102L-1	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING FOR ME (LABORATORY)	-	3.75	1.0	CE104-1, CHM031	MSE102-1
3	1	ME124P-1	MACHINE ELEMENTS (PAIRED)	2.50	3.75	3.0	MEC102-1	None
3	1	SS023	THE CONTEMPORARY WORLD	3.75	-	3.0	None	None
3	1	TEC100-2	TECHNOPRENEURSHIP	3.75	-	3.0	EMGT100, ACT099	None
<b>TOTAL</b>				<b>21.25</b>	<b>15.00</b>	<b>21.0</b>		

2 <sup>nd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	1	CPE126	ARTIFICIAL INTELLIGENCE	2.50	-	2.0	DS100L	None
3	1	CPE126L	ARTIFICIAL INTELLIGENCE (LABORATORY)	-	3.75	1.0	DS100L	None
3	1	HUM034	ART APPRECIATION	3.75	-	3.0	None	None
3	1	ME103L	MACHINE SHOP THEORY AND PRACTICE 2 (LABORATORY)	-	3.75	1.0	ME102L	None
3	1	ME115-1	REFRIGERATION SYSTEMS	2.50	-	3.0	ME113-1	None
3	1	ME141L-1	MECHANICAL ENGINEERING 1 (LABORATORY)	-	3.75	1.0	ME112-1	None
3	1	ME151-1	FLUID MACHINERIES	3.75	-	3.0	CE120	None
3	1	ME802E	MECHANICAL ENGINEERING 1 EXIT EXAM	-	-	0.0	ME124P-1, ME111-1, ME112-1, ME101L, CE120	None
3	1	MEELEC01	ME ELECTIVE 1	3.75	-	3.0	None	None
3	1	RES101	METHODS OF RESEARCH	3.75	-	3.0	IE101-1, ENG024	None
<b>TOTAL</b>				<b>21.25</b>	<b>15.00</b>	<b>21.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
3	3	CAP200D	CAPSTONE DESIGN / THESIS 1 (LABORATORY)	-	3.75	1.0	RES101	None
3	3	ME116-1	AIR-CONDITIONING AND VENTILATION SYSTEMS	3.75	-	3.0	ME115-1	None
3	3	ME131-1	MACHINE DESIGN 1	3.75	-	3.0	ME124P-1	None
3	3	ME142L-1	MECHANICAL ENGINEERING 2 (LABORATORY)	-	7.50	2.0	ME141L-1, ME151-1	None
3	3	ME162	POWER PLANT DESIGN WITH RENEWABLE ENERGY	3.75	-	3.0	ME114-1, ME151-1	None
3	3	ME162L	POWER PLANT DESIGN WITH RENEWABLE ENERGY (LABORATORY)		3.75	1.0	ME114-1, ME151-1	ME162
3	3	ME172	VIBRATION ENGINEERING	2.50	-	2.0	MATH056	None
3	3	MEELEC02	ME ELECTIVE 2	3.75	-	3.0	None	None
3	3	SS038	THE LIFE AND WORKS OF JOSE RIZAL	3.75	-	3.0	None	None
<b>TOTAL</b>				<b>21.25</b>	<b>15.00</b>	<b>21.0</b>		

## FOURTH YEAR

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	1	CAP200D-1	CAPSTONE DESIGN / THESIS 2 (LABORATORY)	-	3.75	1.0	CAP200D	None
4	1	ECE135-1	CONTROL ENGINEERING	3.75	-	2.0	ECE104-1	None
4	1	ECE135L-1	CONTROL ENGINEERING (LABORATORY)	-	3.75	1.0	ECE104-1	ECE135-1
4	1	ME132P-1	MACHINE DESIGN 2 (PAIRED)	3.75	3.75	4.0	ME131-1	None
4	1	ME143L-1	MECHANICAL ENGINEERING 3 (LABORATORY)	-	7.50	2.0	ME142L-1, ME162P	None
4	1	ME803E	MECHANICAL ENGINEERING 3 EXIT EXAM	-	-	0.0	ME162P, ME116-1, ME131-1, ME151-1	ME132P-1
4	1	MEELEC03	ME ELECTIVE 3	3.75	-	3.0	None	None
4	1	SS085	PHILIPPINE INDIGENOUS COMMUNITIES	3.75	-	3.0	None	None
4	1	ME198-3	ME CORRELATION 1	-	7.5	(1.0)	MATH800E, ME801E	None
<b>TOTAL</b>				<b>15.00</b>	<b>24.75</b>	<b>16.0</b>		

1 <sup>st</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	2	CAP200D-2	CAPSTONE DESIGN / THESIS 3 (LABORATORY)	-	3.75	1.0	CAP200D-1	None
4	2	ME117P-1	INDUSTRIAL PLANT ENGINEERING (PAIRED)	3.75	3.75	4.0	ME116-1	ME191P
4	2	ME181	ME LAWS, CONTRACTS AND ETHICS	3.75	-	3.0	HUM039	None
4	2	GEELEC02	GE ELECTIVE 2	3.75	-	3.0	None	None
4	2	ME198-2	ME CORRELATION 2	-	7.5	(1.0)	ECE135-1, ME132P-1, ME802E, ME803E	None
<b>TOTAL</b>				<b>11.25</b>	<b>13.50</b>	<b>11.0</b>		

3 <sup>rd</sup> Term								
Year	Term	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prerequisites	Co-requisites
4	3	ME191P	MANUFACTURING & INDUSTRIAL PROCESSES WITH PLANT VISITS (PAIRED)	1.25	3.75	2.0	MSE102-1	None
4	3	ME199R-1	ME PRACTICUM	-	18.00	3.0	ME112-1, ME102L, HUM039	None
4	3	SAF102	BASIC OCCUPATIONAL SAFETY AND HEALTH	3.75		3.0	CHM031	None
4	3	SGE101	STUDENT GLOBAL EXPERIENCE	-	-	0.0	None	None
<b>TOTAL</b>				<b>5.00</b>	<b>21.75</b>	<b>8.00</b>		

# DESCRIPTION OF COURSES

## BACHELOR OF SCIENCE IN ARCHITECTURE

### CORE COURSES

<b>Course Code</b>	AR001
<b>Course Title</b>	ARCHITECTURE ORIENTATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0
<b>Course Description:</b>	Introduction to various tracks of specialization of architecture, emphasis on ethics, responsibility and professionalism.

<b>Course Code</b>	AR100P
<b>Course Title</b>	ARCHITECTURAL DESIGN 1: INTRODUCTION TO DESIGN (PAIRED)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Course Description:</b>	Design fundamentals involving basic creative design exercises with emphasis on space, form and mass.

<b>Course Code</b>	AR101P-1
<b>Course Title</b>	ARCHITECTURAL DESIGN 2: CREATIVE DESIGN FUNDAMENTALS (PAIRED)
<b>Pre-Requisite</b>	AR100P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Course Description:</b>	Design exercises involving anthropometrics, modular coordination, functional relationships and activity circuits including basic design techniques and tools.

<b>Course Code</b>	AR102P-1
<b>Course Title</b>	ARCHITECTURAL DESIGN 3: CREATIVE DESIGN IN ARCHITECTURAL INTERIORS (PAIRED)
<b>Pre-Requisites</b>	AR101P-1, AR121, AR122P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	Design exercises stressing the value of programming, orientation, and inter-relationship of interior spaces.

<b>Course Code</b>	AR103P-1
<b>Course Title</b>	ARCHITECTURAL DESIGN 4: SPACE PLANNING 1 (PAIRED)
<b>Pre-Requisite</b>	AR102P-1

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Design exercises involving innovative approaches on vernacular architecture including energy conservation and space management.	

<b>Course Code</b>	AR104P-1
<b>Course Title</b>	ARCHITECTURAL DESIGN 5: SPACE PLANNING 2 (PAIRED)
<b>Pre-Requisite</b>	AR103P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

<b>Course Description:</b>	
Design exercises stressing the analysis of space requirements based on organizational structure, functional set up and human behaviour to focus on linkages and interaction to spaces.	

<b>Course Code</b>	AR105P-1
<b>Course Title</b>	ARCHITECTURAL DESIGN 6: SITE DEVELOPMENT PLANNING AND LANDSCAPING (PAIRED)
<b>Pre-Requisite</b>	AR104P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

<b>Course Description:</b>	
Design exercises stressing environmental analysis, aesthetic, topographic, geologic, and seismologic conditions, utilities, circulations, legal considerations and sensitivities of man.	

<b>Course Code</b>	AR106P-1
<b>Course Title</b>	ARCHITECTURAL DESIGN 7: COMMUNITY ARCHITECTURE AND URBAN DESIGN (PAIRED)
<b>Pre-Requisite</b>	AR105P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	5.0

<b>Course Description:</b>	
Design exercises giving emphasis on the socio-cultural activities of man, architectural conservation, proxemics and materials for architecture and designing with nature.	

<b>Course Code</b>	AR107P-1
<b>Course Title</b>	ARCHITECTURAL DESIGN 8: DESIGN OF COMPLEX STRUCTURES (PAIRED)
<b>Pre-Requisite</b>	AR106P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	5.0

<b>Course Description:</b>	
Design exercises giving emphasis to process and development of building structures, utilities, laws, structural concepts and ecological planning.	

<b>Course Code</b>	AR110P
<b>Course Title</b>	ARCHITECTURAL VISUAL COMMUNICATIONS 1: GRAPHICS 1 (PAIRED)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	3.0
<b>Course Description:</b>	
The study of visual communication, typography, alphabet of lines and their applications and the use and care of instruments, geometric construction, use of scale, mensuration and dimensioning. Emphasis is given to the study of the theory of projection with analysis of the relationship between points, lines and planes in space. Includes exercises on surface development and graphic presentation.	

<b>Course Code</b>	AR111P
<b>Course Title</b>	ARCHITECTURAL VISUAL COMMUNICATIONS 3: GRAPHICS 2 (PAIRED)
<b>Pre-Requisite</b>	AR110P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
An introduction to measured drawings applying graphic conventions; the study of pictorial presentation and perspective projections; plotting of shades and shadows in both orthographic and perspective drawings	

<b>Course Code</b>	AR112P
<b>Course Title</b>	ARCHITECTURAL VISUAL COMMUNICATIONS 2: VISUAL TECHNIQUES 1 (PAIRED)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>	
The study of visualization and graphic presentation in the form of freehand drawings including still-life and architectural forms and entourage using different media, in black and white/monochrome.	

<b>Course Code</b>	AR113P
<b>Course Title</b>	ARCHITECTURAL VISUAL COMMUNICATIONS 4: VISUAL TECHNIQUES 2 (PAIRED)
<b>Pre-Requisite</b>	AR112P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>	
An introduction to the study of color as form-giver; psychology of color; theories of light and color; scientific and aesthetic considerations of color; study and exercises on the use of color as presentation tool; architectural presentations and outdoor color rendering using appropriate techniques in color mixing and application and various media such as watercolor, acrylic paints, pastel etc.	

<b>Course Code</b>	AR114P
<b>Course Title</b>	ARCHITECTURAL VISUAL COMMUNICATIONS 5: VISUAL TECHNIQUES 3 (PAIRED)
<b>Pre-Requisite</b>	AR113P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>	
Covers exercises on advanced techniques of presentation using mixed media. Includes the study of multi-media composition/digital presentation, photography and computer generation.	

<b>Course Code</b>	AR120P
<b>Course Title</b>	THEORY OF ARCHITECTURE 1 (PAIRED)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Design theories with emphasis on perceptual and proxemic sensitivities in organizing forms and space.

<b>Course Code</b>	AR121
<b>Course Title</b>	THEORY OF ARCHITECTURE 2
<b>Pre-Requisite</b>	AR120P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Evaluation of current concepts, goals, processes and methodologies applicable to architectural design.

<b>Course Code</b>	AR122P-1
<b>Course Title</b>	ARCHITECTURAL INTERIORS (PAIRED)
<b>Pre-Requisite</b>	AR120P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Basic design of interior spaces geared toward initial understanding of theories and principles in architectural interiors in relation to anthropometrics, proxemics and ergonomics.

<b>Course Code</b>	AR130
<b>Course Title</b>	BUILDING TECHNOLOGY 1: BUILDING MATERIALS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Building materials- its properties, composition, application and articulation including the mode of specifying these materials in building construction.

<b>Course Code</b>	AR131P-1
<b>Course Title</b>	BUILDING TECHNOLOGY 2: CONSTRUCTION DRAWINGS IN WOOD STEEL AND CONCRETE (1 STOREY BUILDING) (PAIRED)
<b>Pre-Requisite</b>	AR130, AR140P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Construction methods and techniques and the production of working drawings of a one (1)-storey building structure in wood, masonry, reinforced concrete and steel.

<b>Course Code</b>	AR132P-1
<b>Course Title</b>	BUILDING TECHNOLOGY 3: CONSTRUCTION DRAWINGS IN WOOD STEEL AND CONCRETE (2 STOREY BUILDING) (PAIRED)
<b>Pre-Requisite</b>	AR131P-1, AR140P

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Construction methods and techniques and the production of working drawings of a medium-rise building of reinforced concrete, masonry, glass and steel	

<b>Course Code</b>	AR133P-1
<b>Course Title</b>	BUILDING TECHNOLOGY 4: SPECIFICATION WRITING AND QUANTITY SURVEYING (PAIRED)
<b>Pre-Requisite</b>	AR132P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Specifications writing using uniform system or master format, estimating methods and quantity surveying.	

<b>Course Code</b>	AR134P-1
<b>Course Title</b>	BUILDING TECHNOLOGY 5: ALTERNATIVE BUILDING CONSTRUCTION SYSTEMS (PAIRED)
<b>Pre-Requisite</b>	AR133P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Construction methods and techniques for different types of buildings using any appropriate alternative building construction system.	

<b>Course Code</b>	AR135
<b>Course Title</b>	THEORY OF STRUCTURES
<b>Pre-Requisite</b>	CE104-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
The course is about the determination of values of shear, moments and deflections of statically determinate & indeterminate beams.	

<b>Course Code</b>	AR136-1
<b>Course Title</b>	THEORY OF STRUCTURES
<b>Pre-Requisite</b>	CE104-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
The course is about the determination of values of shear, moments and deflections of statically determinate & indeterminate beams.	

<b>Course Code</b>	AR137-1
<b>Course Title</b>	ARCHITECTURAL STRUCTURES
<b>Pre-Requisite</b>	AR136-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	

The course is about the design and investigation of simple reinforced concrete structures.

<b>Course Code</b>	AR140P
<b>Course Title</b>	BUILDING UTILITIES 1: PLUMBING AND SANITARY SYSTEMS (PAIRED)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Principles and practices in plumbing and sanitary systems- its design, installation, operation and maintenance in buildings in relation to the immediate surroundings or environment.

<b>Course Code</b>	AR141P
<b>Course Title</b>	BUILDING UTILITIES 2: ELECTRICAL, ELECTRONICS AND MECHANICAL SYSTEMS (PAIRED)
<b>Pre-Requisite</b>	AR140P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Electrical and mechanical systems in buildings- materials, equipment, design, installation and maintenance.

<b>Course Code</b>	AR142P
<b>Course Title</b>	BUILDING UTILITIES 3: ACOUSTICS AND LIGHTING SYSTEMS (PAIRED)
<b>Pre-Requisite</b>	AR141P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The psycho-physics of acoustics and lighting- its measurement, analysis and application to architectural discipline.

<b>Course Code</b>	AR150
<b>Course Title</b>	HISTORY OF ARCHITECTURE 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Architectural manifestation of thoughts from the beginning of civilization to the Byzantine Period.

<b>Course Code</b>	AR151
<b>Course Title</b>	HISTORY OF ARCHITECTURE 2
<b>Pre-Requisite</b>	AR150
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Architectural manifestation of civilization and thoughts during the era of western dominance towards post modernism.

<b>Course Code</b>	AR152
<b>Course Title</b>	HISTORY OF ARCHITECTURE 3
<b>Pre-Requisite</b>	AR151
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Architectural reflections of traditional Asian thoughts and civilizations: their changes and challenges in contemporary life.

<b>Course Code</b>	AR153
<b>Course Title</b>	HISTORY OF ARCHITECTURE 4
<b>Pre-Requisite</b>	AR152
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Reflections on architecture in the Philippines: their changes and challenges in contemporary life and the ideology of conserving its architectural legacies.

<b>Course Code</b>	AR161-1
<b>Course Title</b>	PLANNING 1: SITE PLANNING AND LANDSCAPE ARCHITECTURE
<b>Pre-Requisite</b>	CE101-4, CE101F-4, AR170
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The artistic and functional arrangement of buildings, open spaces, service areas, circulation and other external areas; techniques in the enhancement and design of exterior environments.

<b>Course Code</b>	AR162-1
<b>Course Title</b>	PLANNING 2: FUNDAMENTALS OF URBAN DESIGN AND COMMUNITY ARCHITECTURE
<b>Pre-Requisite</b>	AR161-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Spatial Order, Socio –Cultural expression in the design of the exterior environment in neighbourhoods, communities, towns & cities.

<b>Course Code</b>	AR163-1
<b>Course Title</b>	PLANNING 3: INTRODUCTION TO URBAN AND REGIONAL PLANNING
<b>Pre-Requisite</b>	AR162-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Concepts & emerging trends, methods & techniques in urban and regional planning; design of human settlements, and overview of land use in the planning of regions.

<b>Course Code</b>	AR170
<b>Course Title</b>	TROPICAL DESIGN
<b>Pre-Requisite</b>	NONE

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Course Description:</b>	
Techniques for the design and planning of buildings within the technological and social constraints prevailing in the hot-humid tropics.	

<b>Course Code</b>	AR171-1
<b>Course Title</b>	HOUSING
<b>Pre-Requisite</b>	AR162-1, AR181
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Course Description:</b>	
Socio-Cultural and Institutional Challenges for Effective Delivery of Housing in the Philippines.	

<b>Course Code</b>	AR181
<b>Course Title</b>	PROFESSIONAL PRACTICE 1: LAWS AFFECTING THE PRACTICE OF ARCHITECTURE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Legal obligations and responsibilities of the Architect. The course is designed to provide the students with the basic knowledge of all laws related to the practice of architecture.	

<b>Course Code</b>	AR182
<b>Course Title</b>	PROFESSIONAL PRACTICE 2: ADMINISTERING THE REGULAR SERVICE OF THE ARCHITECT
<b>Pre-Requisite</b>	AR181
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Architecture as a Profession, Ethical Norms and Office Procedures. The course is designed to provide the students with the basic understanding of the practice of architecture pertaining to the basic services the architect renders within the context of professionalism, ethical conduct and quality service delivery.	

<b>Course Code</b>	AR183
<b>Course Title</b>	PROFESSIONAL PRACTICE 3: GLOBAL PRACTICE FOR 21 <sup>ST</sup> CENTURY
<b>Pre-Requisite</b>	AR182
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0.0
<b>Course Description:</b>	
The Architect, the Firm, the Project in the Global Arena. The course is designed to provide the students with an expanded view of the role of the architect in the built environment and the emerging transformation of the practice of architecture in a global setting.	

<b>Course Code</b>	AR184
<b>Course Title</b>	BUSINESS MANAGEMENT AND APPLICATION FOR ARCHITECTS 1

<b>Pre-Requisite</b>	AR183
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers business management for architecture that will help students understand how to be a better manager through planning, decision-making, motivating, leading and communicating effectively.

<b>Course Code</b>	AR185
<b>Course Title</b>	BUSINESS MANAGEMENT AND APPLICATION FOR ARCHITECTURE 2
<b>Pre-Requisite</b>	AR183
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a continuation of business management for architecture. This course covers good management practices starting, growing and maintaining a business to achieve business success.

<b>Course Code</b>	AR191F
<b>Course Title</b>	ARCHITECTURE SEMINAR
<b>Pre-Requisite</b>	AR107P-1, AR137-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with a series of lectures and seminars on selected topics that are highly relevant to architecture but are not covered in any of the other formal courses. It covers recent advances in architecture. It is also a venue for the students to present their projects and researches in architecture.

<b>Course Code</b>	AR198-3
<b>Course Title</b>	AR CORRELATION 1
<b>Pre-Requisite</b>	MATH027-1, CE104-3, AR801E, AR802E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course is designed to review the basic architecture concepts and theories of topics taken up in the initial professional course cluster to ensure mastery and retention.

<b>Course Code</b>	AR198-4
<b>Course Title</b>	AR CORRELATION 2
<b>Pre-Requisite</b>	AR198, AR107P-1, AR137-1, AR803E, AR804E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course is designed to review the advanced concepts and theories of topics taken up in the professional course cluster to ensure mastery and retention.

<b>Course Code</b>	AR199R-1
<b>Course Title</b>	AR PRACTICUM
<b>Pre-Requisite</b>	AR105P-1, HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Actual On-the-Job Training or Industry Internship in the field of specialization.

<b>Course Code</b>	AR200P-2
<b>Course Title</b>	ARCHITECTURE DESIGN 9: THESIS RESEARCH WRITING (PAIRED)
<b>Pre-Requisite</b>	RES101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	5.0

**Course Description:**

Design exercises stressing the importance of collaboration in solving architectural problems; preliminary research and studies for the terminal project.

<b>Course Code</b>	AR200P-3
<b>Course Title</b>	ARCHITECTURAL DESIGN 10: THESIS RESEARCH APPLICATION
<b>Pre-Requisite</b>	AR200P-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	5.0

**Course Description:**

Terminal project involving a comprehensive problem in building, interior and landscape architecture integrating the process and issues of previous studies.

<b>Course Code</b>	AR801E
<b>Course Title</b>	THEORY OF ARCHITECTURE EXIT EXAM
<b>Pre-Requisite</b>	AR121
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the select professional courses to ensure mastery and retention.

<b>Course Code</b>	AR802E
<b>Course Title</b>	HISTORY OF ARCHITECTURE EXIT EXAM
<b>Pre-Requisite</b>	AR153
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the select professional courses to ensure mastery and retention.

<b>Course Code</b>	AR803E
<b>Course Title</b>	BUILDING TECHNOLOGY & UTILITIES EXIT EXAM
<b>Pre-Requisite</b>	AR142P, AR134P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the select professional courses to ensure mastery and retention.

<b>Course Code</b>	AR804E
<b>Course Title</b>	PLANNING AND PROFESSIONAL PRACTICE EXIT EXAM
<b>Pre-Requisite</b>	AR163-1, AR171-1, AR183
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the select professional courses to ensure mastery and retention.

<b>Course Code</b>	CE101-4
<b>Course Title</b>	SURVEYING
<b>Pre-Requisite</b>	MATH014-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course deals with Measurement of distance and distance corrections, the use of surveying instruments, area computations, balancing the traverse, elevation determination, and leveling..

<b>Course Code</b>	CE101F-4
<b>Course Title</b>	SURVEYING (FIELD)
<b>Pre-Requisite</b>	MATH014-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Proper handling and utilization of surveying instrument will be taken. Students will learn how to perform measurement of distance and apply distance corrections, use and proper handling of surveying instruments, and perform calculations related to area computations, latitude and departure computations, DMD and DPD methods of land area determination, balancing the traverse, elevation determination, and leveling.

<b>Course Code</b>	CE104-3
<b>Course Title</b>	MECHANICS OF DEFORMABLE BODIES FOR AR
<b>Pre-Requisite</b>	MEC101-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course covers the fundamental concepts of stresses and strains such as axial stress, shearing stress, bearing stress, torsion, flexural stress and strain-stress relationship.

<b>Course Code</b>	CPE127
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE FOR AR
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course gives you in-depth guidance on the frameworks and tools available, in order to develop AI architectures that will meet the demands of modern business. The course helps in ensuring that you are developing a comprehensive AI competency for yourself and your organisation. This demonstrates that you are taking the necessary steps to create an AI architecture which will be effective in creating business value.

<b>Course Code</b>	DRAW041P
<b>Course Title</b>	COMPUTER-AIDED DESIGN AND DRAFTING FOR ARCHITECTURE 1 (PAIRED)
<b>Pre-Requisite</b>	AR114P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

A basic introduction on computer and software programs useful in architectural practice. The course deals with aspects of architectural 2D & 3D drafting and design.

<b>Course Code</b>	DRAW042P
<b>Course Title</b>	COMPUTER – AIDED DESIGN AND DRAFTING FOR ARCHITECTURE 2
<b>Pre-Requisite</b>	DRAW041P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

An advanced computer-aided architectural rendering, modeling and animation using current software.

<b>Course Code</b>	DS100L
<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.

<b>Course Code</b>	MATH014 – 1
<b>Course Title</b>	SOLID MESURATION
<b>Pre-Requisite</b>	MATH021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course covers topics on mensuration of plane figures in space, and. It also deals with determination of volumes and surface areas of solid figures such as prisms, cylinders, pyramids, cones, frustums, prismoids, spheres and solids of revolution

<b>Course Code</b>	MATH021
<b>Course Title</b>	COLLEGE MATHEMATICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed to strengthen students' skills and knowledge in the three fundamental areas of mathematics: algebra, trigonometry, and pre-calculus. It provides students with sound mathematical foundation to be better equipped for their subsequent Advanced courses in the future.

<b>Course Code</b>	MATH027-1
<b>Course Title</b>	DIFFERENTIAL AND INTEGRAL CALCULUS
<b>Pre-Requisite</b>	MATH021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

An introductory course covering the core concepts of limit, continuity and differentiability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations, partial differentiation, and transcendental curve tracing. It also introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

<b>Course Code</b>	MEC101-3
<b>Course Title</b>	STATICS OF RIGID BODIES FOR AR
<b>Pre-Requisite</b>	MATH027-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with the forces acting on non-moving bodies. It covers concurrent and non-concurrent forces, operation with the free body concepts, equilibrium of coplanar and non-coplanar systems, friction forces, centroids and moments of inertia.

<b>Course Code</b>	RES101-1
<b>Course Title</b>	METHODS OF RESEARCH FOR AR
<b>Pre-Requisite</b>	ENG024, AR107P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Quantitative and operational methods in architectural design research activity, requirement in use analysis

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

## GENERAL EDUCATION COURSES

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	3.0
<b>Course Description:</b>	
This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.	

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
Ethics deals with the principles of ethical behavior in modern society at the level of the person, society, and in interactions with the environment and other shared resources. Morality pertains to the standards of right and wrong that an individual originally picks up from the community. The course discusses the context and principles of ethical behavior in modern society at the level of individual, society, and interaction with the environment.

<b>Course Code</b>	HUM081
<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these

topics, students are encouraged to go beyond the typical understanding of mathematics as merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

#### **Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal is for the students to understand and appreciate our rich past by deriving insights from those who were actually present at the time of the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels *Noli Me Tangere* and *El Filibusterismo*, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE

Credit units	1.0
<b>Course Description:</b>	
The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Don'ts among professionals, especially in culturally pluralistic spaces such as Mindanao.	

# BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

<b>Course Code</b>	ACT099
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course seeks to enable participants with little to no accounting background to explain and apply the principles, basic tools, and techniques of the accounting process.

<b>Course Code</b>	CAP200D
<b>Course Title</b>	CAPSTONE DESIGN/ THESIS 1 (LABORATORY)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	CAP200D-1
<b>Course Title</b>	CAPSTONE DESIGN/ THESIS 2 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Implementation of a capstone project based on an approved proposal.

<b>Course Code</b>	CAP200D-2
<b>Course Title</b>	CAPSTONE DESIGN/ THESIS 3 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1

**Course Description:**

Oral presentation and Final Defense

<b>Course Code</b>	CHE100
<b>Course Title</b>	CHEMICAL ENGINEERING ORIENTATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Introduction to various tracks of specialization of chemical engineering, emphasis on ethics, responsibility and professionalism.

<b>Course Code</b>	CHE103
<b>Course Title</b>	PROCESS SAFETY
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The covers all the aspects of safety in relation to the industrial field including government regulations and audit and inspection standards that will familiarize the student on the various aspects of safety in the industrial arena.

<b>Course Code</b>	CHE111C
<b>Course Title</b>	CHE CALCULATIONS 1 (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A comprehensive study on the fundamentals and principles of material and energy balances associated with chemical engineering operations and processes

<b>Course Code</b>	CHE123C-1
<b>Course Title</b>	CHEMICAL ENGINEERING THERMODYNAMICS (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE157-1, CHE111C
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the applications of the laws of thermodynamics to closed and open systems involving physical and chemical transformations of ideal and real fluids. Thermodynamic analysis of power and refrigeration cycles are also included.

<b>Course Code</b>	CHE124C-1
<b>Course Title</b>	SOLUTIONS THERMODYNAMICS (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE123C-1, MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Thermodynamic properties of homogeneous mixtures. Phase & chemical reaction equilibria. Calculations involving models on homogeneous mixtures, phase and chemical reaction equilibria.

<b>Course Code</b>	CHE130C-1
<b>Course Title</b>	MOMENTUM TRANSFER (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE111C, MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is intended to provide chemical engineering students a solid foundation on transport phenomena specifically on fluid mechanics and momentum transfer. The course specifically deals with the basic principles of transport processes and the fundamental concepts of the two branches of fluid mechanics (statics and dynamics) which are important to chemical engineering unit operations. The combined mass, energy and momentum balances are This is a laboratory course that involves actual preparation of industrial products commonly encountered in the chemical process industries such as manufacture of vegetable oil, refined vegetable oil, soap, wine, refined sugar, paper etc. and introduce concepts of product development and innovation

<b>Course Code</b>	CHE131L - 1
<b>Course Title</b>	CHEMICAL ENGINEERING 1(LABORATORY)
<b>Pre-Requisite</b>	CHE134C-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

A fundamental laboratory course in chemical engineering covering the applications of the theories of momentum transfer, heat transfer, evaporation, and solids handling and separation

<b>Course Code</b>	CHE132L - 1
<b>Course Title</b>	CHEMICAL ENGINEERING 2(LABORATORY)
<b>Pre-Requisite</b>	CHE131L-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

#### **Course Description:**

This laboratory course is a continuation of Chemical Engineering Laboratory I. It covers mainly laboratory experiments in Mass Transfer Operations such as diffusion, distillation, humidification, drying etc. Experiments in Reaction Kinetics using a continuous stirred tank reactor (CSTR) and a plug flow tubular reactor are also included in this laboratory course. This course is a continuation of Chemical Engineering Laboratory I. The course covers mainly experimental studies in mass transfer operations such as diffusion, distillation, humidification, drying, and experiments in kinetics and catalysis using pilot plant equipment.

<b>Course Code</b>	CHE133C- 1
<b>Course Title</b>	PARTICLE TECHNOLOGY (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE130C-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

An introductory course on the science and technology of handling, treatment of particles and powders with emphasis on separation processes such as screening, sedimentation, centrifugation, and fluidization. Integrated in this course is the design of the different types of filtration equipment operated at constant pressure, constant rate or a combined constant pressure preceded by constant rate.

<b>Course Code</b>	CHE134C-1
<b>Course Title</b>	HEAT AND MASS TRANSFER 1 (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE130C-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

#### **Course Description:**

This course discusses the Fourier Heat Transport equation and its application of heat flow by conduction, convection and radiation. Heat transfer and process analysis are studied for heat exchangers, evaporators and crystallizers. The course also discusses the principles of mass transport and its application in unimolecular and equimolar counter diffusion as well as simultaneous heat and mass transfer processes. Equipment design for gas absorption, gas-liquid contact operations, drying and adsorption are covered.

<b>Course Code</b>	CHE135C-1
<b>Course Title</b>	SEPARATION PROCESS (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE123C-1, CHE134C-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course covers the application of principles of equilibrium to stagewise separation operations, multicomponent cascades and membrane separation processes.

<b>Course Code</b>	CHE142C - 1
<b>Course Title</b>	CHEMICAL ENGINEERING DESIGN 1(COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE133C-1, CHE150-1, CHE172C
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	2.0
<b>Course Description:</b>	
This course is expected to complement the Plant Design course in the preparation of the design project. It includes equipment design in industrial plants, with emphasis on short-cut methods; piping system, pumps, pressure vessels, mass and heat transfer equipment, materials handling and using multiple constraints and applying engineering standards and codes appropriate for chemical engineering.	

<b>Course Code</b>	CHE143C-1
<b>Course Title</b>	CHEMICAL ENGINEERING DESIGN 2 (COMPUTATIONAL)
<b>Pre-Requisite</b>	CHE142C
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This is the capstone course which utilizes the fundamentals of chemical engineering in the design of a chemical plant. It includes the synthesis of process flow sheets, analysis of process conditions and the analytic, heuristic and optimum design of equipment and processes. Economic analysis is included to estimate the cost of equipment, capital investment, total product cost and profitability.

<b>Course Code</b>	CHE150
<b>Course Title</b>	CHEMICAL PROCESS INDUSTRIES
<b>Pre-Requisite</b>	CHM142
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
A survey of the different chemical process industries - their raw materials, processes, and products. Specifically, it deals with the unit processes and operations involved in selected chemical industries.

<b>Course Code</b>	CHE150L-1
<b>Course Title</b>	CHEMICAL PROCESS (LABORATORY)
<b>Pre-Requisite</b>	CHE142C-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>
A laboratory course to accompany CHE150-1.

<b>Course Code</b>	CHE157-1
<b>Course Title</b>	PHYSICAL CHEMISTRY FOR ENGINEERS 1
<b>Pre-Requisite</b>	MATH042, CHM133
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course deals with the quantitative and theoretical study of the properties and structure of matter and their relation to the interaction of matter and energy. Specifically, it concerns with the study of the properties of gases and liquids, thermodynamics, phase equilibria and colligative properties of solutions.

<b>Course Code</b>	CHE157L-1
<b>Course Title</b>	PHYSICAL CHEMISTRY FOR ENGINEERS 1 (LABORATORY)
<b>Pre-Requisite</b>	MATH042, CHM133
<b>Co-Requisite</b>	CHE157-1
<b>Credit units</b>	1.0

<b>Course Description:</b>
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This laboratory course accompanying Physical Chemistry 1 (lecture) covers the experiments concerning fundamental physical properties such as density, viscosity, melting point, surface tension; determination of optical properties by applying the principles of colorimetry/turbidimetry, spectrophotometry, refractometry and polarimetry. This course will also deal with important colligative properties, namely boiling point elevation and freezing point depression.

<b>Course Code</b>	CHE158-1
<b>Course Title</b>	PHYSICAL CHEMISTRY FOR ENGINEERS 2
<b>Pre-Requisite</b>	CHE157-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course is a continuation of Physical Principles 1 (PHYPRN1) starting with ternary liquid equilibrium with focus on liquid-liquid extraction and the application of Nernst Distribution Law. The course covers chemical equilibrium, solutions of electrolytes and extension of equilibrium principles to electrochemistry. It also includes an introduction to chemical kinetics and colloidal chemistry. These topics provide a firm foundation for understanding the physical principles that govern chemical systems.

<b>Course Code</b>	CHE158L-1
<b>Course Title</b>	PHYSICAL CHEMISTRY FOR ENGINEERS 2 (LABORATORY)
<b>Pre-Requisite</b>	CHE157L-1
<b>Co-Requisite</b>	CHE158-1
<b>Credit units</b>	1.0

**Course Description:**

This laboratory course accompanying Physical Chemistry 2 (lecture) is a continuation of Physical Chemistry I Laboratory which covers the experiments on chemical equilibria, phase equilibria, surface phenomena, thermochemistry, kinetics, and electrochemistry.

<b>Course Code</b>	CHE172C
<b>Course Title</b>	CHE158-1, MATH116, CHE134C-1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This course introduces to undergraduate students the fundamentals of chemical reaction engineering, kinetics and their mathematical description, and the key operational and design aspects of reactors normally encountered in the chemical industry. It starts with the interpretation of batch reactor data followed by the design equations of the three ideal reactor types (batch, CSTR, plug flow). Reaction systems studied include liquid and gaseous homogeneous reactions, heterogeneous catalytic reactions, and temperature effects.

<b>Course Code</b>	CHE180P - 1
<b>Course Title</b>	PROCESS DYNAMICS AND CONTROL (PAIRED)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A lecture and laboratory course that combines the mathematical, physical and chemical concepts for application to process simulation and control. Whenever appropriate, process simulation or programming software is used to demonstrate the behaviour of the control system.

<b>Course Code</b>	CHE181
<b>Course Title</b>	CHE LAW AND ETHICS
<b>Pre-Requisite</b>	HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course covers relevant national laws and ethical standards on the professional practice of chemical engineering in the Philippines, project contracting and implementation, environment and safety, investments and setting of enterprises in the Philippines.

<b>Course Code</b>	CHE182 - 1
<b>Course Title</b>	BIOCHEMICAL ENGINEERING
<b>Pre-Requisite</b>	CHE172C, CHM142
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with the processing of biological materials and processing of biological agents such as cells and enzymes. It focuses on the kinetics of biological reactions and the design of reactor for biochemical engineering applications.

<b>Course Code</b>	CHE184L-1
<b>Course Title</b>	COMPUTER APPLICATIONS IN CHE (LABORATORY)
<b>Pre-Requisite</b>	CHE135C-1, CPE001L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals exposes the student to computational and simulation to software relevant to chemical engineering practice for engineering design, calculations and simulations.

<b>Course Code</b>	CHE185-1
<b>Course Title</b>	INDUSTRIAL WASTE MANAGEMENT AND CONTROL
<b>Pre-Requisite</b>	EENV102, CHE133C-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with a variety of physical, chemical, biological treatment processes applied to industrial wastewater treatment, air pollution control, solid waste disposal and waste-to-energy conversion in compliance with national regulatory frameworks. Stream and air dispersion models will also be discussed. The main concepts of pollution prevention are emphasized in environmental management systems, environmental impact assessments, risk assessment and life cycle analysis.

<b>Course Code</b>	CHE191F-1
<b>Course Title</b>	CHEMICAL ENGINEERING FIELD TRIPS AND SEMINAR (FIELD)
<b>Pre-Requisite</b>	CHE172C
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with a series of lectures and seminars on selected topics that are highly relevant to chemical engineering but are not covered in any of the other formal courses. It covers recent advances in chemical engineering. Visits to industrial plants are also conducted during the term.

<b>Course Code</b>	CHE199R-1
<b>Course Title</b>	CHE PRACTICUM
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
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Actual On-the-Job Training or Industry Internship in the field of specialization.

<b>Course Code</b>	CHE801E
<b>Course Title</b>	ENGINEERING SCIENCES EXIT EXAM
<b>Pre-Requisite</b>	CHM031, PHY035, EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in general science courses (chemistry and physics) and general engineering courses (engineering economy, engineering management, engineering mechanics, and environmental science).

<b>Course Code</b>	CHE802E
<b>Course Title</b>	PHYSICAL AND CHEMICAL PRINCIPLES EXIT EXAM
<b>Pre-Requisite</b>	CHE158-1
<b>Co-Requisite</b>	CHE172C
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in physical science, and chemistry courses.

<b>Course Code</b>	CHE803E
<b>Course Title</b>	CHEMICAL ENGINEERING PRINCIPLES EXIT EXAM
<b>Pre-Requisite</b>	CHE133C-1, CHE172C, CHE143C-1, CHE181
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for chemical engineering and professional courses.

<b>Course Code</b>	CHE198-3
<b>Course Title</b>	CHE CORRELATION 1
<b>Pre-Requisite</b>	MATH800E, CHE801E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1

**Course Description:**

This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.

<b>Course Code</b>	CHE198-4
<b>Course Title</b>	CHE CORRELATION 2
<b>Pre-Requisite</b>	CHE802E, CHE803E, CHE182-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the professional courses to ensure mastery and retention.

<b>Course Code</b>	CHM031
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	3.0
<b>Course Description:</b>	
This course provides students with core concepts of chemistry that are important in the practice of the engineering profession.	

<b>Course Code</b>	CHM031L
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	
A fundamental laboratory course designed to relate and apply the principles and theories in chemistry to engineering practices. It is a combination of experimental and calculation laboratory.	

<b>Course Code</b>	CHM131
<b>Course Title</b>	ANALYTICAL CHEMISTRY 1
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
This courses deals with the theory and practice of gravimetric and volumetric methods of analysis, including an introduction to instrumental methods of analysis, and the relevance of analytical chemistry in solving chemical problems in today's world.	

<b>Course Code</b>	CHM131L
<b>Course Title</b>	ANALYTICAL CHEMISTRY 1 (LABORATORY)
<b>Pre-Requisite</b>	CHM031L
<b>Co-Requisite</b>	CHM131
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This courses deals with the theory and practice of gravimetric and volumetric methods of analysis, including an introduction to instrumental methods of analysis, and the relevance of analytical chemistry in solving chemical problems in today's world.	

<b>Course Code</b>	CHM132
<b>Course Title</b>	ANALYTICAL CHEMISTRY 2
<b>Pre-Requisite</b>	CHM131
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>	
This course provides students with core concepts of chemistry that are important in the practice of engineering profession. It covers the fundamentals and applications of spectrochemical analysis and chromatographic methods of analysis.	

<b>Course Code</b>	CHM141
<b>Course Title</b>	ORGANIC CHEMISTRY 1
<b>Pre-Requisite</b>	CHM131
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>	
The first of two organic chemistry courses, this course covers the principles of chemical bonding in organic chemistry and how bond properties contribute to the overall structure and reactivity of an organic molecule. These concepts are then applied to the analysis of the properties and chemical reactivity of alkanes, alkyl halides, alkenes, alkynes, and aromatic compounds.	

<b>Course Code</b>	CHM141L
<b>Course Title</b>	ORGANIC CHEMISTRY 1 (LABORATORY)
<b>Pre-Requisite</b>	CHM131L
<b>Co-Requisite</b>	CHM131
<b>Credit units</b>	1.0

**Course Description:**

Designed to complement the lectures in Organic Chemistry 1, this laboratory course covers basic separation and analytical techniques used in organic chemistry and simple reactions involving hydrocarbons and alkyl halides.

<b>Course Code</b>	CHM142
<b>Course Title</b>	ORGANIC CHEMISTRY 2
<b>Pre-Requisite</b>	CHM141
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course is a continuation of Organic Chemistry I Lecture. This course covers the nomenclature, occurrence, preparation as well as the physical and chemical properties of organic compounds. This course also includes an overview of the basic concepts of biochemistry.

<b>Course Code</b>	CHM142L
<b>Course Title</b>	ORGANIC CHEMISTRY 2 (LABORATORY)
<b>Pre-Requisite</b>	CHM141
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course is a continuation of Organic Chemistry I Laboratory. This course covers laboratory activities on the nomenclature, occurrence, preparation as well as the physical and chemical properties of organic compounds. This course also includes an overview of the basic concepts of biochemistry.

<b>Course Code</b>	CPE001L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including: identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.

<b>Course Code</b>	CPE126
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Class Schedule</b>	

**Course Description:**

This course provides an introductory overview of Artificial Intelligence (AI) with a focus on its applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE126L
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE (LABORATORY)
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	CPE126
<b>Credit units</b>	1.0

**Course Description:**

This course provides a hands-on laboratory experience with various machine learning and artificial intelligence models with a focus on their applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	DRAW021W
<b>Course Title</b>	ENGINEERING DRAWING 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings.

<b>Course Code</b>	DRAW023L-1
<b>Course Title</b>	COMPUTER AIDED DRAFTING (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	DS100L
<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.

<b>Course Code</b>	ECE121L
<b>Course Title</b>	COMPUTER-AIDED CALCULATIONS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course utilizes the capability of technology in facilitating the understanding of basic mathematical principles and operations. The MATLAB software will be used to perform algebraic operations, differentiations, integration, matrix operations, graphics manipulation and some basic MATLAB

programming. This course also presents software as a tool for gathering quick results from mathematical simulations and analysis.

<b>Course Code</b>	EE105-1
<b>Course Title</b>	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
<b>Pre-Requisite</b>	PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course deals with the basic principles of electrical and electronics engineering of relevance to chemical engineers.

<b>Course Code</b>	EE105L-1
<b>Course Title</b>	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (LAB)
<b>Pre-Requisite</b>	PHY035L
<b>Co-Requisite</b>	EE105-1
<b>Credit units</b>	1.0

**Course Description:**

This is a laboratory course to accompany Basic Electrical and Electronics Engineering

<b>Course Code</b>	EECO102
<b>Course Title</b>	ENGINEERING ECONOMY
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

<b>Course Code</b>	EENV102
<b>Course Title</b>	ENVIRONMENTAL SCIENCES AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	EMGT100
<b>Course Title</b>	ENGINEERING MANAGEMENT
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course will entail students to learn the basic function of a manager applicable in decision making which are applicable to the real world problems. Furthermore, students would learn how to apply planning, leading, organizing and control principles into the resources in order to increase the efficiency.

<b>Course Code</b>	EMGT100L
<b>Course Title</b>	PROJECT MANAGEMENT (LABORATORY)

<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course allows students to experience hands-on activities in project management through the use of application software.

<b>Course Code</b>	IE101-1
<b>Course Title</b>	ENGINEERING DATA ANALYSIS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how "chance" plays a role in statistical analysis. Probability distributions of random variables and their uses are also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

<b>Course Code</b>	MATH031
<b>Course Title</b>	MATHEMATICS FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers pre-calculus topics such as Algebra, Geometry, Trigonometry

<b>Course Code</b>	MATH041
<b>Course Title</b>	ENGINEERING CALCULUS 1
<b>Pre-Requisite</b>	MATH031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in differential calculus. It essentially covers core concepts of limit, continuity and differentiability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

<b>Course Code</b>	MATH042
<b>Course Title</b>	ENGINEERING CALCULUS 2
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in integral calculus. It then introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also

includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

<b>Course Code</b>	MATH056
<b>Course Title</b>	DIFFERENTIAL EQUATIONS
<b>Pre-Requisite</b>	MATH042
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

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

<b>Course Code</b>	MATH116
<b>Course Title</b>	ADVANCE ENGINEERING MATHEMATICS
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

A study of selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering

<b>Course Code</b>	MATH161
<b>Course Title</b>	NUMERICAL METHODS
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course covers the concepts of numerical analysis and computer software tools in dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.

<b>Course Code</b>	MATH161L
<b>Course Title</b>	NUMERICAL METHODS (LABORATORY)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	MATH161
<b>Credit units</b>	1.0

#### **Course Description:**

The course provides background on numerical analysis needed to solve engineering problems numerically when their analytical solution is either not available or difficult to obtain. MATLAB programming environment or its equivalent will be introduced and used in the course.

<b>Course Code</b>	MATH800E
<b>Course Title</b>	ENGINEERING MATHEMATICS EXIT EXAM
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in mathematics courses, namely: differential calculus, integral calculus, differential equations, and probability and statistics.

<b>Course Code</b>	MEC100-1
<b>Course Title</b>	ENGINEERING MECHANICS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	MSE102
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course introduces the students to a broad study on the structure and composition of materials (metals, polymers, ceramics, and composite materials) and their properties and behavior in service environments.

<b>Course Code</b>	PHY035
<b>Course Title</b>	PHYSICS FOR ENGINEERS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

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

<b>Course Code</b>	PHY035L
<b>Course Title</b>	PHYSICS FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY035
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	RES101
<b>Course Title</b>	METHODS OF RESEARCH
<b>Pre-Requisite</b>	NONE

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work	

<b>Course Code</b>	SAF102
<b>Course Title</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course tackles key Occupational Health and Safety (OSH) concepts, principles and practices that are foundational knowledge requirements applicable in almost all industries. Specifically, it assists learners in identifying the key elements in the OSH situation both here and abroad; determine existing and potential safety and health hazards; identify the range of control measures; discuss pertinent provisions of Philippine laws that refer to occupational safety and health; explain key principles in effectively communicating OSH; identify components of effective OSH programs and demonstrate some skills in identifying hazards and corresponding control measures at the workplace.

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

<b>Course Description:</b>
Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

<b>Course Code</b>	TEC100-2
<b>Course Title</b>	TECHNOPRENEURSHIP
<b>Pre-Requisite</b>	EMGT100, ACT099
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

## GENERAL EDUCATION COURSES

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM081
<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as

merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

#### **Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	2.0
<b>Course Description:</b>	
This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.	

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal is for the students to understand and appreciate our rich past by deriving insights from those who were actually present at the time of the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels *Noli Me Tangere* and *El Filibusterismo*, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Don'ts among professionals, especially in culturally pluralistic spaces such as Mindanao.

# BACHELOR OF SCIENCE IN CIVIL ENGINEERING

## CORE COURSES

<b>Course Code</b>	ACT099
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course seeks to enable participants with little to no accounting background to explain and apply the principles, basic tools, and techniques of the accounting process.

<b>Course Code</b>	CAP200
<b>Course Title</b>	CAPSTONE DESIGN/THESIS 1(LECTURE)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	CAP200D
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 1 (LABORATORY)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	CAP200
<b>Credit units</b>	1.0

**Course Description:**

Development of a capstone project proposal containing a clear set of objectives, methodology, project implementation plan/schedule and resource requirements.

<b>Course Code</b>	CAP200D-1
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 2 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Implementation of a capstone project based on an approved proposal.

<b>Course Code</b>	CAP200D-2
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 3 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Oral presentation and Final Defense

<b>Course Code</b>	CE100
<b>Course Title</b>	CIVIL ENGINEERING ORIENTATION

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course discusses the curriculum for Civil Engineering as well as how to prepare students for success through engineering design process, ethical decision-making, teamwork, and communicating to diverse audiences.

<b>Course Code</b>	CE101-2
<b>Course Title</b>	SURVEYING 1
<b>Pre-Requisite</b>	DRAW021W, MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course deals with Measurement of distance and distance corrections, the use of surveying instruments, area computations, balancing the traverse, elevation determination, and leveling..

<b>Course Code</b>	CE101F-2
<b>Course Title</b>	SURVEYING 1 (FIELD)
<b>Pre-Requisite</b>	DRAW021W, MATH041
<b>Co-Requisite</b>	CE101-2
<b>Credit units</b>	1.0

**Course Description:**

Proper handling and utilization of surveying instrument will be taken. Students will learn how to perform measurement of distance and apply distance corrections, use and proper handling of surveying instruments, and perform calculations related to area computations, latitude and departure computations, DMD and DPD methods of land area determination, balancing the traverse, elevation determination, and leveling.

<b>Course Code</b>	CE101-3
<b>Course Title</b>	SURVEYING 2
<b>Pre-Requisite</b>	CE101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course deals with Stadia surveying, topographic surveying, triangulation and trilateration, missing data, irregular boundaries, and global positioning system

<b>Course Code</b>	CE101F-3
<b>Course Title</b>	SURVEYING 2 (FIELD)
<b>Pre-Requisite</b>	CE1-1-2, CE101F-2
<b>Co-Requisite</b>	CE101-3
<b>Credit units</b>	1.0

**Course Description:**

Proper handling and utilization of surveying instrument will be taken. Students will learn how to perform stadia surveying, topographic surveying, triangulation and trilateration, missing data computation, and subdivision of lots. Laying out of horizontal curves, compound curve, reversed curve, spiral curve and mass diagramming.

<b>Course Code</b>	CE102
<b>Course Title</b>	BUILDING SYSTEMS DESIGN
<b>Pre-Requisite</b>	DRAW023L-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Building construction is examined from the standpoints of life safety (including fire safety and zoning constraints on site planning); architectural and building service systems (plumbing, electrical, vertical transportation, security, fire protection); materials, sustainability, and life-cycle analysis; accessibility; technical documentation and outline specifications; building enclosure systems; and interior finish systems. The lecture course will focus on developing knowledge of building systems, including architectural design building materials and construction techniques, and will foster the skills required to adopt a building systems approach compliant to the National Building Code and its referral codes. The students' developed knowledge of building systems will also include understanding of different types and applications of building materials and diverse construction techniques. Sustainability principles' impact on the property lifecycle, and how these will integrate and apply to skills and knowledge to industry based case studies will also be examined. The course will include at least one site visit to an operating building in the locality. The laboratory class will focus on the tools and techniques to create a computer generated building model, and applied tools for working with computer model exploring output and simulation. Students will develop techniques looking at both realistic and schematic representation, and the integration of building systems modeling as a tool to inform and enhance the design process.

<b>Course Code</b>	CE102L
<b>Course Title</b>	BUILDING SYSTEMS DESIGN (LABORATORY)
<b>Pre-Requisite</b>	DRAW023L-1
<b>Co-Requisite</b>	CE102
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany CE102.

<b>Course Code</b>	CE103-1
<b>Course Title</b>	HIGHWAY AND RAILROAD ENGINEERING
<b>Pre-Requisite</b>	CE101-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Presents the methods and underlying principles for the design and control of the elements of road and railroad infrastructure. Students also become familiar with transportation system terminology, flow analysis, driver, vehicle and road characteristics, and aspects of road geometrics, road construction, drainage, pavements and maintenance.

<b>Course Code</b>	CE104
<b>Course Title</b>	MECHANICS OF DEFORMABLE BODIES FOR CE
<b>Pre-Requisite</b>	MEC101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This course is about axial stress and strain; stresses for torsion and bending; combined stresses; beam deflections; indeterminate beams; and elastic instability.

<b>Course Code</b>	CE105-1
<b>Course Title</b>	PRINCIPLES OF TRANSPORTATION ENGINEERING
<b>Pre-Requisite</b>	CE103-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course gives emphasis on urban transportation planning, design and operation using statistical and modelling techniques and computer methods. It also covers capacity and level of

service of air, rail and highway. It also includes safety, environmental impacts and mitigation, transportation policy fundamentals and case studies.

<b>Course Code</b>	CE122-1
<b>Course Title</b>	HYDROLOGY
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals on the hydrologic cycle and the different processes such as precipitation, evaporation, infiltration, overland flow, groundwater flow and surface runoff generation.

<b>Course Code</b>	CE123-2
<b>Course Title</b>	HYDRAULICS 1
<b>Pre-Requisite</b>	MEC102-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course emphasizes the continuity equation, energy equation, and momentum equation. Familiarization of the properties of common liquids in the study of hydraulics. Application of fundamental principles to solve problems involving liquid pressure and corresponding forces resulting from this pressure.

<b>Course Code</b>	CE123L-2
<b>Course Title</b>	HYDRAULICS 1 (LABORATORY)
<b>Pre-Requisite</b>	MEC102-1
<b>Co-Requisite</b>	CE123-2
<b>Credit units</b>	1.0

**Course Description:**

The course emphasizes the continuity equation, energy equation, and momentum equation. Familiarization of the properties of common liquids in the study of hydraulics. Application of fundamental principles to solve problems involving liquid pressure and corresponding forces resulting from this pressure. Applications of appropriate equations in performing calculations involving flow velocity, flow rate and forces exerted by moving liquids in closed conduits and open channels. Familiarization and applications of flow measuring devices such as orifice, weirs, pitot tube,

<b>Course Code</b>	CE124
<b>Course Title</b>	HYDRAULICS 2
<b>Pre-Requisite</b>	CE123-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course emphasizes the applications of appropriate equations in performing calculations involving flow velocity, flow rate and forces exerted by moving liquids in closed conduits and open channels. Familiarization and applications of flow measuring devices such as orifice, weirs, pitot tube,

<b>Course Code</b>	CE124L
<b>Course Title</b>	HYDRAULICS 2 (LABORATORY)
<b>Pre-Requisite</b>	CE123-2
<b>Co-Requisite</b>	CE124
<b>Credit units</b>	1.0

**Course Description:**

The course emphasizes the applications of appropriate equations in performing calculations involving flow velocity, flow rate and forces exerted by moving liquids in closed conduits and open channels. Familiarization and applications of flow measuring devices such as orifice, weirs, pitot tube,

<b>Course Code</b>	CE131C-2
<b>Course Title</b>	STRUCTURAL THEORY 1 (COMPUTATIONAL)
<b>Pre-Requisite</b>	CE104
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A professional course common to all civil engineering students designed to provide fundamental concepts, principles, and theories in the theory of structures and structural analysis for internal actions in a determinate structure and its deformations under load.

<b>Course Code</b>	CE132C
<b>Course Title</b>	STRUCTURAL THEORY 1 (COMPUTATIONAL)
<b>Pre-Requisite</b>	CE131C-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A professional course common to all civil engineering students designed to provide fundamental concepts, principles, and theories in the theory of structures and structural analysis for internal actions in an indeterminate structure and its deformations under load.

<b>Course Code</b>	CE133-2
<b>Course Title</b>	PRINCIPLES OF RCD AND PRE-STRESSED CONCRETE
<b>Pre-Requisite</b>	CE132C
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A professional course common to all civil engineering students designed to provide fundamental concepts, principles, and theories in the structural strength analysis and design of plain, reinforced, and prestressed concrete elements in a structure

<b>Course Code</b>	CE133C-2
<b>Course Title</b>	PRINCIPLES OF RCD AND PRE-STRESSED CONCRETE (COMPUTATIONAL)
<b>Pre-Requisite</b>	CE132C
<b>Co-Requisite</b>	CE133-2
<b>Credit units</b>	1.0

**Course Description:**

A professional course common to all civil engineering students designed to provide fundamental concepts, principles, and theories in the structural strength analysis and design of plain, reinforced, and prestressed concrete elements in a structure

<b>Course Code</b>	CE134-2
<b>Course Title</b>	PRINCIPLES OF STEEL DESIGN
<b>Pre-Requisite</b>	CE133-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Presents the methods and underlying principles for the design and control of the elements of road and railroad infrastructure. Students also become familiar with transportation system terminology, flow analysis, driver, vehicle and road characteristics, and aspects of road geometrics, road construction, drainage, pavements and maintenance.

<b>Course Code</b>	CE134C-2
<b>Course Title</b>	PRINCIPLES OF STEEL DESIGN (COMPUTATIONAL)
<b>Pre-Requisite</b>	CE133-2
<b>Co-Requisite</b>	CE134-2
<b>Credit units</b>	1.0

**Course Description:**

A professional course common to all civil engineering students designed to provide fundamental concepts, principles, and theories in the structural strength analysis and design of steel elements in a structure

<b>Course Code</b>	CE140
<b>Course Title</b>	QUANTITY SURVEYING
<b>Pre-Requisite</b>	CE102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course provides a basic understanding of the methods used to prepare a building and/or bridge construction cost estimate and earthwork costs. The students learn to do quantity take-off utilizing plans and the students learn to do quantity take-off utilizing plans and specifications.

<b>Course Code</b>	CE140C
<b>Course Title</b>	QUANTITY SURVEYING (COMPUTATION)
<b>Pre-Requisite</b>	CE102
<b>Co-Requisite</b>	CE140
<b>Credit units</b>	1.0

**Course Description:**

A computational laboratory course to accompany CE140.

<b>Course Code</b>	CE141-1
<b>Course Title</b>	CONSTRUCTION MATERIALS AND TESTING
<b>Pre-Requisite</b>	CE104
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with the physical properties of common construction materials primarily metals, plastics, wood, concrete, coarse and fine aggregates, asphalt and synthetic materials; examination of material properties with respect to design and use of end product, design and control of aggregates, concrete and asphalt mixtures, principle of testing; characteristics of test; properties of materials and materials testing equipment.

<b>Course Code</b>	CE141L-1
<b>Course Title</b>	CONSTRUCTION MATERIALS AND TESTING (LABORATORY)
<b>Pre-Requisite</b>	CE104
<b>Co-Requisite</b>	CE141-1
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany CE141-1.

<b>Course Code</b>	CE142-1
<b>Course Title</b>	CONSTRUCTION METHODS AND PROJECT MANAGEMENT
<b>Pre-Requisite</b>	EMGT100
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A laboratory course to accompany CE142-1.

<b>Course Code</b>	CE142L-1
<b>Course Title</b>	CONSTRUCTION METHODS AND PROJECT MANAGEMENT (LABORATORY)
<b>Pre-Requisite</b>	EMGT100
<b>Co-Requisite</b>	CE142-1
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the principles of construction methods and equipment, management and their applications. It covers project planning, scheduling, monitoring and control. It also includes concepts on organization, safety, information systems and computer applications. Students are given opportunities to visit actual project sites and observe the application of these theories in construction projects.

<b>Course Code</b>	CE151-1
<b>Course Title</b>	GEOTECHNICAL ENGINEERING: SOIL MECHANICS
<b>Pre-Requisite</b>	CE011, CE104
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Soil formation and identification. Engineering properties of soils. Fundamental aspects of soil characterization and response, including soil mineralogy, soil-water movement, effective stress, consolidation, soil strength, and soil compaction. Use of soils and geosynthetics in geotechnical and geo-environmental applications. Introduction to site investigation techniques. Laboratory testing and evaluation of soil composition and properties.

<b>Course Code</b>	CE151L-1
<b>Course Title</b>	GEOTECHNICAL ENGINEERING: SOIL MECHANICS (LABORATORY)
<b>Pre-Requisite</b>	CE011, CE104
<b>Co-Requisite</b>	CE151-1
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany CE151-1.

<b>Course Code</b>	CE181
<b>Course Title</b>	CE LAWS, ETHICS AND CONTRACTS
<b>Pre-Requisite</b>	HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course deals on the principles and fundamentals of the laws on obligations, contracts, and professional ethics that are applicable to the civil engineering profession. It is designed to prepare civil engineering students for professional practice. Topics on the perspective of the student as future practitioners, contractors, and employees in the field are also given emphasis. They include the study of code of ethics, legal procedure in the practice of civil engineering in the Philippines,

ethical relations of an engineer with fellow professionals, clients, and general public, elements of contracts, obligations, Civil Engineering Law (RA 544) National Building Code, labor laws, E-Procurement Law, and the Manual of Professional Practice for Civil Engineers.

<b>Course Code</b>	CE191F
<b>Course Title</b>	CE SEMINARS AND FIELD TRIPS (FIELD)
<b>Pre-Requisite</b>	CE133-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with a series of lectures and seminars on selected topics that are highly relevant to civil engineering but are not covered in any of the other formal courses. It covers recent advances in engineering. It is also a venue for the students to present their projects and researches in civil engineering.

<b>Course Code</b>	CE198-3
<b>Course Title</b>	CORRELATION 1
<b>Pre-Requisite</b>	MATH800E, CE801E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	(1.0)

**Course Description:**

This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.

<b>Course Code</b>	CE198 – 4
<b>Course Title</b>	CE CORRELATION 2
<b>Pre-Requisite</b>	CE802E, CE803E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	(1.0)

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the professional courses to ensure mastery and retention.

<b>Course Code</b>	CE199R-1
<b>Course Title</b>	CE PRACTICUM
<b>Pre-Requisite</b>	CE141L-1, HUM039, CE142-1, CE142L-1, CE140P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Actual On-the-Job Training or Industry Internship in the field of specialization.

<b>Course Code</b>	CE801E
<b>Course Title</b>	ENGINEERING SCIENCES EXIT EXAM
<b>Pre-Requisite</b>	CHM031, PHY035, PHY034, EMGT100
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in general science course (physics) and general engineering courses (engineering economy, engineering management, engineering mechanics, and environmental science).

<b>Course Code</b>	CE802E
<b>Course Title</b>	SURVEYING, GEOTECHNICAL AND HYDRAULICS EXIT EXAM
<b>Pre-Requisite</b>	CE103-1, CE151-1, CE124
<b>Co-Requisite</b>	CE105-1
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in surveying, geotechnical and hydraulics courses.

<b>Course Code</b>	CE803E
<b>Course Title</b>	STRUCTURAL DESIGN EXIT EXAM
<b>Pre-Requisite</b>	CE133-2
<b>Co-Requisite</b>	CE134-2
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in structural design courses.

<b>Course Code</b>	CHM031
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Basic concepts of matter and its classification; mass relationships in chemical reactions; properties of gases, liquids, and solids; concepts of thermochemistry; quantum theory and electronic behavior; periodic relationship of elements in the periodic table; intramolecular forces; and solutions.

<b>Course Code</b>	CHM031L
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	CHM031L
<b>Credit units</b>	1.0

**Course Description:**

A fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in the chemistry for engineers.

<b>Course Code</b>	CPE001L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including: identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.

<b>Course Code</b>	CPE002L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 2 (LAB)
<b>Pre-Requisite</b>	CPE001L
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	1.0
<b>Course Description:</b>	
This course is a continuation of the first course CPE001L. It covers fundamentals of algorithm development; high-level language and programming applications; computer solutions of engineering problems.	

<b>Course Code</b>	CPE126
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Class Schedule</b>	

<b>Course Description:</b>
This course provides an introductory overview of Artificial Intelligence (AI) with a focus on its applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE126L
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE (LABORATORY)
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	CPE126
<b>Credit units</b>	1.0

<b>Course Description:</b>
This course provides a hands-on laboratory experience with various machine learning and artificial intelligence models with a focus on their applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	DRAW021W
<b>Course Title</b>	ENGINEERING DRAWING 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>
The course deals with the practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings.

<b>Course Code</b>	DRAW023L-1
<b>Course Title</b>	COMPUTER AIDED DRAFTING (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>
This course deals with the concepts of computer-aided drafting (CAD); introduction to the CAD environment; terminologies; and the general operating procedures and techniques in entering and executing basic CAD commands.

<b>Course Code</b>	DS100L
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<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.

<b>Course Code</b>	ECE121L
<b>Course Title</b>	COMPUTER – AIDED CALCULATIONS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course utilizes the capability of technology in facilitating the understanding of basic mathematical principles and operations. The MATLAB software will be used to perform algebraic operations, differentiations, integration, matrix operations, graphics manipulation and some basic MATLAB programming. This course also presents software as a tool for gathering quick results from mathematical simulations and analysis.

<b>Course Code</b>	EE104-4
<b>Course Title</b>	ENGINEERING UTILITIES 1
<b>Pre-Requisite</b>	PHY035, PHY035L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course focuses on the mechanical systems, fire protection systems, sanitary/ plumbing systems, and acoustics in buildings. Lecture discussions include HVAC systems, acoustics, vertical transportation and fire protection. Reducing operational loads and integrating high performance energy systems into buildings offers solutions towards achieving a sustainable and secure energy future. Engineers must understand the interrelationship between a building and its subsystems, and need sufficient knowledge of building systems and design alternatives to recommend appropriate solutions that suit the site, climate, building type, and occupants. They must coordinate the work of the engineering disciplines that carry the sustainability concept forward through building design, construction, commissioning, operation and, ultimately, demolition, recycling and reuse.

<b>Course Code</b>	EE104L-4
<b>Course Title</b>	ENGINEERING UTILITIES 1 (LABORATORY)
<b>Pre-Requisite</b>	PHY035, PHY035L
<b>Co-Requisite</b>	EE104-4
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany EE104-4

<b>Course Code</b>	EECO102
<b>Course Title</b>	ENGINEERING ECONOMY
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

<b>Course Code</b>	EENV102
<b>Course Title</b>	ENVIRONMENTAL SCIENCES AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	EMGT100
<b>Course Title</b>	ENGINEERING MANAGEMENT
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course will entail students to learn the basic function of a manager applicable in decision making which are applicable to the real world problems. Furthermore, students would learn how to apply planning, leading, organizing and control principles into the resources in order to increase the efficiency.

<b>Course Code</b>	IE101-1
<b>Course Title</b>	ENGINEERING DATA ANALYSIS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how "chance" plays a role in statistical analysis. Probability distributions of random variables and their uses are also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

<b>Course Code</b>	MATH041
<b>Course Title</b>	ENGINEERING CALCULUS 1
<b>Pre-Requisite</b>	MATH031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in differential calculus. It essentially covers core concepts of limit, continuity and differentiability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

<b>Course Code</b>	MATH042
<b>Course Title</b>	ENGINEERING CALCULUS 2
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in integral calculus. It then introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

<b>Course Code</b>	MATH056
<b>Course Title</b>	DIFFERENTIAL EQUATION
<b>Pre-Requisite</b>	MATH042
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	MATH116
<b>Course Title</b>	ADVANCE ENGINEERING MATHEMATICS
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A study of selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, matrices, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, and partial differential equations.

<b>Course Code</b>	MATH161
<b>Course Title</b>	NUMERIC METHODS
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the concepts of numerical analysis and computer software tools in dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.

<b>Course Code</b>	MATH161L
<b>Course Title</b>	NUMERIC METHODS (LABORATORY)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	MATH161
<b>Credit units</b>	3.0

**Course Description:**

The course provides background on numerical analysis needed to solve engineering problems numerically when their analytical solution is either not available or difficult to obtain. MATLAB programming environment or its equivalent will be introduced and used in the course.

<b>Course Code</b>	MATH800E
<b>Course Title</b>	ENGINEERING MATHEMATICS EXIT EXAM
<b>Pre-Requisite</b>	IE101-1, MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in mathematics courses, namely: differential calculus, integral calculus, differential equations, and probability and statistics.

<b>Course Code</b>	ME123-1
<b>Course Title</b>	ENGINEERING UTILITIES 2
<b>Pre-Requisite</b>	PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course focuses on the environmental systems in buildings. Lecture discussions include building electrical systems, natural and artificial lighting, and building telecommunications. Reducing operational loads and integrating high performance energy systems into buildings offers solutions towards achieving a sustainable and secure energy future. Engineers must understand the interrelationship between a building and its subsystems, and need sufficient knowledge of building systems and design alternatives to recommend appropriate solutions that suit the site, climate, building type, and occupants. They must coordinate the work of the engineering disciplines that carry the sustainability concept forward through building design, construction, commissioning, operation and, ultimately, demolition, recycling and reuse.

<b>Course Code</b>	MEC101-2
<b>Course Title</b>	STATICS OF RIGID BODIES
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A basic engineering science course of solid mechanics dealing with bodies that are or remain at rest. It is designed to provide fundamental concepts about forces, moments and couples and their systems. The concept of resultants and equilibrium of forces and moments is utilized to enable solution of statically determinate problems.

<b>Course Code</b>	MEC102-1
<b>Course Title</b>	DYNAMICS OF RIGID BODIES
<b>Pre-Requisite</b>	MEC101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course is about Kinetics and kinematics of a particle; kinetics and kinematics of rigid bodies; work energy method; and impulse and momentum.

<b>Course Code</b>	PHY035
<b>Course Title</b>	PHYSICS FOR ENGINEERS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

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

<b>Course Code</b>	PHY035L
<b>Course Title</b>	PHYSICS FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY035
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	RES101
<b>Course Title</b>	METHODS OF RESEARCH
<b>Pre-Requisite</b>	IE101-1, ENG024
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	SAF103
<b>Course Title</b>	CONSTRUCTION OCCUPATIONAL SAFETY AND HEALTH
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course tackles key Construction Occupational, Health and Safety (COSH) concepts, principles and practices that are foundational knowledge requirements acceptable in almost all industries. Specifically, it assists learners in identifying the key elements in the COSH situation both here and abroad, determine existing and potential safety health hazards, identify the range of control measures, discuss pertinent provisions of Philippine laws that refer to occupational safety and health, explain key principles in effectively communicating COSH, identify components of effective COSH programs and demonstrate some skills in identifying hazards and corresponding control measures at the workplace

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

<b>Course Code</b>	TEC100-2
<b>Course Title</b>	TECHNOPRENEURSHIP
<b>Pre-Requisite</b>	EMGT100, ACT099
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

**GENERAL EDUCATION COURSES**

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM081
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<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community.

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal is to enable the students understand and appreciate our rich past by deriving insights from those who were actually present at the time of the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels *Noli Me Tangere* and *El Filibusterismo*, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

#### **Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
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<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Don'ts among professionals, especially in culturally pluralistic spaces such as Mindanao.

# BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

## CORE COURSES

<b>Course Code</b>	ACT099
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

### Course Description:

The course seeks to enable participants with little to no accounting background to explain and apply the principles, basic tools, and techniques of the accounting process.

<b>Course Code</b>	CAP200D
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 1 (LABORATORY)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

### Course Description:

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation, and publication of research work

<b>Course Code</b>	CAP200D-1
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 2 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

### Course Description:

A course in which individuals or small teams use the principle of computer engineering in the final stage of design, building and testing of special circuits or symple systems. The objective should be the scope of the project proposal in the CPE200D.

<b>Course Code</b>	CAP200D – 2
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 3 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

### Course Description:

This is the final stage of the design, and the students is expected to make an oral presentation and defense before a panel by the end of the term.

<b>Course Code</b>	CHM031
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### Course Description:

This course provides students with core concepts of chemistry that are important in the practice of the engineering profession.

<b>Course Code</b>	CHM031L
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

A fundamental laboratory course designed to relate and apply the principles and theories in chemistry to engineering practices. It is a combination of experimental and calculation laboratory.

<b>Course Code</b>	CPE100
<b>Course Title</b>	COMPUTER ENGINEERING AS A DISCIPLINE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course discusses the curriculum for Computer Engineering as well as how to prepare students for success through engineering design process, ethical decision-making, teamwork, and communicating to diverse audiences.

<b>Course Code</b>	CPE001L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including: identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.

<b>Course Code</b>	CPE003L
<b>Course Title</b>	ADVANCED PROGRAMMING TECHNIQUES (LAB)
<b>Pre-Requisite</b>	CPE001L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course focuses on Building GUIs and Desktop applications, automation, game, app and web development, data science and machine learning using Python. Problem solving within the object-oriented programming paradigm.

<b>Course Code</b>	CPE101-1
<b>Course Title</b>	DIGITAL ELECTRONICS: LOGIC CIRCUITS AND DESIGN
<b>Pre-Requisite</b>	ECE101-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course includes design and analysis of digital circuits. This course covers both combinational (synchronous and asynchronous) logic circuits with emphasis on solving digital problems using hardwired structures of the complexity of medium and large-scale integration.

<b>Course Code</b>	CPE101L-1
<b>Course Title</b>	DIGITAL ELECTRONICS: LOGIC CIRCUITS AND DESIGN (LABORATORY)
<b>Pre-Requisite</b>	ECE101L-3
<b>Co-Requisite</b>	CPE101-1
<b>Credit units</b>	1.0

**Course Description:**

This course focuses on providing hands-on experience in designing digital circuits.

<b>Course Code</b>	CPE103-4
<b>Course Title</b>	MICROPROCESSORS
<b>Pre-Requisite</b>	CPE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course provides understanding of architecture of microprocessor-based systems; registers, study of microprocessor operation, assembly language, arithmetic operations, and interfacing.

<b>Course Code</b>	CPE103L-4
<b>Course Title</b>	MICROPROCESSORS (LABORATORY)
<b>Pre-Requisite</b>	CPE101L-1
<b>Co-Requisite</b>	CPE103-4
<b>Credit units</b>	1.0

**Course Description:**

This course provides understanding of architecture of microprocessor-based systems; study of microprocessor operation, assembly language, arithmetic operations, and interfacing

<b>Course Code</b>	CPE104L –1
<b>Course Title</b>	INTRODUCTION TO HARDWARE DESCRIPTION LANGUAGE (LABORATORY)
<b>Pre-Requisite</b>	CPE141L, CPE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course that introduces hardware description language as a tool for designing and testing combinational and sequential circuits. It covers fundamental of concepts of HDL and the basic building blocks of HDL programming.

<b>Course Code</b>	CPE105-1
<b>Course Title</b>	DISCRETE MATHEMATICS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with logic, sets, proofs, growth of functions, theory of numbers, counting techniques, trees and graph theory.

<b>Course Code</b>	CPE106 - 1
<b>Course Title</b>	DATA AND DIGITAL COMMUNICATIONS

<b>Pre-Requisite</b>	ECE101-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course focuses on the fundamental concepts of digital and data communications. It also includes topics on data security and integrity.

<b>Course Code</b>	CPE107-1
<b>Course Title</b>	SOFTWARE DESIGN
<b>Pre-Requisite</b>	CS105L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course focuses on programming paradigms and constructs, data structures and use of standard library functions for manipulating them, object-oriented design and the use of modeling languages, testing and software quality concepts, and trade-offs among different software design methods.

<b>Course Code</b>	CPE107L-1
<b>Course Title</b>	SOFTWARE DESIGN (LABORATORY)
<b>Pre-Requisite</b>	CS105L
<b>Co-Requisite</b>	CPE107-1
<b>Credit units</b>	1.0

**Course Description:**

This course focuses on providing hands-on experience in software design.

<b>Course Code</b>	CPE108-1
<b>Course Title</b>	FUNDAMENTALS OF MIXED SIGNALS AND SENSORS
<b>Pre-Requisite</b>	ECE101-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course covers operational amplifiers, signal converters, power switching devices and the construction and operation of sensors and transducers for converting physical parameters into electrical signals and vice-versa. The course focuses on the application of these devices in developing signal conversion circuits that allows measurement, processing and control of physical parameters by digital processing systems such as a finite state machine or a digital computer. Topics on actuators are also included.

<b>Course Code</b>	CPE108L-1
<b>Course Title</b>	FUNDAMENTALS OF MIXED SIGNALS AND SENSORS
<b>Pre-Requisite</b>	ECE101L-3
<b>Co-Requisite</b>	ECE101-3
<b>Credit units</b>	1.0

**Course Description:**

This course covers simulations and laboratory activities on operational amplifiers, signal converters, power switching devices and the construction and operation of sensors and transducers for converting physical parameters into electrical signals and vice-versa. The course focuses on the application of these devices in developing signal conversion circuits that allows measurement, processing and control of physical parameters by digital processing systems such as a finite state machine or a digital computer. Topics on actuators are also included.

<b>Course Code</b>	CPE109 – 1
<b>Course Title</b>	COMPUTER NETWORKS AND SECURITY (LABORATORY)
<b>Pre-Requisite</b>	CPE106-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course includes the basic principles of network architecture, computer network design, services, technologies and network security.

<b>Course Code</b>	CPE109L – 1
<b>Course Title</b>	COMPUTER NETWORKS AND SECURITY (LABORATORY)
<b>Pre-Requisite</b>	CPE106-1
<b>Co-Requisite</b>	CPE109-1
<b>Credit units</b>	1.0

**Course Description:**

This course provides hands-on laboratory activities on computer networking. It focuses on the configuration of TCP/IP, routers and switches, network security and wireless fidelity.

<b>Course Code</b>	CPE110-1
<b>Course Title</b>	EMERGING TECHNOLOGIES IN CPE
<b>Pre-Requisite</b>	CPE103-4
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed to provide flexibility in the curriculum by discussing any emerging technologies applicable to computer engineering.

<b>Course Code</b>	CPE112 – 1
<b>Course Title</b>	EMBEDDED SYSTEMS
<b>Pre-Requisite</b>	CPE103-4
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course will provide advanced topics in embedded systems design using contemporary practice; interrupt-driven, reactive, real-time, object- oriented, and distributed client/server embedded systems.

<b>Course Code</b>	CPE112L – 1
<b>Course Title</b>	EMBEDDED SYSTEMS (LABORATORY)
<b>Pre-Requisite</b>	CPE103L-4
<b>Co-Requisite</b>	CPE112-1
<b>Credit units</b>	1.0

**Course Description:**

This course will provide hands-on activities designed to advanced topics in embedded systems design using contemporary practice; interrupt-driven, reactive, real-time, object- oriented, and distributed client/server embedded systems.

<b>Course Code</b>	CPE113 – 1
<b>Course Title</b>	DIGITAL DATA PROCESSING
<b>Pre-Requisite</b>	ECE130
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course includes the need for, and tradeoffs made when sampling and quantizing a signal; linear, time-invariant system properties; frequency as an analysis domain complementary to time; and filter design.

<b>Course Code</b>	CPE113L – 1
<b>Course Title</b>	DIGITAL DATA PROCESSING (LABORATORY)
<b>Pre-Requisite</b>	ECE130, ECE121L
<b>Co-Requisite</b>	CPE113-1
<b>Credit units</b>	1.0

**Course Description:**

This course is designed to provide hands-on activities on different applications of digital signals processing.

<b>Course Code</b>	CPE121L-1
<b>Course Title</b>	COMPUTER ENGINEERING DRAFTING AND DESIGN (LABORATORY)
<b>Pre-Requisite</b>	ECE101-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course focuses on the principles of layout of electrical, electronics, and logic drawings; stressing modern representation used for block diagrams, wiring/assembly, drawings, printed circuit board layouts, and etching.

<b>Course Code</b>	CPE126
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Class Schedule</b>	

**Course Description:**

This course provides an introductory overview of Artificial Intelligence (AI) with a focus on its applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE126L
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE (LABORATORY)
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	CPE126
<b>Credit units</b>	1.0

**Course Description:**

This course provides a hands-on laboratory experience with various machine learning and artificial intelligence models with a focus on their applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs,

requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE131-1
<b>Course Title</b>	COMPUTER ARCHITECTURE AND ORGANIZATION
<b>Pre-Requisite</b>	CPE103-4
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course includes the study of the evolution of computer architecture and the factors influencing the design of hardware and software elements of computer systems. The focus is on the understanding of the design issues specifically the instruction set architecture and hardware architecture.

<b>Course Code</b>	CPE131L –1
<b>Course Title</b>	COMPUTER ARCHITECTURE AND ORGANIZATION (LABORATORY)
<b>Pre-Requisite</b>	CPE103L-4
<b>Co-Requisite</b>	CPE131-1
<b>Credit units</b>	1.0

#### **Course Description:**

This course will provide hands-on activities designed to focus on the computer hardware issues specifically the instruction set architecture and hardware architecture.

<b>Course Code</b>	CPE141L
<b>Course Title</b>	PROGRAMMING LOGIC AND DESIGN (LABORATORY)
<b>Pre-Requisite</b>	CPE001L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

#### **Course Description:**

This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.

<b>Course Code</b>	CPE142L
<b>Course Title</b>	OBJECT- ORIENTED PROGRAMMING (LABORATORY)
<b>Pre-Requisite</b>	CPE141L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

#### **Course Description:**

Introduces the fundamental concepts of programming from an object-oriented perspective. Topics are drawn from classes and objects, abstraction, encapsulation, data types, calling methods and passing parameters, decisions, loops, arrays and collections, documentation, testing and debugging, exceptions, design issues, inheritance, and polymorphic variables and methods. The course emphasizes modern software engineering and design principles.

<b>Course Code</b>	CPE143L
<b>Course Title</b>	WEB DESIGN AND DEVELOPMENT (LABORATORY)
<b>Pre-Requisite</b>	CPE142L
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	2.0
<b>Course Description:</b>	
This course provides a comprehensive overview of website development. Students explore the prevailing vocabulary, tools, and standards used in the field and learn how the various facets including HTML5, XHTML, CSS, JavaScript, php, Ajax, multimedia, scripting languages, HTTP, clients, servers, and databases function together in today's web environment. The course provides a solid web development foundation, focusing on content and client-side (browser) components (HTML5, XHTML, CSS, JavaScript, php, multimedia), with an overview of the server-side technologies. In addition, software and services that are easily incorporated into a website (for example, maps, checkout, blogs, content management) are surveyed and discussed. Students produce an interactive website on the topic of their choice for the final project and leave the course prepared for more advanced and focused web development studies.	

<b>Course Code</b>	CPE144L
<b>Course Title</b>	MOBILE APPLICATION AND DEVELOPMENT (LABORATORY)
<b>Pre-Requisite</b>	CPE142L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course introduces students to programming technologies, design and development related to mobile applications. Topics include accessing device capabilities, industry standards, operating systems, and programming for mobile applications using an OS Software Development Kit (SDK). Upon completion, students should be able to create basic applications for mobile devices.

<b>Course Code</b>	CPE151
<b>Course Title</b>	OPERATING SYSTEMS
<b>Pre-Requisite</b>	CS105L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course includes different policies and strategies used by an operating system. Topics include operating systems structures, process management, storage management, file management and distributed systems.

<b>Course Code</b>	CPE151L
<b>Course Title</b>	OPERATING SYSTEMS (LABORATORY)
<b>Pre-Requisite</b>	CS105L
<b>Co-Requisite</b>	CPE151
<b>Credit units</b>	1.0

<b>Course Description:</b>
The laboratory course focuses on the hands-on experience on operating system.

<b>Course Code</b>	CPE181
<b>Course Title</b>	CPE LAWS AND PROFESSIONAL PRACTICE
<b>Pre-Requisite</b>	HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course provides the importance of the professional and ethical responsibilities of practicing computer engineers and the effects of their work on society; the importance of understanding contemporary issues, lifelong learning strategies; and applicable IT laws in the field of computer engineering.

<b>Course Code</b>	CPE191F – 1
<b>Course Title</b>	CPE SEMINARS AND FIELD TRIPS (FIELD)
<b>Pre-Requisite</b>	CPE109-1, CPE144L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course includes seminars and lectures on current trends and issues on Computer Engineering developments. Include field trips to different companies and plants dealing with computer system facilities.

<b>Course Code</b>	CPE98-3
<b>Course Title</b>	CPE CORRELATION 1
<b>Pre-Requisite</b>	MATH800E, CPE801E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.

<b>Course Code</b>	CPE198-4
<b>Course Title</b>	CPE CORRELATION 2
<b>Pre-Requisite</b>	CPE802E, CPE803E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the professional courses to ensure mastery and retention.

<b>Course Code</b>	CPE199R – 1
<b>Course Title</b>	CPE PRACTICUM
<b>Pre-Requisite</b>	CPE143L, CS105L, ECE101-3, HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course enables students to relate their acquired competencies to the realities and problems of industries in a multidisciplinary environment. This may include involvement in the industry's manpower requirements, development and research concerns, trainings, applications of principles, environmental concerns, ethical and behavioral concerns, decision making, and equipment and materials concerns.

<b>Course Code</b>	CPE801E
<b>Course Title</b>	ENGINEERING SCIENCES EXIT EXAM
<b>Pre-Requisite</b>	CHM031, PHY035, EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in general science courses (chemistry and physics) and general engineering courses (engineering economy, engineering management, engineering mechanics, and environmental science).

<b>Course Code</b>	CPE802E
<b>Course Title</b>	COMPUTER ENGINEERING 1 EXIT EXAM

<b>Pre-Requisite</b>	CPE142L, CPE143L, CS105L, CPE107-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in select professional courses to ensure mastery and retention

<b>Course Code</b>	CPE803E
<b>Course Title</b>	COMPUTER ENGINEERING 2 EXIT EXAM
<b>Pre-Requisite</b>	CPE109-1, CPE110-1, CPE113-1, CPE151, CPE181
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in select professional courses to ensure mastery and retention

<b>Course Code</b>	CS105L
<b>Course Title</b>	DATA STRUCTURES AND ALGORITHMS (LABORATORY)
<b>Pre-Requisite</b>	CPE142L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Solving computational problems that involve manipulating collections of data, study a core set of data abstractions, data structures, and algorithms that provide a foundation for writing efficient program.

<b>Course Code</b>	DRAW021W
<b>Course Title</b>	ENGINEERING DRAWING 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings.

<b>Course Code</b>	DRAW023L-1
<b>Course Title</b>	COMPUTER AIDED DRAFTING (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	DS100L
<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.

<b>Course Code</b>	ECE101-3
<b>Course Title</b>	FUNDAMENTAL OF ELECTRONIC CIRCUITS
<b>Pre-Requisite</b>	EE101-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course discusses the construction, operation and characteristics of basic electronic devices such as junction diodes, bipolar junction transistors, Field Effect Transistors and MOS Field Effect Transistors and oscillators.

<b>Course Code</b>	ECE101L-3
<b>Course Title</b>	FUNDAMENTAL OF ELECTRONIC CIRCUITS (LABORATORY)
<b>Pre-Requisite</b>	EE101L-3
<b>Co-Requisite</b>	ECE101-3
<b>Credit units</b>	1.0

**Course Description:**

This course is the laboratory component of the course Fundamentals of Electronic Circuits (Lecture) that allows students to verify theoretical concepts pertaining to the operation of electronic devices such as the PN junction diodes, BJT and FET and their subsequent applications to electronics circuits involving rectification, amplification and switching applications. The use of laboratory equipment and apparatus to verify the characteristics of diodes and transistor devices, and their operations in circuits such as rectifiers, voltage regulators, amplifiers, oscillators and switches are emphasized. Such equipment includes but not limited to the curve tracer, the oscilloscope, signal generator and multi-meters.

<b>Course Code</b>	ECE121L
<b>Course Title</b>	COMPUTER-AIDED CALCULATIONS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course utilizes the capability of technology in facilitating the understanding of basic mathematical principles and operations. The MATLAB software will be used to perform algebraic operations, differentiations, integration, matrix operations, graphics manipulation and some basic MATLAB programming. This course also presents software as a tool for gathering quick results from mathematical simulations and analysis.

<b>Course Code</b>	ECE130
<b>Course Title</b>	FEEDBACK AND CONTROL SYSTEMS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course includes the control devices, equations of a systems and block diagram of systems.

<b>Course Code</b>	EE099L
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<b>Course Title</b>	BASIC ELECTRICITY AND ELECTRONICS WORKSHOP (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This Lab covers all the basic devices that serve as the most basic building block of almost all electronic and electrical devices

<b>Course Code</b>	EE101-3
<b>Course Title</b>	FUNDAMENTALS OF ELECTRICAL CIRCUITS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course introduces the fundamental concepts, circuit laws, theorems and techniques used in electrical circuit analysis and transient analysis, as well as its application. The course covers circuit topologies and DC excitations, transient response, AC response, and polyphase circuits. The use of computer software for circuit simulation and design are emphasized to expose students to computer-based tools.

<b>Course Code</b>	EE101L-3
<b>Course Title</b>	FUNDAMENTALS OF ELECTRICAL CIRCUITS (LABORATORY)
<b>Pre-Requisite</b>	PHY035L
<b>Co-Requisite</b>	EE101-3
<b>Credit units</b>	3.0

**Course Description:**

This course allows the students to verify the laws and theorems discussed in Fundamentals of Electrical Circuits (lecture) through simulation, experimentation and project construction. The course topics include experimental determination of the characteristics of the different circuit configurations (series, parallel, series/parallel, delta, and wye), electrical power, Ohm's Law, Kirchhoff's Voltage and Current Laws, Superposition Theorem, Thevenin's equivalent circuit, and maximum power transfer. The use of computer software for circuit simulation and design are used as basis in verifying experimental results and to expose students to computer-based tools.

<b>Course Code</b>	EECO102
<b>Course Title</b>	ENGINEERING ECONOMY
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

<b>Course Code</b>	EENV102
<b>Course Title</b>	ENVIRONMENTAL SCIENCES AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Ecological framework of sustainable development; pollution environments: water, air, and solid; waste treatment processes, disposal, and management; government legislation, rules, and

regulation related to the environment and waste management; and environmental management system.

<b>Course Code</b>	EMGT100
<b>Course Title</b>	ENGINEERING MANAGEMENT
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course will entail students to learn the basic function of a manager applicable in decision making which are applicable to the real world problems. Furthermore, students would learn how to apply planning, leading, organizing and control principles into the resources in order to increase the efficiency.

<b>Course Code</b>	EMGT100L
<b>Course Title</b>	PROJECT MANAGEMENT (LABORATORY)
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course allows students to experience hands-on activities in project management through the use of application software.

<b>Course Code</b>	IE101-1
<b>Course Title</b>	ENGINEERING DATA ANALYSIS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how "chance" plays a role in statistical analysis. Probability distributions of random variables and their uses are also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

<b>Course Code</b>	MATH031
<b>Course Title</b>	MATHEMATICS FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers pre-calculus topics such as Algebra, Geometry, Trigonometry

<b>Course Code</b>	MATH041
<b>Course Title</b>	ENGINEERING CALCULUS 1
<b>Pre-Requisite</b>	MATH031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in differential calculus. It essentially covers core concepts of limit, continuity and differentiability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

<b>Course Code</b>	MATH042
<b>Course Title</b>	ENGINEERING CALCULUS 2
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

#### **Course Description:**

This covers pre-calculus topics necessary in integral calculus. It then introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

<b>Course Code</b>	MATH056
<b>Course Title</b>	DIFFERENTIAL EQUATIONS
<b>Pre-Requisite</b>	MATH042
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

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

<b>Course Code</b>	MATH116
<b>Course Title</b>	ADVANCE ENGINEERING MATHEMATICS
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

A study of selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering

<b>Course Code</b>	MATH161
<b>Course Title</b>	NUMERICAL METHODS
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course covers the concepts of numerical analysis and computer software tools in dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.

<b>Course Code</b>	MATH161L
<b>Course Title</b>	NUMERICAL METHODS (LABORATORY)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	MATH161
<b>Credit units</b>	1.0

**Course Description:**

The course provides background on numerical analysis needed to solve engineering problems numerically when their analytical solution is either not available or difficult to obtain. MATLAB programming environment or its equivalent will be introduced and used in the course.

<b>Course Code</b>	MATH800E
<b>Course Title</b>	ENGINEERING MATHEMATICS EXIT EXAM
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in mathematics courses, namely: differential calculus, integral calculus, differential equations, and probability and statistics.

<b>Course Code</b>	NETA172P-1
<b>Course Title</b>	CCNA ROUTING AND SWITCHING 1(PAIRED)
<b>Pre-Requisite</b>	PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course builds on Network Administration 1 and expounds on basic networks using routers to connect two or more network nodes. It covers the architecture, structure, functions and components of the Internet and other computer networks. Students achieve a basic understanding of how networks operate and how to build simple local area networks (LAN), perform basic configurations for routers and switches, and implement Internet Protocol (IP).

<b>Course Code</b>	PHY035
<b>Course Title</b>	PHYSICS FOR ENGINEERS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

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

<b>Course Code</b>	PHY035L
<b>Course Title</b>	PHYSICS FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY035

<b>Credit units</b>	1.0
<b>Course Description:</b>	
A fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in the physics for engineers.	

<b>Course Code</b>	RES101
<b>Course Title</b>	METHODS OF RESEARCH
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	SAF102
<b>Course Title</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH
<b>Pre-Requisite</b>	CHEM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course tackles key Occupational Health and Safety (OSH) concepts, principles and practices that are foundational knowledge requirements applicable in almost all industries. Specifically, it assists learners in identifying the key elements in the OSH situation both here and abroad; determine existing and potential safety and health hazards; identify the range of control measures; discuss pertinent provisions of Philippine laws that refer to occupational safety and health; explain key principles in effectively communicating OSH; identify components of effective OSH programs and demonstrate some skills in identifying hazards and corresponding control measures at the workplace.

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

<b>Course Description:</b>
Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

<b>Course Code</b>	TEC100-2
<b>Course Title</b>	TECHNOPRENEURSHIP
<b>Pre-Requisite</b>	EMGT100, ACT099
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

## GENERAL EDUCATION COURSES

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### Course Description:

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### Course Description:

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### Course Description:

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM081
<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as

merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

#### **Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	2.0
<b>Course Description:</b>	
This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.	

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal is for the students to understand and appreciate our rich past by deriving insights from those who were actually present at the time of the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels *Noli Me Tangere* and *El Filibusterismo*, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Dont's among professionals, especially in culturally pluralistic spaces such as Mindanao.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Dont's among professionals, especially in culturally pluralistic spaces such as Mindanao.

# BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

## CORE COURSES

<b>Course Code</b>	ACT099
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course seeks to enable participants with little to no accounting background to explain and apply the principles, basic tools, and techniques of the accounting process.

<b>Course Code</b>	CAP200D
<b>Course Title</b>	CAPSTONE DESIGN/ THESIS 1 (LABORATORY)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	CAP200D-1
<b>Course Title</b>	CAPSTONE DESIGN/ THESIS 2 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Implementation of a capstone project based on an approved proposal.

<b>Course Code</b>	CAP200D-2
<b>Course Title</b>	CAPSTONE DESIGN/ THESIS 3 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1

**Course Description:**

Oral presentation and Final Defense

<b>Course Code</b>	CE104-2
<b>Course Title</b>	MECHANICS OF DEFORMABLE BODIES FOR EE
<b>Pre-Requisite</b>	MEC100-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course covers the fundamental concepts of stresses and strains such as axial stress, shearing stress, bearing stress, torsion, flexural stress and strain-stress relationship.

<b>Course Code</b>	CE120-1
<b>Course Title</b>	FLUID MECHANICS FOR EE

<b>Pre-Requisite</b>	MEC100-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with the nature and physical properties of fluids as well as the identification and measurement of fluid properties. It emphasizes the application of conservation laws on mass, energy and momentum to fluid systems either incompressible or compressible flow, inviscid or viscous flow as well as head loss calculation on pipes and fittings.

<b>Course Code</b>	CHM031
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course provides students with core concepts of chemistry that are important in the practice of the engineering profession.

<b>Course Code</b>	CHM031L
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

A fundamental laboratory course designed to relate and apply the principles and theories in chemistry to engineering practices. It is a combination of experimental and calculation laboratory.

<b>Course Code</b>	CPE001L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including: identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.

<b>Course Code</b>	CPE101-2
<b>Course Title</b>	LOGIC CIRCUITS AND SWITCHING THEORY FOR EE
<b>Pre-Requisite</b>	ECE101-4
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course provides a review of number systems, coding and Boolean algebra; inputs and outputs; gates and gating networks; combinational circuits; standard form; minimization; sequential circuits; state and machine equivalence; asynchronous sequential circuits; race conditions; algorithmic state machines; and design of digital sub-systems.

<b>Course Code</b>	CPE101L-2
<b>Course Title</b>	LOGIC CIRCUITS AND SWITCHING THEORY FOR EE (LABORATORY)
<b>Pre-Requisite</b>	ECE101L-4
<b>Co-Requisite</b>	CPE101-2

<b>Credit units</b>	1.0
<b>Course Description:</b>	
This course covers the laboratory works of the given lectures.	

<b>Course Code</b>	CPE103-2
<b>Course Title</b>	MICROPROCESSOR SYSTEMS FOR ELECTRICAL ENGINEERS
<b>Pre-Requisite</b>	CPE101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
The course includes history and evolution, principles, and applications of microprocessors. The focus is on the basic understanding of the architectural design, functional parts, operations, function and programming. It also covers the study of various types of microprocessors and the fundamental concepts of microcontrollers.

<b>Course Code</b>	CPE103L-2
<b>Course Title</b>	MICROPROCESSOR SYSTEMS FOR ELECTRICAL ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	CPE101L-2
<b>Co-Requisite</b>	CPE103-2
<b>Credit units</b>	2.0

<b>Course Description:</b>
A laboratory course to accompany CPE103-2

<b>Course Code</b>	CPE126
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Class Schedule</b>	

<b>Course Description:</b>
This course provides an introductory overview of Artificial Intelligence (AI) with a focus on its applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE126L
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE (LABORATORY)
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	CPE126
<b>Credit units</b>	1.0

<b>Course Description:</b>
This course provides a hands-on laboratory experience with various machine learning and artificial intelligence models with a focus on their applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	DRAW021W
<b>Course Title</b>	ENGINEERING DRAWING 1
<b>Pre-Requisite</b>	NONE

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	The course deals with the practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings.
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<b>Course Code</b>	DRAW023L-1
<b>Course Title</b>	COMPUTER AIDED DRAFTING (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	This course deals with the concepts of computer-aided drafting (CAD); introduction to the CAD environment; terminologies; and the general operating procedures and techniques in entering and executing basic CAD commands.
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<b>Course Code</b>	DS100L
<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.
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<b>Course Code</b>	ECE101-4
<b>Course Title</b>	ELECTRONICS CIRCUITS: DEVICES AND ANALYSIS
<b>Pre-Requisite</b>	EE101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	This course covers the introduction to quantum mechanics of solid-state electronics; diode and transistor characteristics and models (BJT and FET); diode circuit analysis and applications; transistor biasing; small signal analysis; large signal analysis; transistor amplifiers; Boolean logic; and transistor switch.
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<b>Course Code</b>	ECE101L-4
<b>Course Title</b>	ELECTRONICS CIRCUITS: DEVICES AND ANALYSIS (LAB)
<b>Pre-Requisite</b>	EE101L-2
<b>Co-Requisite</b>	ECE101-4
<b>Credit units</b>	1.0

<b>Course Description:</b>	This course is the laboratory allows students to verify theoretical concepts pertaining to the operation of electronic devices such as the PN junction diodes, BJT and FET and their subsequent applications to electronics circuits involving rectification, amplification and switching applications. The use of laboratory equipment and apparatus to verify the characteristics of diodes and transistor devices, and their operations in circuits such as rectifiers, voltage regulators, amplifiers, oscillators and switches are emphasized. Such equipment includes but not limited to the curve tracer, the oscilloscope, signal generator and multi-meters.
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<b>Course Code</b>	ECE115-1
<b>Course Title</b>	ELECTROMAGNETICS FOR EE

<b>Pre-Requisite</b>	PHY035, MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with the study of electric and magnetic fields; resistive, dielectric and magnetic materials, coupled circuits, magnetic circuits and fields, and time-varying electromagnetic fields. It involves a review of vector analysis and types of coordinate system (Cartesian, cylindrical and spherical coordinate systems). Topics covered are dot and cross products of vector, Coulomb's law and electric field intensity of different charge configuration (volume, point, line sheet charge), electric flux density, Gauss's Law, divergence, Maxwell's equations and energy and potential.

<b>Course Code</b>	ECE121L
<b>Course Title</b>	COMPUTER-AIDED CALCULATIONS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course utilizes the capability of technology in facilitating the understanding of basic mathematical principles and operations. The MATLAB software will be used to perform algebraic operations, differentiations, integration, matrix operations, graphics manipulation and some basic MATLAB programming. This course also presents software as a tool for gathering quick results from mathematical simulations and analysis.

<b>Course Code</b>	ECE130
<b>Course Title</b>	FEEDBACK AND CONTROL SYSTEMS
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the basics of control systems; terminologies and diagrams; homogeneous and transient responses of systems; systems representation such as transfer functions, state-space analysis of phase variables and techniques, nth order linear differential equations; modeling, pole-zero gain data and frequency response data; Laplace transforms; block diagrams interconnections and simplifications; signal flow graphs; conversion of block diagrams to signal flow graphs and vice versa; root locus; Bode, Nyquist and Polar plots; PID controllers; sensitivity and stability criteria; linear feedback systems; and compensation techniques

<b>Course Code</b>	ECE103-1
<b>Course Title</b>	INDUSTRIAL ELECTRONICS FOR ELECTRICAL ENGINEERS
<b>Pre-Requisite</b>	ECE101-4
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course teaches the theory and operation of solid-state devices and control circuits for industrial processes; industrial control applications; electronics instrumentation; transducers; data acquisition system, power supply and voltage regulator. It also covers photo electronics, sensors and instruments used in industrial applications. It includes variable- frequency drives, DC motor, servomotors and stepper motor drives; application of relay logic circuits; and interfacing and programming of PLCs

<b>Course Code</b>	ECE103L-1
<b>Course Title</b>	INDUSTRIAL ELECTRONICS FOR ELECTRICAL ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	ECE101L-4
<b>Co-Requisite</b>	ECE103-1
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany ECE103-1.

<b>Course Code</b>	ECE132 – 1
<b>Course Title</b>	INSTRUMENTATION AND CONTROL
<b>Pre-Requisite</b>	ECE130
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Introduction to advanced instrumentation and control systems to include study on Non Linear Systems, Stability, Model Reference Adaptive Control, Self Tuning Regulators, Recent trends and applications of adaptive Control and Optimal Control

<b>Course Code</b>	ECE132L – 1
<b>Course Title</b>	MANAGEMENT ENGINEERING PROJECTS (LABORATORY)
<b>Pre-Requisite</b>	ECE130
<b>Co-Requisite</b>	ECE132-1
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany EE132-1.

<b>Course Code</b>	ECE140-1
<b>Course Title</b>	PRINCIPLES OF COMMUNICATION SYSTEM FOR EE
<b>Pre-Requisite</b>	ECE101-4
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Fundamental principles of electronic communications theory and its applications. Emphasis is on the introduction of electronic communication systems, analysis and calculations of analog and digital modulation, transmission and reception. Provides insights, framework, knowledge and competencies necessary in analyzing basic communication system as a preparation for electronics engineering profession.

<b>Course Code</b>	EE099L
<b>Course Title</b>	BASIC ELECTRICITY AND ELECTRONICS WORKSHOP (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This Lab covers all the basic devices that serve as the most basic building block of almost all electronic and electrical devices

<b>Course Code</b>	EE100L
<b>Course Title</b>	ELECTRICAL ENGINEERING ORIENTATION(LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Introduction to various tracks of specialization of electrical engineering, emphasis on ethics, responsibility and professionalism. This course introduces basic principle of electrical engineering and its application to the field of practice. The course also deals with the understanding the concepts of basic drilling unit electrical lay-out and computation.

<b>Course Code</b>	EE100L-1
<b>Course Title</b>	BUILDING WIRING INSTALLATION TECHNOLOGY (LABORATORY)
<b>Pre-Requisite</b>	EE100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers knowledge, skills and attitude in electrical installation. It deals with good house keeping and safety,

<b>Course Code</b>	EE100L-2
<b>Course Title</b>	INDUSTRIAL MOTOR CONTROL TECHNOLOGY (LABORATORY)
<b>Pre-Requisite</b>	EE100L-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course is a study of electric motors and control systems as applied to the industrial trades. Included in this course are maintenance, installation, wiring and wiring diagrams, troubleshooting of motor controls as well as the study of AC and DC drives.

<b>Course Code</b>	EE101-2
<b>Course Title</b>	CIRCUITS 1
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course covers nodal and mesh analysis; application of network theorems in circuit analysis; analysis of circuits with controlled sources and ideal op-amps; fundamentals of capacitors and inductors; analysis of dc-driven RL, RC, and RLC circuits; sinusoidal steady-state analysis of general RLC circuits

<b>Course Code</b>	EE101L-2
<b>Course Title</b>	CIRCUITS 1 (LABORATORY)
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	EE101-2
<b>Credit units</b>	1.0

**Course Description:**

This course allows the students to verify the laws and theorems through simulation, experimentation and project construction. The course topics include experimental determination of the characteristics of the different circuit configurations (series, parallel, series/parallel, delta, and wye), electrical power, Ohm's Law, Kirchhoff's Voltage and Current Laws, Superposition Theorem, Thevenin's equivalent circuit, and maximum power transfer. The use of computer software for circuit simulation and design are used as basis in verifying experimental results and to expose students to computer-based tools.

<b>Course Code</b>	EE102 –1
<b>Course Title</b>	CIRCUITS 2
<b>Pre-Requisite</b>	EE101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with sinusoidal steady-state analysis in the frequency domain; AC circuit power analysis; analysis of polyphase circuits and magnetically-coupled circuits; frequency response; per unit system and symmetrical components; and two-port networks

<b>Course Code</b>	EE102L –1
<b>Course Title</b>	CIRCUITS 2 (LABORATORY)

<b>Pre-Requisite</b>	EE101-2
<b>Co-Requisite</b>	EE102-1
<b>Credit units</b>	1.0

**Course Description:**

The course allows students to verify the concepts on sinusoidal steady-state analysis in the frequency domain; AC circuit power analysis; analysis of polyphase circuits and magnetically-coupled circuits; frequency response; per unit system and symmetrical components; and two-port networks through experiments and simulations.

<b>Course Code</b>	EE103
<b>Course Title</b>	CIRCUITS 3
<b>Pre-Requisite</b>	EE102-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course is an introduction to the field power system. Lectures and Laboratory exercises focus on polyphase systems, especially the most economical three-phase system. It also discusses on symmetrical components which is one of the requirements to fault calculations. Topics include analysis of balanced three-phase systems, with balanced and unbalanced loading; analysis of circuits with magnetically-coupled coils; symmetrical components; per unit calculations.

<b>Course Code</b>	EE103L
<b>Course Title</b>	CIRCUITS 3 (LABORATORY)
<b>Pre-Requisite</b>	EE102L-1
<b>Co-Requisite</b>	EE103
<b>Credit units</b>	1.0

**Course Description:**

This course covers the laboratory works of the given lectures.

<b>Course Code</b>	EE106 – 1
<b>Course Title</b>	DC MACHINERY
<b>Pre-Requisite</b>	EE102-1, ECE115-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course comprises of lectures and laboratory exercises which cover the basic principles and theories of DC Machinery in preparation for study in AC Machinery. Topics include electromechanical energy conversion, generalized machine model, and the operating characteristics of DC machines and synchronous machines.

<b>Course Code</b>	EE106L – 1
<b>Course Title</b>	DC MACHINERY (LABORATORY)
<b>Pre-Requisite</b>	EE102L-1
<b>Co-Requisite</b>	EE106 – 1
<b>Credit units</b>	1.0

**Course Description:**

This course covers the laboratory works of the given lectures.

<b>Course Code</b>	EE107 – 1
<b>Course Title</b>	AC MACHINERY
<b>Pre-Requisite</b>	EE106-1
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	3.0
<b>Course Description:</b>	
The course deals with the fundamentals of DC machinery; DC motors and generators	

<b>Course Code</b>	EE107L – 1
<b>Course Title</b>	AC MACHINERY (LABORATORY)
<b>Pre-Requisite</b>	EE106L-1
<b>Co-Requisite</b>	EE107 – 1
<b>Credit units</b>	1.0

<b>Course Description:</b>
A laboratory course to accompany EE107-1.

<b>Course Code</b>	EE109 - 2
<b>Course Title</b>	ELECTRICAL SYSTEMS AND ILLUMINATION DESIGN
<b>Pre-Requisite</b>	EE107-1, EE122-1
<b>Co-Requisite</b>	EE182L
<b>Credit units</b>	3.0

<b>Course Description:</b>
The course provides knowledge, understanding and skills in designing electrical wiring system for residential, commercial buildings, and industrial facilities through the specifications and standards mandated by the Philippine Electrical Code and provisions from the Local Government on electrical wiring installation. The course includes illumination design and cost estimation; energy-efficient lighting systems for residential, commercial, and industrial establishments; roadway lighting, and lighting maintenance.

<b>Course Code</b>	EE109L – 2
<b>Course Title</b>	ELECTRICAL SYSTEM DESIGN (LABORATORY)
<b>Pre-Requisite</b>	EE107L-1, EE122L-1
<b>Co-Requisite</b>	EE109-2
<b>Credit units</b>	1.0

<b>Course Description:</b>
A laboratory course to accompany EE109-2 which focuses on electrical system design.

<b>Course Code</b>	EE109L – 3
<b>Course Title</b>	ILLUMINATION ENGINEERING DESIGN (LABORATORY)
<b>Pre-Requisite</b>	EE107L-1, EE122L-1
<b>Co-Requisite</b>	EE109-2
<b>Credit units</b>	1.0

<b>Course Description:</b>
A laboratory course to accompany EE109-2 which focuses on illumination engineering design.

<b>Course Code</b>	EE122 – 1
<b>Course Title</b>	AC APPARATUS AND DEVICES
<b>Pre-Requisite</b>	EE103
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course provides characteristics, principle of operation, and applications of single-phase and three-phase transformers, and protective devices such as fuses and circuit breakers. It includes various types of transformers based on different criteria, types of fuses and circuit breakers, parallel operation of transformers, and standard ratings.

<b>Course Code</b>	EE122L – 1
<b>Course Title</b>	AC APPARATUS AND DEVICES (LABORATORY)
<b>Pre-Requisite</b>	EE103L
<b>Co-Requisite</b>	EE122 – 1
<b>Credit units</b>	1.0
<b>Course Description:</b>	A laboratory course to accompany EE122-1.

<b>Course Code</b>	EE134 – 1
<b>Course Title</b>	POWER SYSTEMS ANALYSIS 1
<b>Pre-Requisite</b>	EE182L, EE122-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Course Description:</b>	This course deals with the study on the basic structure of power systems, recent trends and innovations in power systems, transmission line parameters, network modeling and calculations, load flow studies, short circuit calculations and use of computer software for simulation

<b>Course Code</b>	EE134L – 1
<b>Course Title</b>	POWER SYSTEMS ANALYSIS 1 (LABORATORY)
<b>Pre-Requisite</b>	EE182L, EE122L-1
<b>Co-Requisite</b>	EE134-1
<b>Credit units</b>	1.0
<b>Course Description:</b>	A laboratory course to accompany EE134.

<b>Course Code</b>	EE135 – 1
<b>Course Title</b>	POWER SYSTEMS ANALYSIS 2
<b>Pre-Requisite</b>	EE134-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Course Description:</b>	The course discusses the concepts that include types of power plants, power plant operations and protection, interconnections and arrangement of equipment for power plants, energy storage, and environmental degradation and use of renewable energy.

<b>Course Code</b>	EE135L – 1
<b>Course Title</b>	POWER SYSTEMS ANALYSYS 2 (LABORATORY)
<b>Pre-Requisite</b>	EE134L-1
<b>Co-Requisite</b>	EE135-1
<b>Credit units</b>	1.0
<b>Course Description:</b>	A laboratory course to accompany EE135.

<b>Course Code</b>	EE136L – 1
<b>Course Title</b>	FUNDAMENTALS OF POWER PLANT ENGINEERING DESIGN (LAB)
<b>Pre-Requisite</b>	EE134-1, EE134L-1
<b>Co-Requisite</b>	EE135L-1
<b>Credit units</b>	1.0
<b>Course Description:</b>	

It covers topics on load graphics, types of power plants, power plant operation and protection, interconnections, economics of electric service, and arrangement of equipment for modern plants and includes the design of a power plant, its interconnection, operation, economics, and protection.

<b>Course Code</b>	EE137 – 1
<b>Course Title</b>	DISTRIBUTION SYSTEMS AND SUBSTATION DESIGN
<b>Pre-Requisite</b>	EE134-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with study and design of primary and secondary distribution networks, load characteristics, voltage regulation, metering techniques and systems, and protection of distribution systems.

<b>Course Code</b>	EE137L – 1
<b>Course Title</b>	DISTRIBUTION SYSTEMS AND SUBSTATION DESIGN (LABORATORY)
<b>Pre-Requisite</b>	EE134L-1
<b>Co-Requisite</b>	EE137 – 1
<b>Credit units</b>	1.0

**Course Description:**

The course allows students to conduct laboratory activities on the design of primary and secondary distribution networks, load characteristics, voltage regulation, metering techniques and systems, and protection of distribution systems.

<b>Course Code</b>	EE181
<b>Course Title</b>	ELECTRICAL ENGINEERING LAW, CODES, AND ETHICS
<b>Pre-Requisite</b>	HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course is designed to prepare electrical engineering students for professional practice. Topics include education and practice of the New Electrical Engineering Law and other laws governing the profession, Philippine Grid Code, Philippine Distribution Code, Basic Contracts and ethics in relation to the practice of the electrical engineering profession.

<b>Course Code</b>	EE182C
<b>Course Title</b>	ELECTRICAL STANDARDS AND PRACTICE (COMPUTATIONAL)
<b>Pre-Requisite</b>	EE181
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course provides the different electrical practices in accordance to local and international standards.

<b>Course Code</b>	EE191F – 1
<b>Course Title</b>	EE SEMINARS AND COLLOQUIUM (FIELD)
<b>Pre-Requisite</b>	EE182C
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with a series of lectures and seminars on selected topics that are highly relevant to electrical engineering but are not covered in any of the other formal courses. It covers recent advances in electrical engineering. It is also a venue for the students to present their projects and researches in electrical engineering

<b>Course Code</b>	EE198-3
<b>Course Title</b>	EE CORRELATION 1
<b>Pre-Requisite</b>	MATH800E, CHE801E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1

**Course Description:**

This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.

<b>Course Code</b>	EE198-4
<b>Course Title</b>	EE CORRELATION 2
<b>Pre-Requisite</b>	EE134-1, ECE132-1, ECE140-1, EE802E, EE803E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.

<b>Course Code</b>	EE199R – 1
<b>Course Title</b>	EE PRACTICUM
<b>Pre-Requisite</b>	EE102-1, ECE101-4, HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Actual On-the-Job Training or Industry Internship in the field of specialization.

<b>Course Code</b>	EE801E
<b>Course Title</b>	ENGINEERING SCIENCES EXIT EXAM
<b>Pre-Requisite</b>	CHM031, PHY035, EECO102, MEC100-1, ME111-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in general science courses (chemistry and physics) and general engineering courses (engineering economy, engineering management, engineering mechanics, and environmental science).

<b>Course Code</b>	EE802E
<b>Course Title</b>	ELECTRICAL ENGINEERING 1 EXIT EXAM
<b>Pre-Requisite</b>	CPE101-2, EE107-1, EE122-1
<b>Co-Requisite</b>	EE182L, ECE103-1
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in select professional courses.

<b>Course Code</b>	EE803E
<b>Course Title</b>	ELECTRICAL ENGINEERING 2 EXIT EXAM
<b>Pre-Requisite</b>	EE107-1, EE122-1, EE182L, EE109-2, ECE140-1, EE134-1
<b>Co-Requisite</b>	EE134-1
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in select professional courses.

<b>Course Code</b>	EECO102
<b>Course Title</b>	ENGINEERING ECONOMY
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

<b>Course Code</b>	EENV102
<b>Course Title</b>	ENVIRONMENTAL SCIENCES AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	EMGT100
<b>Course Title</b>	ENGINEERING MANAGEMENT
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course will entail students to learn the basic function of a manager applicable in decision making which are applicable to the real world problems. Furthermore, students would learn how to apply planning, leading, organizing and control principles into the resources in order to increase the efficiency.

<b>Course Code</b>	EMGT100L
<b>Course Title</b>	PROJECT MANAGEMENT (LABORATORY)
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course allows students to experience hands-on activities in project management through the use of application software.

<b>Course Code</b>	IE101-1
<b>Course Title</b>	ENGINEERING DATA ANALYSIS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how "chance" plays a role in statistical analysis. Probability distributions of random variables and their uses are

also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

<b>Course Code</b>	MATH031
<b>Course Title</b>	MATHEMATICS FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers pre-calculus topics such as Algebra, Geometry, Trigonometry

<b>Course Code</b>	MATH041
<b>Course Title</b>	ENGINEERING CALCULUS 1
<b>Pre-Requisite</b>	MATH031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in differential calculus. It essentially covers core concepts of limit, continuity and differentiability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

<b>Course Code</b>	MATH042
<b>Course Title</b>	ENGINEERING CALCULUS 2
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in integral calculus. It then introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

<b>Course Code</b>	MATH056
<b>Course Title</b>	DIFFERENTIAL EQUATIONS
<b>Pre-Requisite</b>	MATH042
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	MATH116
<b>Course Title</b>	ADVANCE ENGINEERING MATHEMATICS
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A study of selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering

<b>Course Code</b>	MATH161
<b>Course Title</b>	NUMERICAL METHODS
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the concepts of numerical analysis and computer software tools in dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.

<b>Course Code</b>	MATH161L
<b>Course Title</b>	NUMERICAL METHODS (LABORATORY)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	MATH161
<b>Credit units</b>	1.0

**Course Description:**

The course provides background on numerical analysis needed to solve engineering problems numerically when their analytical solution is either not available or difficult to obtain. MATLAB programming environment or its equivalent will be introduced and used in the course.

<b>Course Code</b>	MATH800E
<b>Course Title</b>	ENGINEERING MATHEMATICS EXIT EXAM
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in mathematics courses, namely: differential calculus, integral calculus, differential equations, and probability and statistics.

<b>Course Code</b>	ME111 - 1
<b>Course Title</b>	THERMODYNAMICS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	MEC100-1
<b>Course Title</b>	ENGINEERING MECHANICS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	MSE102
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course introduces the students to a broad study on the structure and composition of materials (metals, polymers, ceramics, and composite materials) and their properties and behavior in service environments.

<b>Course Code</b>	PHY035
<b>Course Title</b>	PHYSICS FOR ENGINEERS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

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

<b>Course Code</b>	PHY035L
<b>Course Title</b>	PHYSICS FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY035
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	RES101
<b>Course Title</b>	METHODS OF RESEARCH
<b>Pre-Requisite</b>	IE101-1, ENG024
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	SAF102
<b>Course Title</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course tackles key Occupational Health and Safety (OSH) concepts, principles and practices that are foundational knowledge requirements applicable in almost all industries. Specifically, it assists learners in identifying the key elements in the OSH situation both here and abroad; determine existing and potential safety and health hazards; identify the range of control measures; discuss pertinent provisions of Philippine laws that refer to occupational safety and health; explain key principles in effectively communicating OSH; identify components of effective OSH programs and demonstrate some skills in identifying hazards and corresponding control measures at the workplace.

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

<b>Course Code</b>	TEC100-2
<b>Course Title</b>	TECHNOPRENEURSHIP
<b>Pre-Requisite</b>	EMGT100, ACT099
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

## GENERAL EDUCATION COURSES

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Art Appreciation is a three-unit course that develops the students' ability to appreciate, analyze, and critique works of art. Through interdisciplinary and multimodal approaches, this course

equips students with a broad, practical, historical, philosophical, and social relevance of arts in order to hone students' ability to articulate their understanding of the arts. The course also develops students' competency in researching and curating art as well as conceptualizing, mounting, and evaluating art productions. The course aims to develop students' genuine appreciation for Philippine arts by providing them opportunities to explore the diversity and richness and their rootedness in Filipino culture that is Mindanao-centric.

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

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

<b>Course Code</b>	HUM081
<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	2.0
<b>Course Description:</b>	
In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.	

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal is for the students to understand and appreciate our rich past by deriving insights from those who were actually present at the time of the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
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<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels *Noli Me Tangere* and *El Filibusterismo*, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Don'ts among professionals, especially in culturally pluralistic spaces such as Mindanao.

# BACHELOR OF SCIENCE IN ELECTRONICS ENGINEERING

## CORE COURSES

<b>Course Code</b>	ACT099
<b>Course Title</b>	ACCOUNTING FOR NON-ACCOUNTANT
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### Course Description:

The course seeks to enable participants with little to no accounting background to explain and apply the principles, basic tools, and techniques of the accounting process.

<b>Course Code</b>	CAP200D
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 1 (LABORATORY)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

### Course Description:

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	CAP200D – 1
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 2 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

### Course Description:

Implementation of a capstone project based on an approved proposal.

<b>Course Code</b>	CAP200D – 2
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 3 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D - 1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

### Course Description:

Oral presentation and Final Defense

<b>Course Code</b>	CHM031
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### Course Description:

Basic concepts of matter and its classification; mass relationships in chemical reactions; properties of gases, liquids, and solids; concepts of thermochemistry; quantum theory and electronic behavior; periodic relationship of elements in the periodic table; intramolecular forces; and solutions.

<b>Course Code</b>	CHM031L
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS (LABORATORY)

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	CHM031L
<b>Credit units</b>	1.0

**Course Description:**

A fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in the chemistry for engineers.

<b>Course Code</b>	CPE001L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including: identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.

<b>Course Code</b>	CPE115-1
<b>Course Title</b>	LOGIC CIRCUIT AND SWITCHING THEORY
<b>Pre-Requisite</b>	ECE101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers review of number systems, coding and Boolean algebra; inputs and outputs; gates and gating networks; combinational circuits; standard form; minimization; sequential circuits; state and machine equivalence; asynchronous sequential circuits; race conditions; algorithmic state machines; design of digital subsystems.

<b>Course Code</b>	CPE115L-1
<b>Course Title</b>	LOGIC CIRCUIT AND SWITCHING THEORY (
<b>Pre-Requisite</b>	ECE101L-2
<b>Co-Requisite</b>	CPE115-1
<b>Credit units</b>	1.0

**Course Description:**

This course covers the actual laboratory works of inputs and outputs; gates and gating networks; combinational circuits; standard form; minimization; sequential circuits; state and machine equivalence; asynchronous sequential circuits; race conditions; algorithmic state machines; design of digital subsystems.

<b>Course Code</b>	CPE123-1
<b>Course Title</b>	MICROPROCESSOR AND MICROCONTROLLER SYSTEMS AND DESIGN
<b>Pre-Requisite</b>	CPE115-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course covers concepts involving microprocessor/ microcontroller systems architecture/organization including microprocessor/microcontroller programming, interfacing techniques, memory systems and bus standards. In the laboratory, the students will be involved with experiments using micro controllers and the use of microprocessor/ micro controller development systems and other tools.

<b>Course Code</b>	CPE123L-1
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<b>Course Title</b>	MICROPROCESSOR AND MICROCONTROLLER SYSTEMS AND DESIGN (LABORATORY)
<b>Pre-Requisite</b>	CPE115L-1
<b>Co-Requisite</b>	CPE123-1
<b>Credit units</b>	1.0

**Course Description:**

This course provides laboratory activities to understand the architecture of microprocessor-based systems; study of microprocessor operation, assembly language, arithmetic operations, and interfacing

<b>Course Code</b>	CPE126
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Class Schedule</b>	

**Course Description:**

This course provides an introductory overview of Artificial Intelligence (AI) with a focus on its applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE126L
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE (LABORATORY)
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	CPE126
<b>Credit units</b>	1.0

**Course Description:**

This course provides a hands-on laboratory experience with various machine learning and artificial intelligence models with a focus on their applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE142L
<b>Course Title</b>	OBJECT ORIENTED PROGRAMMING (LABORATORY)
<b>Pre-Requisite</b>	CPE001L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Introduces the fundamental concepts of programming from an object-oriented perspective. Topics are drawn from classes and objects, abstraction, encapsulation, data types, calling methods and passing parameters, decisions, loops, arrays and collections, documentation, testing and debugging, exceptions, design issues, inheritance, and polymorphic variables and methods. The course emphasizes modern software engineering and design principles.

<b>Course Code</b>	CPE144L
<b>Course Title</b>	MOBILE APPLICATION AND DEVELOPMENT (LABORATORY)
<b>Pre-Requisite</b>	CPE142L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course introduces students to programming technologies, design and development related to mobile applications. Topics include accessing device capabilities, industry standards, operating systems, and programming for mobile applications using an OS Software Development Kit (SDK). Upon completion, students should be able to create basic applications for mobile devices.

<b>Course Code</b>	DRAW021W
<b>Course Title</b>	ENGINEERING DRAWING 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings.

<b>Course Code</b>	DRAW023L-1
<b>Course Title</b>	COMPUTER AIDED DRAFTING (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	DS100L
<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.

<b>Course Code</b>	ECE100
<b>Course Title</b>	ELECTRONICS ENGINEERING ORIENTATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course discusses the curriculum for Electronics Engineering as well as how to prepare students for success through engineering design process, ethical decision-making, teamwork, and communicating to diverse audiences.

<b>Course Code</b>	ECE101-2
<b>Course Title</b>	ELECTRONICS DEVICES AND CIRCUITS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the introduction to quantum mechanics of solid-state electronics; diode and transistor characteristics and models (BJT and FET); diode circuit analysis and applications; transistor biasing; small signal analysis; large signal analysis; transistor amplifiers; Boolean logic; and transistor switch.

<b>Course Code</b>	ECE101L-2
<b>Course Title</b>	ELECTRONICS DEVICES AND CIRCUITS (LABORATORY)
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	ECE101-2
<b>Credit units</b>	1.0

**Course Description:**

This course is the laboratory allows students to verify theoretical concepts pertaining to the operation of electronic devices such as the PN junction diodes, BJT and FET and their subsequent applications to electronics circuits involving rectification, amplification and switching applications. The use of laboratory equipment and apparatus to verify the characteristics of diodes and transistor devices, and their operations in circuits such as rectifiers, voltage regulators, amplifiers, oscillators and switches are emphasized. Such equipment includes but not limited to the curve tracer, the oscilloscope, signal generator and multi-meters.

<b>Course Code</b>	ECE102-1
<b>Course Title</b>	ELECTRONICS CIRCUITS ANALYSIS AND DESIGN
<b>Pre-Requisite</b>	ECE101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with high frequency transistor models; analysis of transistor circuits; multi-stage amplifier, feedback, differential amplifiers and operational amplifiers; integrated circuit families (RTL, DTL, TTL, ECL, MOS)

<b>Course Code</b>	ECE102L-1
<b>Course Title</b>	ELECTRONICS CIRCUITS ANALYSIS AND DESIGN (LABORATORY)
<b>Pre-Requisite</b>	ECE101L-2
<b>Co-Requisite</b>	ECE102-1
<b>Credit units</b>	1.0

**Course Description:**

This is a laboratory course which deals on the application of high frequency transistor models; analysis of transistor circuits; multi-stage amplifier, feedback, differential amplifiers and operational amplifiers; integrated circuit families (RTL, DTL, TTL, ECL, MOS)

<b>Course Code</b>	ECE107-1
<b>Course Title</b>	ELECTRONIC SYSTEMS AND DESIGN
<b>Pre-Requisite</b>	ECE102-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

It covers the theory, operating characteristics and design of electronic devices and control circuits for industrial processes; industrial control applications; electronics instrumentation; transducers; data acquisition system; interfacing techniques; sensors

<b>Course Code</b>	ECE107L-1
<b>Course Title</b>	ELECTRONIC SYSTEMS AND DESIGN (LABORATORY)
<b>Pre-Requisite</b>	ECE102L-1
<b>Co-Requisite</b>	ECE107-1
<b>Credit units</b>	1.0

**Course Description:**

This laboratory course focuses on theory, operating characteristics and design of electronic devices and control circuits for industrial processes; industrial control applications; electronics instrumentation; transducers; data acquisition system; interfacing techniques; sensors

<b>Course Code</b>	ECE115
<b>Course Title</b>	ELECTROMAGNETICS FOR ECE
<b>Pre-Requisite</b>	PHY035, MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This course deals with vector algebra, vector calculus, vector analysis, and their applications in electric and magnetic fields, resistive, dielectric and magnetic materials, coupled circuits, magnetic circuits and fields, time-varying electromagnetic fields, and Maxwell's equations.

<b>Course Code</b>	ECE121L
<b>Course Title</b>	COMPUTER AIDED CALCULATIONS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course utilizes the capability of technology in facilitating the understanding of basic mathematical principles and operations. The MATLAB software will be used to perform algebraic operations, differentiations, integration, matrix operations, graphics manipulation and some basic MATLAB programming. This course also presents software as a tool for gathering quick results from mathematical simulations and analysis.

<b>Course Code</b>	ECE127
<b>Course Title</b>	INTRODUCTION TO BIOMEDICAL ENGINEERING
<b>Pre-Requisite</b>	ECE107-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course covers the introduction to the concepts of Human Anatomy and Medical Terminology; Basic Pathology, Diagnostics and Therapy; Origins and Meaning of Bio-signals; Electrodes for Measurement of Bio-signals; Physiological Instrumentation; Methods for Measurements of pressure flow and volume in the context of blood and respiratory gases; Sources of ionizing radiation; Radiation protection and safety, societal issues in biomedical engineering

<b>Course Code</b>	ECE130
<b>Course Title</b>	FEEDBACK AND CONTROL SYSTEMS
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the basics of control systems; terminologies and diagrams; homogeneous and transient responses of systems; systems representation such as transfer functions, state-space analysis of phase variables and techniques, nth order linear differential equations; modeling, pole-zero gain data and frequency response data; Laplace transforms; block diagrams interconnections and simplifications; signal flow graphs; conversion of block diagrams to signal flow graphs and vice versa; root locus; Bode, Nyquist and Polar plots; PID controllers; sensitivity and stability criteria; linear feedback systems; and compensation techniques

<b>Course Code</b>	ECE130L
<b>Course Title</b>	FEEDBACK AND CONTROL SYSTEMS (LABORATORY)
<b>Pre-Requisite</b>	MATH116, ECE121L

<b>Co-Requisite</b>	ECE130
<b>Credit units</b>	3.0
<b>Course Description:</b>	
This course deals with the basics of control systems; terminologies and diagrams; homogeneous and transient responses of systems; systems representation such as transfer functions, state-space analysis of phase variables and techniques, nth order linear differential equations; modeling, pole-zero gain data and frequency response data; Laplace transforms; block diagrams interconnections and simplifications; signal flow graphs; conversion of block diagrams to signal flow graphs and vice versa; root locus; Bode, Nyquist and Polar plots; PID controllers; sensitivity and stability criteria; linear feedback systems; and compensation techniques	

<b>Course Code</b>	ECE141-1
<b>Course Title</b>	PRINCIPLES OF COMMUNICATION SYSTEM
<b>Pre-Requisite</b>	ECE102-1, ECE115
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
This course deals with bandwidth; filters; linear modulation; angle modulation; phase locked loop; pulse modulation; multiplexing techniques; noise analysis; radio transmitters and receivers	

<b>Course Code</b>	ECE141L – 1
<b>Course Title</b>	PRINCIPLES OF COMMUNICATION SYSTEM (LABORATORY)
<b>Pre-Requisite</b>	ECE102L - 1
<b>Co-Requisite</b>	ECE141 - 1
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This course covers the actual laboratory works covered by the topics: bandwidth; filters; linear modulation; angle modulation; phase locked loop; pulse modulation; multiplexing techniques; noise analysis; radio transmitters and receivers	

<b>Course Code</b>	ECE142-1
<b>Course Title</b>	MODULATION AND CODING TECHNIQUES
<b>Pre-Requisite</b>	ECE141-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
It focuses on random variables, bit error rate; matched filter; Digital modulation techniques; ASK, FSK, QAM, PSK/QPSK, CDMA and W-CDMA systems; signal space; generalized orthonormal signals; information measures-entropy; channel capacity; efficient encoding; error correcting codes information theory; data compression; coding theory.	

<b>Course Code</b>	ECE142L-1
<b>Course Title</b>	MODULATION AND CODING TECHNIQUES (LABORATORY)
<b>Pre-Requisite</b>	ECE141L-1
<b>Co-Requisite</b>	ECE142-1
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This course covers laboratory activities on random variables, bit error rate; matched filter; Digital modulation techniques; ASK, FSK, QAM, PSK/QPSK, CDMA and W-CDMA systems; signal space; generalized orthonormal signals; information measures-entropy; channel capacity; efficient encoding; error correcting codes information theory; data compression; coding theory.	

<b>Course Code</b>	ECE143-1
<b>Course Title</b>	TRANSMISSION MEDIA AND ANTENNA SYSTEMS AND DESIGN
<b>Pre-Requisite</b>	ECE142-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers transmission media; radiowave propagation wire and cable transmission systems; fiber-optic transmission system; transmission lines and antenna systems.

<b>Course Code</b>	ECE143L-1
<b>Course Title</b>	TRANSMISSION MEDIA AND ANTENNA SYSTEMS AND DESIGN (LABORATORY)
<b>Pre-Requisite</b>	ECE142L-1
<b>Co-Requisite</b>	ECE143-1
<b>Credit units</b>	1.0

**Course Description:**

This course covers laboratory activities on transmission media; radiowave propagation wire and cable transmission systems; fiber-optic transmission system; transmission lines and antenna systems.

<b>Course Code</b>	ECE144-1
<b>Course Title</b>	DATA COMMUNICATIONS
<b>Pre-Requisite</b>	ECE142L-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers data communication systems; terminals, modems; terminal control units; multiplexers; concentrators; front-end processors; common carrier services; data communication system design; computer network models; TCP/IP; principles; LAN; WAN.

<b>Course Code</b>	ECE144L-1
<b>Course Title</b>	DATA COMMUNICATIONS (LABORATORY)
<b>Pre-Requisite</b>	ECE142L-1
<b>Co-Requisite</b>	ECE144-1
<b>Credit units</b>	1.0

**Course Description:**

This course covers laboratory activities on data communication systems; terminals, modems; terminal control units; multiplexers; concentrators; front-end processors; common carrier services; data communication system design; computer network models; TCP/IP; principles; LAN; WAN.

<b>Course Code</b>	ECE146
<b>Course Title</b>	ADVANCE COMMUNICATIONS SYSTEM AND DESIGN
<b>Pre-Requisite</b>	ECE143-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with signal transmission modes; spread spectrum modulation system; terrestrial microwave; satellite systems; satellite multiple access techniques; terrestrial and satellite systems path calculations and link budgets. It also discusses telephony, cellular technology and emerging technologies in wireless engineering.

<b>Course Code</b>	ECE146L
<b>Course Title</b>	ADVANCE COMMUNICATIONS SYSTEM AND DESIGN (LABORATORY)

<b>Pre-Requisite</b>	ECE143L-1
<b>Co-Requisite</b>	ECE146
<b>Credit units</b>	1.0

**Course Description:**

This course deals with laboratory activities on signal transmission modes; spread spectrum modulation system; terrestrial microwave; satellite systems; satellite multiple access techniques; terrestrial and satellite systems path calculations and link budgets. It also discusses telephony, cellular technology and emerging technologies in wireless engineering.

<b>Course Code</b>	ECE163
<b>Course Title</b>	SIGNALS SPECTRA AND SIGNAL PROCESSING
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the Fourier transform; z transform; convolution; FIR filters; IIR filters; random signal analysis; correlation functions; DFT; FFT; spectral analysis; applications of signal processing to speech, image, etc.

<b>Course Code</b>	ECE163L
<b>Course Title</b>	SIGNALS SPECTRA AND SIGNAL PROCESSING (LABORATORY)
<b>Pre-Requisite</b>	MATH116L, ECE121L
<b>Co-Requisite</b>	ECE163
<b>Credit units</b>	3.0

**Course Description:**

This course covers laboratory activities and software applications on Fourier transform; z transform; convolution; FIR filters; IIR filters; random signal analysis; correlation functions; DFT; FFT; spectral analysis; applications of signal processing to speech, image, etc.

<b>Course Code</b>	ECE181
<b>Course Title</b>	ECE LAWS, CODES AND PROFESSIONAL ETHICS
<b>Pre-Requisite</b>	HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with contracts; warranties; liabilities; patents; bids; insurance; other topics on the legal and ethical positions of the professional engineer. It also includes discussion on relevant ECE laws and practices.

<b>Course Code</b>	ECE191F – 1
<b>Course Title</b>	ECE SEMINARS AND COLLOQUIUM (FIELD)
<b>Pre-Requisite</b>	CPE123-1, ECE141-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals with a series of lectures and seminars on selected topics that are highly relevant to electronics engineering but are not covered in any of the other formal courses. It covers recent advances in engineering. It is also a venue for the students to present their projects and researches. electronics

<b>Course Code</b>	ECE198-3
<b>Course Title</b>	ECE CORRELATION 1
<b>Pre-Requisite</b>	MATH800E, ECE801E

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0
<b>Course Description:</b>	
This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.	

<b>Course Code</b>	ECE198-4
<b>Course Title</b>	ECE CORRELATION 2
<b>Pre-Requisite</b>	ECE802E, ECE803E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This course is designed to review the concepts and theories of topics taken up in the professional courses to ensure mastery and retention.	

<b>Course Code</b>	ECE199R – 1
<b>Course Title</b>	ECE PRACTICUM
<b>Pre-Requisite</b>	CPE123-1, ECE143-1, HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
Actual On-the-Job Training or Industry Internship in the field of specialization.	

<b>Course Code</b>	ECE801E
<b>Course Title</b>	ENGINEERING SCIENCES EXIT EXAM
<b>Pre-Requisite</b>	CHM031, PHY035, PHY034, EMGT100
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

<b>Course Description:</b>	
This course serves as an assessment for engineering students in general science courses (chemistry and physics) and general engineering courses (engineering economy, engineering management, engineering mechanics, and environmental science).	

<b>Course Code</b>	ECE802E
<b>Course Title</b>	ELECTRONICS ENGINEERING EXIT EXAM
<b>Pre-Requisite</b>	ECE107-1, EE102-1, ECE130, ECE115, CPE123-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

<b>Course Description:</b>	
This course serves as an assessment for engineering students in electronics courses.	

<b>Course Code</b>	ECE803E
<b>Course Title</b>	ELECTRONICS SYSTEMS AND TECHNOLOGIES EXIT EXAM
<b>Pre-Requisite</b>	ECE143-1, ECE144-1, ECE130, ECE163
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

<b>Course Description:</b>	
This course serves as an assessment for engineering students in communications courses, signals, spectra, signal processing course and control engineering course.	

<b>Course Code</b>	EE099L
<b>Course Title</b>	BASIC ELECTRICITY AND ELECTRONICS WORKSHOP (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This Lab covers all the basic devices that serve as the most basic building block of almost all electronic and electrical devices

<b>Course Code</b>	EE101-2
<b>Course Title</b>	CIRCUITS 1
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course covers nodal and mesh analysis; application of network theorems in circuit analysis; analysis of circuits with controlled sources and ideal op-amps; fundamentals of capacitors and inductors; analysis of dc-driven RL, RC, and RLC circuits; sinusoidal steady-state analysis of general RLC circuits

<b>Course Code</b>	EE101L-2
<b>Course Title</b>	CIRCUITS 1 (LABORATORY)
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	EE101-2
<b>Credit units</b>	1.0

**Course Description:**

This course allows the students to verify the laws and theorems through simulation, experimentation and project construction. The course topics include experimental determination of the characteristics of the different circuit configurations (series, parallel, series/parallel, delta, and wye), electrical power, Ohm's Law, Kirchhoff's Voltage and Current Laws, Superposition Theorem, Thevenin's equivalent circuit, and maximum power transfer. The use of computer software for circuit simulation and design are used as basis in verifying experimental results and to expose students to computer-based tools.

<b>Course Code</b>	EE102 –1
<b>Course Title</b>	CIRCUITS 2
<b>Pre-Requisite</b>	EE101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with sinusoidal steady-state analysis in the frequency domain; AC circuit power analysis; analysis of polyphase circuits and magnetically-coupled circuits; frequency response; per unit system and symmetrical components; and two-port networks

<b>Course Code</b>	EE102L –1
<b>Course Title</b>	CIRCUITS 2 (LABORATORY)
<b>Pre-Requisite</b>	EE101-2
<b>Co-Requisite</b>	EE102-1
<b>Credit units</b>	1.0

**Course Description:**

The course allows students to verify the concepts on sinusoidal steady-state analysis in the frequency domain; AC circuit power analysis; analysis of polyphase circuits and magnetically-coupled circuits; frequency response; per unit system and symmetrical components; and two-port networks through experiments and simulations.

<b>Course Code</b>	EECO102
<b>Course Title</b>	ENGINEERING ECONOMY
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

<b>Course Code</b>	EENV102
<b>Course Title</b>	ENVIRONMENTAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the following: Environmental Science Knowledge in Ecology and Human Population Control, Variety of Resources and Outline Plans for Attaining Sustainable Society, The Enigma of Pollution and the Legal, Technical and Personal Solutions for it and Study of Environmental Impact Assessment and Environmental Crisis.

<b>Course Code</b>	EMGT100
<b>Course Title</b>	ENGINEERING MANAGEMENT
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course will entail students to learn the basic function of a manager applicable in decision making which are applicable to the real world problems. Furthermore, students would learn how to apply planning, leading, organizing and control principles into the resources in order to increase the efficiency.

<b>Course Code</b>	EMGT100L
<b>Course Title</b>	PROJECT MANAGEMENT (LABORATORY)
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course allows students to experience hands-on activities in project management through the use of application software.

<b>Course Code</b>	IE101-1
<b>Course Title</b>	ENGINEERING DATA ANALYSIS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how "chance" plays a role in statistical analysis. Probability distributions of random variables and their uses are also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables

under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

<b>Course Code</b>	MATH031
<b>Course Title</b>	MATHEMATICS FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the pre calculus topics such as Algebra, Geometry, Trigonometry

<b>Course Code</b>	MATH041
<b>Course Title</b>	ENGINEERING CALCULUS 1
<b>Pre-Requisite</b>	MATH031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

An introductory course covering the core concepts of limit, continuity and differentiability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

<b>Course Code</b>	MATH042
<b>Course Title</b>	ENGINEERING CALCULUS 2
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in integral calculus. It then introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

<b>Course Code</b>	MATH056
<b>Course Title</b>	DIFFERENTIAL EQUATIONS
<b>Pre-Requisite</b>	MATH042
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	MATH116
<b>Course Title</b>	ADVANCE ENGINEERIGN MATHEMATICS
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A study of selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering

<b>Course Code</b>	MATH116L
<b>Course Title</b>	ADVANCED ENGINEERING MATHEMATICS (LAB)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	MATH161
<b>Credit units</b>	1.0

**Course Description:**

This course focuses on the laboratory works covered by the topics such as: study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering

<b>Course Code</b>	MATH161
<b>Course Title</b>	NUMERICAL METHODS
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the concepts of numerical analysis and computer software tools in dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.

<b>Course Code</b>	MATH800E
<b>Course Title</b>	ENGINEERING MATHEMATICS EXIT EXAM
<b>Pre-Requisite</b>	IE101-1, MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in mathematics courses, namely: differential calculus, integral calculus, differential equations, and probability and statistics.

<b>Course Code</b>	MSE102
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course introduces the students to a broad study on the structure and composition of materials (metals, polymers, ceramics, and composite materials) and their properties and behavior in service environments.

<b>Course Code</b>	NETA172P-1
<b>Course Title</b>	CCNA ROUTING AND SWITCHING 1(PAIRED)
<b>Pre-Requisite</b>	PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is builds on Network Administration 1 and expounds on basic networks using routers to connect two or more network nodes. It covers the architecture, structure, functions and components of the Internet and other computer networks. Students achieve a basic understanding of how networks operate and how to build simple local area networks (LAN), perform basic configurations for routers and switches, and implement Internet Protocol (IP).

<b>Course Code</b>	PHY034
<b>Course Title</b>	PHYSICS FOR ECE
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with thermodynamics (1<sup>st</sup> & 2<sup>nd</sup> Law, basic concepts on heat engine and refrigerators), Energy Conversion (EM Induction, magnetic flux, generators), and Semiconductor Physics.

<b>Course Code</b>	PHY034L
<b>Course Title</b>	PHYSICS FOR ECE (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY034
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course allows the students to verify the concepts on thermodynamics, basic concepts on heat engine, energy conversion and semiconductor physics.

<b>Course Code</b>	PHY035
<b>Course Title</b>	PHYSICS FOR ENGINEERS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

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

<b>Course Code</b>	PHY035L
<b>Course Title</b>	PHYSICS FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY035
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	RES101
<b>Course Title</b>	METHODS OF RESEARCH
<b>Pre-Requisite</b>	IE101-1, ENG024
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the study of the methodologies used in conducting an engineering research. It includes the types and application of research, characteristics of a good research, research design, research instrument and data gathering procedures. It also deals with the study of writing a research proposal and various formats.

<b>Course Code</b>	SAF102
<b>Course Title</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course tackles key Occupational, Health and Safety (OSH) concepts, principles and practices that are foundational knowledge requirements acceptable in almost all industries. Specifically, it assists learners in identifying the key elements in the OSH situation both here and abroad, determine existing and potential safety health hazards, identify the range of control measures, discuss pertinent provisions of Philippine laws that refer to occupational safety and health, explain key principles in effectively communicating OSH, identify components of effective OSH programs and demonstrate some skills in identifying hazards and corresponding control measures at the workplace

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

<b>Course Code</b>	TEC100-2
<b>Course Title</b>	TECHNOPRENEURSHIP
<b>Pre-Requisite</b>	EMGT100, ACT099
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

## GENERAL EDUCATION COURSES

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM081
<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as

merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

#### **Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	2.0
<b>Course Description:</b>	
This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.	

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal is for the students to understand and appreciate our rich past by deriving insights from those who were actually present at the time of the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels *Noli Me Tangere* and *El Filibusterismo*, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Don'ts among professionals, especially in culturally pluralistic spaces such as Mindanao.

# BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

## CORE COURSES

<b>Course Code</b>	ACT112
<b>Course Title</b>	FINANCIAL ACCOUNTING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	ACT113
<b>Course Title</b>	MANAGERIAL ACCOUNTING
<b>Pre-Requisite</b>	ACT112
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Uses of accounting information for managerial planning and control.

<b>Course Code</b>	CAP200D
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 1 (LABORATORY)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Development of a capstone project proposal containing a clear set of objectives, methodology, project implementation plan/schedule and resource requirements.

<b>Course Code</b>	CAP200D –1
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 2 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>
Implementation of a capstone project based on an approved proposal.

<b>Course Code</b>	CAP200D – 2
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 3 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D - 1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>
Oral presentation and Final Defense

<b>Course Code</b>	CHM031
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Basic concepts of matter and its classification; mass relationships in chemical reactions; properties of gases, liquids, and solids; concepts of thermochemistry; quantum theory and electronic behavior; periodic relationship of elements in the periodic table; intramolecular forces; and solutions.

<b>Course Code</b>	CHM031L
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	CHM031L
<b>Credit units</b>	1.0

**Course Description:**

A fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in the chemistry for engineers.

<b>Course Code</b>	CPE001L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including: identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.

<b>Course Code</b>	CPE002L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 2 (LAB)
<b>Pre-Requisite</b>	CPE001L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course is a continuation of the first course CPE001L. It covers fundamentals of algorithm development; high-level language and programming applications; computer solutions of engineering problems.

<b>Course Code</b>	CPE126
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Class Schedule</b>	

**Course Description:**

This course provides an introductory overview of Artificial Intelligence (AI) with a focus on its applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	CPE126L
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE (LABORATORY)
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	CPE126
<b>Credit units</b>	1.0

**Course Description:**

This course provides a hands-on laboratory experience with various machine learning and artificial intelligence models with a focus on their applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	DRAW021W
<b>Course Title</b>	ENGINEERING DRAWING 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings.

<b>Course Code</b>	DRAW023L-1
<b>Course Title</b>	COMPUTER AIDED DRAFTING (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	DS100L
<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.

<b>Course Code</b>	ECE121L
<b>Course Title</b>	COMPUTER AIDED CALCULATIONS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course utilizes the capability of technology in facilitating the understanding of basic mathematical principles and operations. The MATLAB software will be used to perform algebraic operations, differentiations, integration, matrix operations, graphics manipulation and some basic MATLAB

programming. This course also presents software as a tool for gathering quick results from mathematical simulations and analysis.

<b>Course Code</b>	ECO103
<b>Course Title</b>	PRINCIPLES OF ECONOMICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	Introduction to economic theory and applications.

<b>Course Code</b>	EE104-2
<b>Course Title</b>	BASIC ELECTRICAL ENGINEERING FOR IE
<b>Pre-Requisite</b>	PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	Principles, basic laws and theorems used in analyzing electrical circuits in both direct current and alternating current conditions.

<b>Course Code</b>	EECO102
<b>Course Title</b>	ENGINEERING ECONOMY
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

<b>Course Code</b>	EENV102
<b>Course Title</b>	ENVIRONMENTAL SCIENCES AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	Ecological framework of sustainable development; pollution environments: water, air, and solid; waste treatment processes, disposal, and management; government legislation, rules, and regulation related to the environment and waste management; and environmental management system.

<b>Course Code</b>	EMGT100L
<b>Course Title</b>	PROJECT MANAGEMENT (LABORATORY)
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0
<b>Course Description:</b>	This course allows students to experience hands-on activities in project management through the use of application software.

<b>Course Code</b>	EMGT103 – 1
<b>Course Title</b>	INDUSTRIAL ORGANIZATION AND MANAGEMENT

<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	IE100
<b>Course Title</b>	INDUSTRIAL ENGINEERING ORIENTATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course discusses the curriculum for Industrial Engineering as well as how to prepare students for success through engineering design process, ethical decision-making, teamwork, and communicating to diverse audiences.

<b>Course Code</b>	IE101-1
<b>Course Title</b>	ENGINEERING DATA ANALYSIS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how "chance" plays a role in statistical analysis. Probability distributions of random variables and their uses are also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

<b>Course Code</b>	IE102
<b>Course Title</b>	ADVANCE STATISTICAL ANALYSIS FOR INDUSTRIAL ENGINEERING
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	IE105 –1
<b>Course Title</b>	QUALITY MANAGEMENT SYSTEMS
<b>Pre-Requisite</b>	IE102, IE112-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Principles and practices of quality management systems (QMS); tools and techniques utilized in QMS.

<b>Course Code</b>	IE111 – 1
<b>Course Title</b>	INDUSTRIAL MATERIALS AND PROCESSES
<b>Pre-Requisite</b>	CHM031, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

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

<b>Course Code</b>	IE111L – 1
<b>Course Title</b>	INDUSTRIAL MATERIALS AND PROCESSES (LABORATORY)
<b>Pre-Requisite</b>	CHM031L, PHY035L
<b>Co-Requisite</b>	IE111-1
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany IE111-1.

<b>Course Code</b>	IE112 – 1
<b>Course Title</b>	WORK STUDY AND MEASUREMENT
<b>Pre-Requisite</b>	IE101-1, IE111-1, EMGT103-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	IE112L –1
<b>Course Title</b>	WORK STUDY AND MEASUREMENT (LABORATORY)
<b>Pre-Requisite</b>	IE101-1, IE111-1, EMGT103-1
<b>Co-Requisite</b>	IE112-1
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany IE112-1.

<b>Course Code</b>	IE113 –1
<b>Course Title</b>	ERGONOMICS 1
<b>Pre-Requisite</b>	IE112-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Scope and focus of ergonomics. Visual Sense. Auditory sense. Vestibular sense. Anthropometry. Biomechanics. Musculoskeletal disorders. Manual material handling. Workstation design

<b>Course Code</b>	IE113L –1
<b>Course Title</b>	ERGONOMICS 1 (LABORATORY)
<b>Pre-Requisite</b>	IE112L-1
<b>Co-Requisite</b>	IE113-1
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany IE113-1.

<b>Course Code</b>	IE114 –1
<b>Course Title</b>	ERGONOMICS 2
<b>Pre-Requisite</b>	IE113 - 1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Course Description:</b>	Signal detection theory, vigilance, information processing, learning, memory, mental workload, visual and auditory displays. Usability engineering. Relation of cognitive limitations to the design of effective products and interfaces.

<b>Course Code</b>	IE114L –1
<b>Course Title</b>	ERGONOMICS 2 (LABORATORY)
<b>Pre-Requisite</b>	IE114 –1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0
<b>Course Description:</b>	A laboratory course to accompany IE114-1.

<b>Course Code</b>	IE121 – 1
<b>Course Title</b>	OPERATIONS RESEARCH 1
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	Development and application of fundamental deterministic optimization models and various solution methods. Quantitative modeling, formulation, analysis and interpretation of linear integer and non-integer models and network flow problems.

<b>Course Code</b>	IE122 – 1
<b>Course Title</b>	OPERATIONS RESEARCH 2
<b>Pre-Requisite</b>	IE121-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	Concept and solution approaches of advanced optimization models and their application to engineering. Goal programming, dynamic programming, decision theory, game theory, Markov models and queuing theory.

<b>Course Code</b>	IE131–1C
<b>Course Title</b>	OPERATIONS MANAGEMENT (COMPUTATIONAL)
<b>Pre-Requisite</b>	IE105-1, IE121-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	Production control, inventory policy, facilities planning, methods improvement. Technological assessment and revenue management.

<b>Course Code</b>	IE132 - 1
<b>Course Title</b>	FACILITIES PLANNING AND DESIGN PRINCIPLES
<b>Pre-Requisite</b>	IE131-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

An introduction to facility design, product and equipment analysis, process and material flow analysis, traditional approaches to facility layout, models and layout problems, algorithm for the layout problem, material handling storage and warehousing and models for the location problems.

<b>Course Code</b>	IE133 –1
<b>Course Title</b>	SUPPLY CHAIN MANAGEMENT
<b>Pre-Requisite</b>	IE131-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	IE141 – 1
<b>Course Title</b>	SYSTEMS SIMULATION
<b>Pre-Requisite</b>	IE122-1, IE132-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

A course on representation and simulation of system and other operation research applications. Includes random number generation, record processing and generation of statistics.

<b>Course Code</b>	IE141L – 1
<b>Course Title</b>	SYSTEMS SIMULATION (LABORATORY)
<b>Pre-Requisite</b>	IE122-1, IE132-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The promodel software will be used to help improve the sign and opeartion of the manufacturing systems.

<b>Course Code</b>	IE151 –1
<b>Course Title</b>	PROJECT FEASIBILITY
<b>Pre-Requisite</b>	ACT113, IE131-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

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

<b>Course Code</b>	IE151F – 1
<b>Course Title</b>	PROJECT FEASIBILITY (FIELD)
<b>Pre-Requisite</b>	IE151-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	IE152 – 1
<b>Course Title</b>	SYSTEMS ENGINEERING
<b>Pre-Requisite</b>	IE131-1

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Total systems analysis and design. Integration of subsystems with concentration on optimal total systems implementation.	

<b>Course Code</b>	IE191F – 1
<b>Course Title</b>	IE SEMINARS AND PLANT VISITS (FIELD)
<b>Pre-Requisite</b>	IE131-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This course deals with a series of lectures and seminars on selected topics that are highly relevant to electronics engineering but are not covered in any of the other formal courses. It covers recent advances in engineering. It is also a venue for the students to present their projects and researches.	

<b>Course Code</b>	IE198-3
<b>Course Title</b>	IE CORRELATION 1
<b>Pre-Requisite</b>	MATH800E, E801E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.	

<b>Course Code</b>	IE198-4
<b>Course Title</b>	IE CORRELATION 2
<b>Pre-Requisite</b>	IE132-1, IE152-1, IE802E, IE803E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This course is design to review the concepts and theories of topics taken up in the initial professional course cluster to ensure mastery and retention.	

<b>Course Code</b>	IE199R – 1
<b>Course Title</b>	IE PRACTICUM
<b>Pre-Requisite</b>	IE112-1, HUM039, IE133-1, IE132-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
Actual On-the-Job Training or Industry Internship in the field of specialization.	

<b>Course Code</b>	IE801E
<b>Course Title</b>	ENGINEERING SCIENCES EXIT EXAM
<b>Pre-Requisite</b>	CHM031, PHY035, EMGT103-1, EENV102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

<b>Course Description:</b>	

This course serves as an assessment for engineering students in general science courses (chemistry and physics) and general engineering courses (engineering economy, engineering management, engineering mechanics, and environmental science).

<b>Course Code</b>	IE802E
<b>Course Title</b>	INDUSTRIAL ENGINEERING 1 EXIT EXAM
<b>Pre-Requisite</b>	IE112-1, IE113-1, EECO102, IE102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in select professional courses.

<b>Course Code</b>	IE803E
<b>Course Title</b>	INDUSTRIAL ENGINEERING 2 EXIT EXAM
<b>Pre-Requisite</b>	IE114-1, IE121-1, IE122-1, IE131-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in select professional courses.

<b>Course Code</b>	IT120
<b>Course Title</b>	INFORMATION SYSTEMS
<b>Pre-Requisite</b>	CPE002L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the concepts and frameworks of information systems. Analysis and design of information systems.

<b>Course Code</b>	MATH031
<b>Course Title</b>	MATHEMATICS FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the pre calculus topics such as Algebra, Geometry, Trigonometry

<b>Course Code</b>	MATH041
<b>Course Title</b>	ENGINEERING CALCULUS 1
<b>Pre-Requisite</b>	MATH031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in differential calculus. It essentially covers core concepts of limit, continuity and differentiability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

<b>Course Code</b>	MATH042
<b>Course Title</b>	ENGINEERING CALCULUS 2
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This covers pre-calculus topics necessary in integral calculus. It then introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.

<b>Course Code</b>	MATH116
<b>Course Title</b>	ADVANCE ENGINEERING MATHEMATICS
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A study of selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering

<b>Course Code</b>	MATH161
<b>Course Title</b>	NUMERICAL METHODS
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the concepts of numerical analysis and computer software tools in dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.

<b>Course Code</b>	MATH161L
<b>Course Title</b>	NUMERICAL METHODS (LABORATORY)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	MATH161
<b>Credit units</b>	1.0

**Course Description:**

The course provides background on numerical analysis needed to solve engineering problems numerically when their analytical solution is either not available or difficult to obtain. MATLAB programming environment or its equivalent will be introduced and used in the course.

<b>Course Code</b>	MATH800E
<b>Course Title</b>	ENGINEERING MATHEMATICS EXIT EXAM
<b>Pre-Requisite</b>	IE101-1, MATH116

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0
<b>Course Description:</b>	
This course serves as an assessment for engineering students in mathematics courses, namely: differential calculus, integral calculus, differential equations, and probability and statistics.	

<b>Course Code</b>	ME111 - 1
<b>Course Title</b>	THERMODYNAMICS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Thermodynamic properties of pure substances, ideal and real gases and the study and application of the laws of thermodynamics in the analysis of processes and cycles. Introduction to vapor and gas cycles.	

<b>Course Code</b>	MEC100-1
<b>Course Title</b>	ENGINEERING MECHANICS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Force, moment, and motion concepts. Newton's Laws of Motion. Analysis of particles and rigid bodies in static and dynamic equilibrium using vector mechanics and energy and momentum methods. Geometric properties of lines, areas, and volumes.	

<b>Course Code</b>	PHY035
<b>Course Title</b>	PHYSICS FOR ENGINEERS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0
<b>Course Description:</b>	
This course covers vectors; kinematics; dynamics; work, energy, and power; impulse and momentum; rotation; dynamics of rotation; elasticity; and oscillation. Fluids; thermal expansion, thermal stress; heat transfer; calorimetry; waves; electrostatics; electricity; magnetism; optics; image formation by plane and curved mirrors; and image formation by thin lenses.	

<b>Course Code</b>	PHY035L
<b>Course Title</b>	PHYSICS FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY035
<b>Credit units</b>	1.0
<b>Course Description:</b>	
A fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in the physics for engineers.	

<b>Course Code</b>	RES101
<b>Course Title</b>	METHODS OF RESEARCH
<b>Pre-Requisite</b>	IE101-1, ENG024
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the study of the methodologies used in conducting an engineering research. It includes the types and application of research, characteristics of a good research, research design, research instrument and data gathering procedures. It also deals with the study of writing a research proposal and various formats.

<b>Course Code</b>	SAF102
<b>Course Title</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course tackles key Occupational, Health and Safety (OSH) concepts, principles and practices that are foundational knowledge requirements acceptable in almost all industries. Specifically, it assists learners in identifying the key elements in the OSH situation both here and abroad, determine existing and potential safety health hazards, identify the range of control measures, discuss pertinent provisions of Philippine laws that refer to occupational safety and health, explain key principles in effectively communicating OSH, identify components of effective OSH programs and demonstrate some skills in identifying hazards and corresponding control measures at the workplace

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

<b>Course Code</b>	TEC100-1
<b>Course Title</b>	TECHNOPRENEURSHIP FOR IE
<b>Pre-Requisite</b>	EMGT103-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

**GENERAL EDUCATION COURSES**

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	
Art Appreciation is a three-unit course that develops the students' ability to appreciate, analyze, and critique works of art. Through interdisciplinary and multimodal approaches, this course equips students with a broad, practical, historical, philosophical, and social relevance of arts in order to hone students' ability to articulate their understanding of the arts. The course also develops students' competency in researching and curating art as well as conceptualizing, mounting, and evaluating art productions. The course aims to develop students' genuine appreciation for Philippine arts by providing them opportunities to explore the diversity and richness and their rootedness in Filipino culture that is Mindanao-centric.	

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
Ethics deals with the principles of ethical behavior in modern society at the level of the person, society, and in interactions with the environment and other shared resources. Morality pertains to the standards of right and wrong that an individual originally picks up from the community.
The course discusses the context and principles of ethical behavior in modern society at the level of individual, society, and interaction with the environment.

<b>Course Code</b>	HUM081
<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>
This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal unable the students understand and appreciate our rich past by deriving insights from those who were actually present at the time of

the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels Noli Me Tangere and El Filibusterismo, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY

<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Don'ts among professionals, especially in culturally pluralistic spaces such as Mindanao.

# BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

## CORE COURSES

<b>Course Code</b>	ACT099
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course seeks to enable participants with little to no accounting background to explain and apply the principles, basic tools, and techniques of the accounting process.

<b>Course Code</b>	CAP200D
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 1 (LABORATORY)
<b>Pre-Requisite</b>	RES101
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Development of a capstone project proposal containing a clear set of objectives, methodology, project implementation plan/schedule and resource requirements.

<b>Course Code</b>	CAP200D – 1
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 2 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Implementation of a capstone project based on an approved proposal.

<b>Course Code</b>	CAP200D – 2
<b>Course Title</b>	CAPSTONE DESIGN / THESIS 3 (LABORATORY)
<b>Pre-Requisite</b>	CAP200D-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Oral presentation and Final Defense

<b>Course Code</b>	CE104-1
<b>Course Title</b>	MECHANICS OF DEFORMABLE BODIES FOR ME
<b>Pre-Requisite</b>	MEC102-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Oral presentation and Final Defense

<b>Course Code</b>	CE120
<b>Course Title</b>	FLUID MECHANICS FOR ME
<b>Pre-Requisite</b>	ME111-1
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	3.0
<b>Course Description:</b>	
The course deals with the nature and physical properties of fluids as well as the identification and measurement of fluid properties. It emphasizes the application of conservation laws on mass, energy and momentum to fluid systems either incompressible or compressible flow, inviscid or viscous flow as well as head loss calculation on pipes and fittings.	

<b>Course Code</b>	CHM031
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
Basic concepts of matter and its classification; mass relationships in chemical reactions; properties of gases, liquids, and solids; concepts of thermochemistry; quantum theory and electronic behavior; periodic relationship of elements in the periodic table; intramolecular forces; and solutions.	

<b>Course Code</b>	CHM031L
<b>Course Title</b>	CHEMISTRY FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	CHM031L
<b>Credit units</b>	1.0

<b>Course Description:</b>	
A fundamental laboratory course designed to provide opportunity to observe and apply the principles and theories taught in the chemistry for engineers.	

<b>Course Code</b>	CPE001L
<b>Course Title</b>	COMPUTER FUNDAMENTALS AND PROGRAMMING 1 (LAB)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This is an introductory course in computer programming logic. The student will learn algorithms applicable to all programming languages, including: identifiers, data types, arrays, control structures, modular programming, generating reports, and computer memory concepts. The student will learn to use charts commonly used in business and information processing. Program logic will be developed using flowcharts and pseudo code. Programs will be written using any programming language.	

<b>Course Code</b>	CPE126
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE
<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0
<b>Class Schedule</b>	

<b>Course Description:</b>	
This course provides an introductory overview of Artificial Intelligence (AI) with a focus on its applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.	

<b>Course Code</b>	CPE126L
<b>Course Title</b>	ARTIFICIAL INTELLIGENCE (LABORATORY)

<b>Pre-Requisite</b>	DS100L
<b>Co-Requisite</b>	CPE126
<b>Credit units</b>	1.0

**Course Description:**

This course provides a hands-on laboratory experience with various machine learning and artificial intelligence models with a focus on their applications and relevance to engineering disciplines. The course is designed to be accessible to students from all engineering programs, requiring no prior background in AI. Through theoretical concepts, practical examples, and hands-on exercises, students will gain a foundational understanding of AI techniques and their implementation in engineering contexts.

<b>Course Code</b>	DRAW021W
<b>Course Title</b>	ENGINEERING DRAWING 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the practices and techniques of graphical communication; application of drafting instruments, lettering scale, and units of measure; descriptive geometry; orthographic projections; auxiliary views; dimensioning; sectional views; pictorial drawings; requirements of engineering working drawings; and assembly and exploded detailed drawings.

<b>Course Code</b>	DRAW023L-1
<b>Course Title</b>	COMPUTER AIDED DRAFTING (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	DS100L
<b>Course Title</b>	APPLIED DATA SCIENCE LABORATORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course covers the fundamental concepts of data analytics, the various search methods and visualization techniques, and the various machine learning techniques for data analysis.

<b>Course Code</b>	ECE104-1
<b>Course Title</b>	BASIC ELECTRONICS
<b>Pre-Requisite</b>	EE104-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course discusses the construction, operation and characteristics of basic electronics devices such as PN junction diode, light emitting diode, Zener diode, Bipolar Junction Transistor and Field Effect Transistor. Diode circuit applications such as clipper, clamper and switching diode circuits will be a part of the lecture. Operation of a DC regulated power supply as well as analysis of BJT and FET amplifier circuit will be tackled. This course also discusses the operation and characteristics of operational amplifiers

<b>Course Code</b>	ECE104L-1
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<b>Course Title</b>	BASIC ELECTRONICS (LABORATORY)
<b>Pre-Requisite</b>	EE104L-3
<b>Co-Requisite</b>	ECE104-1
<b>Credit units</b>	1.0

**Course Description:**

This course covers simulations and laboratory activities on the basic electronics devices such as PN junction diode, light emitting diode, Zener diode, Bipolar Junction Transistor and Field Effect Transistor. Diode circuit applications such as clipper, clamper and switching diode circuits will be a part of the lecture. Operation of a DC regulated power supply as well as analysis of BJT and FET amplifier circuit will be tackled. This course also discusses the operation and characteristics of operational amplifiers

<b>Course Code</b>	ECE121L
<b>Course Title</b>	COMPUTER AIDED CALCULATIONS (LABORATORY)
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course utilizes the capability of technology in facilitating the understanding of basic mathematical principles and operations. The MATLAB software will be used to perform algebraic operations, differentiations, integration, matrix operations, graphics manipulation and some basic MATLAB programming. This course also presents software as a tool for gathering quick results from mathematical simulations and analysis.

<b>Course Code</b>	ECE135-1
<b>Course Title</b>	CONTROL ENGINEERING
<b>Pre-Requisite</b>	ECE104-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

Introduction to linear control systems. Modeling of physical systems. Feedback control systems. Time- and frequency domain analysis of control systems. Stability of control systems. Applications.

<b>Course Code</b>	ECE135L-1
<b>Course Title</b>	CONTROL ENGINEERING (LABORATORY)
<b>Pre-Requisite</b>	ECE104L-1
<b>Co-Requisite</b>	ECE135-1
<b>Credit units</b>	1.0

**Course Description:**

Simulations and laboratory activities on Introduction to linear control systems. Modeling of physical systems. Feedback control systems. Time- and frequency domain analysis of control systems. Stability of control systems. Applications.

<b>Course Code</b>	EE104-3
<b>Course Title</b>	BASIC ELECTRICAL ENGINEERING FOR ME
<b>Pre-Requisite</b>	PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course covers the fundamentals of both DC and AC circuits intended for non EE major students. It covers the principles, basic laws and theorems used in analyzing electrical circuits in both direct current and alternating current conditions.

<b>Course Code</b>	EE104-3
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<b>Course Title</b>	BASIC ELECTRICAL ENGINEERING FOR ME (LABORATORY)
<b>Pre-Requisite</b>	PHY035L
<b>Co-Requisite</b>	EE104-3
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany EE104-3.

<b>Course Code</b>	EE108-1
<b>Course Title</b>	DC/AC MACHINERY
<b>Pre-Requisite</b>	EE104-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with performance characteristics and operation including losses and efficiencies of DC and AC machines such as alternators, induction/synchronous motors, synchronous converters and transformers. It includes demonstrations and laboratory experiments.

<b>Course Code</b>	EE108L-1
<b>Course Title</b>	DC/AC MACHINERY
<b>Pre-Requisite</b>	EE104L-3
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

A laboratory course to accompany EE108-1

<b>Course Code</b>	EECO102
<b>Course Title</b>	ENGINEERING ECONOMY
<b>Pre-Requisite</b>	IE101-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course involves the analysis and evaluation of factors for the economic success of engineering projects to ensure the best of capital.

<b>Course Code</b>	EENV102
<b>Course Title</b>	ENVIRONMENTAL SCIENCES AND ENGINEERING
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	EMGT100
<b>Course Title</b>	ENGINEERING MANAGEMENT
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course will entail students to learn the basic function of a manager applicable in decision making which are applicable to the real world problems. Furthermore, students would learn how to apply planning, leading, organizing and control principles into the resources in order to increase the efficiency.

<b>Course Code</b>	EMGT100L
<b>Course Title</b>	PROJECT MANAGEMENT (LABORATORY)
<b>Pre-Requisite</b>	EECO102
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course allows students to experience hands-on activities in project management through the use of application software.

<b>Course Code</b>	IE101-1
<b>Course Title</b>	ENGINEERING DATA ANALYSIS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is designed for undergraduate engineering students with emphasis on problem solving related to societal issues that engineers and scientists are called upon to solve. It introduces different methods of data collection and the suitability of using a particular method for a given situation. The relationship of probability to statistics is also discussed, providing students with the tools they need to understand how "chance" plays a role in statistical analysis. Probability distributions of random variables and their uses are also considered, along with a discussion of linear functions of random variables within the context of their application to data analysis and inference. The course also includes estimation techniques for unknown parameters; and hypothesis testing used in making inferences from sample to population; inference for regression parameters and build models for estimating means and predicting future values of key variables under study. Finally, statistically based experimental design techniques and analysis of outcomes of experiments are discussed with the aid of statistical software.

<b>Course Code</b>	MATH031
<b>Course Title</b>	MATHEMATICS FOR ENGINEERS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course covers the pre calculus topics such as Algebra, Geometry, Trigonometry

<b>Course Code</b>	MATH041
<b>Course Title</b>	ENGINEERING CALCULUS 1
<b>Pre-Requisite</b>	MATH031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

An introductory course covering the core concepts of limit, continuity and differentialability of functions involving one or more variables. This also includes the application of differential calculations in solving problems on optimization, rates of change, related rates, tangents and normals, and approximations; partial differentiation and transcendental curve tracing.

<b>Course Code</b>	MATH042
<b>Course Title</b>	ENGINEERING CALCULUS 2
<b>Pre-Requisite</b>	MATH041

<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0
<b>Course Description:</b>	
This covers pre-calculus topics necessary in integral calculus then introduces the concept of integration and its application to some physical problems such as evaluation of areas, volumes of revolution, force, and work. The fundamental formulas and various techniques of integration are taken up and applied to both single variable and multi-variable functions. The course also includes tracing of functions of two variables for a better appreciation of the interpretation of the double and triple integral as volume of a three-dimensional region bounded by two or more surfaces.	

<b>Course Code</b>	MATH056
<b>Course Title</b>	DIFFERENTIAL EQUATIONS
<b>Pre-Requisite</b>	MATH042
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

<b>Course Code</b>	MATH116
<b>Course Title</b>	ADVANCE ENGINEERING MATHEMATICS
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

<b>Course Description:</b>	
A study of selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering	

<b>Course Code</b>	MATH116L
<b>Course Title</b>	ADVANCED ENGINEERING MATHEMATICS (LAB)
<b>Pre-Requisite</b>	MATH116, ECE121L
<b>Co-Requisite</b>	MATH161
<b>Credit units</b>	1.0

<b>Course Description:</b>	
This course focuses on the laboratory works covered by the topics such as: study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms, power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering	

<b>Course Code</b>	MATH161
<b>Course Title</b>	NUMERICAL METHODS
<b>Pre-Requisite</b>	MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0
<b>Course Description:</b>	

This course covers the concepts of numerical analysis and computer software tools in dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.

<b>Course Code</b>	MATH800E
<b>Course Title</b>	ENGINEERING MATHEMATICS EXIT EXAM
<b>Pre-Requisite</b>	IE101-1, MATH116
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in mathematics courses, namely: differential calculus, integral calculus, differential equations, and probability and statistics.

<b>Course Code</b>	ME100
<b>Course Title</b>	ORIENTATION TO MECHANICAL ENGINEERING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course discusses the curriculum for Industrial Engineering as well as how to prepare students for success through engineering design process, ethical decision-making, teamwork, and communicating to diverse audiences.

<b>Course Code</b>	ME101L
<b>Course Title</b>	WORKSHOP THEORY AND PRACTICE (LABORATORY)
<b>Pre-Requisite</b>	DRAW021W
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with the basic principles of machine shop practices. It includes workshop safety and organization; simple workshop measuring instruments, hand tools, fitting bench work, bench drill and bench grinder; sheet metal working; principles of welding processes; welding metallurgy; joining processes; testing and inspection of welds; foundry and metal casting.

<b>Course Code</b>	ME102L
<b>Course Title</b>	MACHINE SHOP THEORY AND PRACTICE 1 (LABORATORY)
<b>Pre-Requisite</b>	ME101L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with use and operation of machines such as lathes, shapers, planers, drilling and boring machines, milling machine, cutters, grinding machines, machine tools and accessories. It covers technological advances in metal working and new innovations in machine shop.

<b>Course Code</b>	ME103L
<b>Course Title</b>	MACHINE SHOP THEORY AND PRACTICE 2 (LABORATORY)
<b>Pre-Requisite</b>	ME102L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course includes the maintenance of marine system such as center lathe, chocks, centers and face plates, material removal, thread cutting, taper turning, shaping machine and cutting tools.

<b>Course Code</b>	ME111 - 1
<b>Course Title</b>	THERMODYNAMICS
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	ME112 - 1
<b>Course Title</b>	THERMODYNAMICS 2
<b>Pre-Requisite</b>	ME111-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is aimed to further enhance the student's' knowledge A course dealing with the thermodynamic properties of pure substances, ideal and real gases and the study and application of the laws of thermodynamics in the analysis of processes and cycles. It includes introduction to vapor and gas cycles.

<b>Course Code</b>	ME113 - 1
<b>Course Title</b>	HEAT TRANSFER
<b>Pre-Requisite</b>	ME112-1, MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with the different modes of heat and mass transfer; laws governing conduction, convection and radiation and its application to the design of common heat exchangers such as condenser. Cooling coils and evaporators; and the environmental impact of their operation.

<b>Course Code</b>	ME114 - 1
<b>Course Title</b>	COMBUSTION ENGINEERING
<b>Pre-Requisite</b>	ME112-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with principles involved in combustion, carburetion and fuel injection; fundamentals and basic principles of combustion processes, compression and combustion charts, fuels, (manifolds) engine components, engine performance and combustion engine design.

<b>Course Code</b>	ME115 - 1
<b>Course Title</b>	REFRIGERATION SYSTEMS
<b>Pre-Requisite</b>	ME113-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course is designed to provide a thorough foundation of the thermodynamic principles and components of mechanical refrigeration systems; cycles and associated equipment, and the effect of their operation on the environment.

<b>Course Code</b>	ME116 - 1
<b>Course Title</b>	AIR-CONDITIONING AND VENTILATION SYSTEMS
<b>Pre-Requisite</b>	ME115-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with the psychrometric properties of air; factors affecting human comfort; air distribution and basic duct design; drying, heating and ventilation; cooling load calculations; and, design of an air-conditioning system and its components.

<b>Course Code</b>	ME117P – 1
<b>Course Title</b>	INDUSTRIAL PLANT ENGINEERING (PAIRED)
<b>Pre-Requisite</b>	ME116-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

A study of mechanical engineering theories, equipment and systems that are needed in the operation of an industrial/manufacturing plant.

<b>Course Code</b>	ME130L – 1
<b>Course Title</b>	COMPUTER APPLICATIONS FOR MECHANICAL ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	CPE001L
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

This course deals exposes the student to computational and simulation to software relevant to mechanical engineering practice for engineering design, calculations and simulations.

<b>Course Code</b>	ME124P-1
<b>Course Title</b>	MACHINE ELEMENTS (PAIRED)
<b>Pre-Requisite</b>	MEC102-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with the study of mechanisms disregarding the forces and energies that causes the motion. It provides emphasis on the analytical and graphical study of displacement, velocity and acceleration. This also includes the study of the elements of mechanisms such as gears, train, rolling bodies, belt and pulleys, cams and followers.

<b>Course Code</b>	ME131 – 1
<b>Course Title</b>	MACHINE DESIGN 1
<b>Pre-Requisite</b>	ME124P-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with various mechanical properties of engineering materials in lieu of the determination of design factor and design stresses. It includes the analyses of simple, variable and combined stresses applied to different mechanical elements such as shafts, mechanical springs.

<b>Course Code</b>	ME132P – 1
<b>Course Title</b>	MACHINE DESIGN 2 (PAIRED)
<b>Pre-Requisite</b>	ME131-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

This course is a continuation of machine design 1 which involves the analysis of simple, variable and combined stresses applied to the different machine elements flywheels, brakes and clutches, bearings, flexible power transmissions such as belts, wire ropes and chains. It also includes analysis and synthesis of machineries which consist of two or more machine elements preferably using an application software.

<b>Course Code</b>	ME141L –1
<b>Course Title</b>	MACHINE ENGINEERING 1 (LABORATORY)
<b>Pre-Requisite</b>	ME112-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course involves the study and use of devices and instruments to measure pressure, temperature level, flow, speed, weight, area, volume, viscosity, steam quality, and products of combustion. It also includes the study and analysis of fuels and lubricants.

<b>Course Code</b>	ME142L –1
<b>Course Title</b>	MACHINE ENGINEERING 2 (LABORATORY)
<b>Pre-Requisite</b>	ME141L-1, ME151-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the performance analysis and evaluation of refrigeration, air-conditioning and ventilation systems and power plants.

<b>Course Code</b>	ME143L –1
<b>Course Title</b>	MACHINE ENGINEERING 3 (LABORATORY)
<b>Pre-Requisite</b>	ME142L-1, ME162P
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course deals with the performance analysis and evaluation of refrigeration, air-conditioning and ventilation systems and power plants.

<b>Course Code</b>	ME151-1
<b>Course Title</b>	FLUID MACHINERIES
<b>Pre-Requisite</b>	CE120
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course is a comprehensive study of the principles and theories in the proper operation, selection and application of the most commonly used fluid machineries such as pumps, fans, blowers, compressors and turbines.

<b>Course Code</b>	ME162
<b>Course Title</b>	POWER PLANT DESIGN WITH RENEWABLE ENERGY
<b>Pre-Requisite</b>	ME114-1, ME151-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with the study of the fundamental concepts in the design and installation of typical power plants such as steam power plant, diesel electric plant, geothermal power plant as well as other generating plants. It includes the discussion of renewable energies such as solar, wind, tidal, hydro-electric, bio-mass, OTEC and others.

<b>Course Code</b>	ME162L
<b>Course Title</b>	POWER PLANT DESIGN WITH RENEWABLE ENERGY (LABORATORY)
<b>Pre-Requisite</b>	ME114-1, ME151-1
<b>Co-Requisite</b>	ME162
<b>Credit units</b>	1.0

**Course Description:**

The covers laboratory activities that deals with the fundamental concepts in the design and installation of typical power plants such as steam power plant, diesel electric plant, geothermal power plant as well as other generating plants. It includes the discussion of renewable energies such as solar, wind, tidal, hydro-electric, bio-mass, OTEC and others.

<b>Course Code</b>	ME172
<b>Course Title</b>	VIBRATION ENGINEERING
<b>Pre-Requisite</b>	MATH056
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course deals with the fundamental concepts of vibration as it affects operation and performance of machine components. It involves modeling of mechanical systems, derivation of the differential equations for such systems and its varying solutions (responses) based on different excitations. Emphases will be on analysis, design, measurement, damping and computational aspects.

<b>Course Code</b>	ME181
<b>Course Title</b>	ME LAWS, CONTRACTS AND ETHICS
<b>Pre-Requisite</b>	HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course deals with the study of the Mechanical Engineering law, contracts, code of ethics and ethical issues in the practice of engineering. Familiarization with the technical codes and standards are included.

<b>Course Code</b>	ME191P
<b>Course Title</b>	MANUFACTURING & INDUSTRIAL PROCESSES WITH PLANT VISITS (PAIRED)
<b>Pre-Requisite</b>	MSE102-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

A course dealing with the study of industrial and manufacturing processes and the equipment involved in the processes. This includes plant visit to various manufacturing and power plants.

<b>Course Code</b>	ME198-3
<b>Course Title</b>	ME CORRELATION 1
<b>Pre-Requisite</b>	MATH800E, CHE801E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1

**Course Description:**

This course is designed to review the concepts and theories of topics mathematics, general engineering, and applied sciences to ensure mastery and retention.

<b>Course Code</b>	ME198-2
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<b>Course Title</b>	ME CORRELATION 2
<b>Pre-Requisite</b>	ECE135-1, ME132P-1, ME802E, ME803E
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1

**Course Description:**

This course is designed to review the concepts and theories of topics taken up in the professional courses to ensure mastery and retention.

<b>Course Code</b>	ME199R-1
<b>Course Title</b>	ME PRACTICUM
<b>Pre-Requisite</b>	ME112-1, ME102L, HUM039
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Actual On-the-Job Training or Industry Internship in the field of specialization.

<b>Course Code</b>	ME801E
<b>Course Title</b>	ENGINEERING SCIENCES EXIT EXAM
<b>Pre-Requisite</b>	CHM031, PHY035, EECO102, MEC101-2, MEC102-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in general science courses (chemistry and physics) and general engineering courses (engineering economy, engineering management, engineering mechanics, and environmental science).

<b>Course Code</b>	ME802E
<b>Course Title</b>	MECHANICAL ENGINEERING 1 EXIT EXAM
<b>Pre-Requisite</b>	ME124P-1, ME111-1, ME112-1, ME101L, CE120
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in select professional courses.

<b>Course Code</b>	ME803E
<b>Course Title</b>	MECHANICAL ENGINEERING 3 EXIT EXAM
<b>Pre-Requisite</b>	ME162P, ME116-1, ME131-1, ME151-1
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

This course serves as an assessment for engineering students in select professional courses.

<b>Course Code</b>	MEC101-2
<b>Course Title</b>	STATICS OF RIGID BODIES
<b>Pre-Requisite</b>	MATH042, PHY035
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

A basic engineering science course of solid mechanics dealing with bodies that are or remain at rest. It is designed to provide fundamental concepts about forces, moments and couples and their systems. The

concept of resultants and equilibrium of forces and moments is utilized to enable solution of statically determinate problems.

<b>Course Code</b>	MEC102-1
<b>Course Title</b>	DYNAMICS OF RIGID BODIES
<b>Pre-Requisite</b>	MEC101-2
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

This course is about Kinetics and kinematics of a particle; kinetics and kinematics of rigid bodies; work energy method; and impulse and momentum.

<b>Course Code</b>	MSE102-1
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING FOR ME
<b>Pre-Requisite</b>	CE104-1, CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

**Course Description:**

The course deals with the properties of engineering materials including mechanical, acoustical, electrical, magnetic, chemical, optical and thermal properties; Laboratory experiments using equipment include tension, compression, bending, shear, torsion and impact tests.

<b>Course Code</b>	MSE102L-1
<b>Course Title</b>	FUNDAMENTALS OF MATERIAL SCIENCE AND ENGINEERING FOR ME (LABORATORY)
<b>Pre-Requisite</b>	CE104-1, CHM031
<b>Co-Requisite</b>	MSE102-1
<b>Credit units</b>	1.0

**Course Description:**

The course deals with laboratory activities exploring the properties of engineering materials including mechanical, acoustical, electrical, magnetic, chemical, optical and thermal properties; Laboratory experiments using equipment include tension, compression, bending, shear, torsion and impact tests.

<b>Course Code</b>	PHY035
<b>Course Title</b>	PHYSICS FOR ENGINEERS
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	4.0

**Course Description:**

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

<b>Course Code</b>	PHY035L
<b>Course Title</b>	PHYSICS FOR ENGINEERS (LABORATORY)
<b>Pre-Requisite</b>	MATH041
<b>Co-Requisite</b>	PHY035
<b>Credit units</b>	1.0

**Course Description:**

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

<b>Course Code</b>	RES101
<b>Course Title</b>	METHODS OF RESEARCH
<b>Pre-Requisite</b>	IE101-1, ENG024
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work

<b>Course Code</b>	SAF102
<b>Course Title</b>	BASIC OCCUPATIONAL SAFETY AND HEALTH
<b>Pre-Requisite</b>	CHM031
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course tackles key Occupational Health and Safety (OSH) concepts, principles and practices that are foundational knowledge requirements applicable in almost all industries. Specifically, it assists learners in identifying the key elements in the OSH situation both here and abroad; determine existing and potential safety and health hazards; identify the range of control measures; discuss pertinent provisions of Philippine laws that refer to occupational safety and health; explain key principles in effectively communicating OSH; identify components of effective OSH programs and demonstrate some skills in identifying hazards and corresponding control measures at the workplace.

<b>Course Code</b>	SGE101
<b>Course Title</b>	STUDENT GLOBAL EXPERIENCE
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	0

**Course Description:**

Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural sensitivity, utilize and strengthen foreign language skills, and explore global career options.

<b>Course Code</b>	TEC100-2
<b>Course Title</b>	TECHNOPRENEURSHIP
<b>Pre-Requisite</b>	EMGT100, ACT099
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

## GENERAL EDUCATION COURSES

<b>Course Code</b>	ENG023
<b>Course Title</b>	RECEPTIVE COMMUNICATION SKILLS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

The course aims to develop competency in using receptive communication skills such as reading, listening, and viewing in various and advanced contexts. It gives emphasis on comprehension skills, and aims to give students a repertoire of strategies to enable them to understand various types of information presented in three different ways- from the literal to the creative level. Likewise, it aims to equip the students with advanced receptive skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG024
<b>Course Title</b>	WRITING FOR ACADEMIC STUDIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

This course intends to develop competency in utilizing expressive or productive communication skills such as writing and speaking in various and advanced contexts. It gives emphasis on organizational skills, and aims to give students a repertoire of strategies to engage in discourse through two unique ways- writing and speaking. Likewise, it intends to develop competent writing with integrity on germane topics by focusing on English grammar enhancement, sentence construction, paraphrasing, content organization and development, proofreading, and APA in-text and end-text citation. Moreover, it aims to enhance student's ability to communicate their thoughts fluently both in formal and casual settings. Taking this course will equip the students with advanced productive communication skills necessary to their success as college students and future professionals.

<b>Course Code</b>	ENG041
<b>Course Title</b>	PURPOSIVE COMMUNICATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

### **Course Description:**

Purposive Communication is about writing, speaking, and presenting to different audiences and for various purposes. Purposive Communication is a three-unit course that develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks that provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context. It equips students with tools for critical evaluation of a variety of texts and focuses on the power of language and the impact of images to emphasize the importance of conveying messages responsibly. The knowledge, skills, and insights that students gain from this course may be used in their academic endeavors, their chosen disciplines, and their future careers as they compose and produce relevant oral, written, audio-visual and/or web-based output for various purposes.

<b>Course Code</b>	HUM021
<b>Course Title</b>	LOGIC AND CRITICAL THINKING
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of correct reasoning and argumentation following the rules of language and logical coherence. It provides the blueprint for critical thinking and advances the skills for analysis and statements free from fallacies.

<b>Course Code</b>	HUM034
<b>Course Title</b>	ART APPRECIATION
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM039
<b>Course Title</b>	ETHICS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	HUM081
<b>Course Title</b>	INDIGENOUS CREATIVE CRAFTS
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is a study of the traditional forms of weaving, woodworks, and other crafts: where, how, and by whom they are done, and their artistic and social purposes.

<b>Course Code</b>	MATH035
<b>Course Title</b>	MATHEMATICS IN THE MODERN WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions and applications of mathematical tools in daily life. It begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as

merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and a science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

<b>Course Code</b>	NSTP010
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is an introduction of the National Service Training Program including all of its components as specified in the Minimum Standards for Common and Specific Modules set by the Commission on Higher Education. It provides a structured learning experience for students to be well-oriented on citizenship, drug use prevention, environmental protection, youth leadership training and disaster risk management, and peace promotion, as well as social issues and concerns where youth participation is of significance.

<b>Course Code</b>	NSTP011P
<b>Course Title</b>	NATIONAL SERVICE TRAINING PROGRAM 2 (PAIRED)
<b>Pre-Requisite</b>	NSTP010
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

#### **Course Description:**

This course is a program component of the National Service Training Program which focuses on immersing the students to community engagement activities that will contribute to the upliftment of the quality and welfare of the community being served in the aspect of education, health, environment and safety. It also covers topics on self-awareness, values and personal development, nationalism and patriotism, and service-learning which are essential elements in the service of the community

<b>Course Code</b>	PE001
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

#### **Course Description:**

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

<b>Course Code</b>	PE002
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 2
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE

<b>Credit units</b>	2.0
<b>Course Description:</b>	
This course introduces flexibility exercises for the purpose of body coordination, and improves posture, strength, and balance, in conjunction with fitness and wellness concepts. The learners shall be provided with different flexibility exercises that they would incorporate into their personal fitness program to keep the body in overall better condition. For the learners to meet their fitness goals, physical activity participation and eating patterns shall be monitored and evaluated.	

<b>Course Code</b>	PE003
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 3
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
In this course, students will engage in a Group Exercise for physical fitness development. A structured whole-body workout routine such as Circuit training, HIIT, and Tabata will be introduced with its unique purpose and benefits. It leads students to create their personal workout routines for more engaging physical activity in the achievement of their personal goals. Physical activity participation and eating habits will be regularly monitored to track one's progress.

<b>Course Code</b>	PE004
<b>Course Title</b>	PHYSICAL ACTIVITIES TOWARD HEALTH AND FITNESS 4
<b>Pre-Requisite</b>	PE001, PE002
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	2.0

<b>Course Description:</b>
This course offers various physical activities for the holistic development of students. They will be introduced in different sports which require an optimum mental, physical and social involvement. These engagements will have a significant contribution in students' total wellness – physical, mental, emotional and mental – which helps in becoming well-rounded and productive individuals.

<b>Course Code</b>	SS021
<b>Course Title</b>	UNDERSTANDING THE SELF
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

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

<b>Course Code</b>	SS022
<b>Course Title</b>	READINGS IN PHILIPPINE HISTORY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

The course aims to expose the students to different facets of Philippine history through the lens of eyewitnesses rather than rely on secondary materials such as textbooks, which is the usual approach in teaching Philippine history. Different types of primary sources will be used-written, oral visual, audio-visual, digital-covering various aspects of Philippine life (political, economic, social, cultural). Students are expected to analyze the selected readings contextually and in terms of content (stated and implied). The end goal is for the students to understand and appreciate our rich past by deriving insights from those who were actually present at the time of the event. Emphasis is also laid on selected topics about the Mindanao Problem in order to address the historical injustices, promote mutual respect, gender equality and cultural sensitivity, and build a culture of peace.

<b>Course Code</b>	SS023
<b>Course Title</b>	THE CONTEMPORARY WORLD
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

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

<b>Course Code</b>	SS036
<b>Course Title</b>	SCIENCE, TECHNOLOGY, AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course deals with interactions between science and technology, and the social, cultural, political, and economic contexts that shape and are shaped by them. This course also includes mandatory topics on climate change and environmental awareness

<b>Course Code</b>	SS038
<b>Course Title</b>	THE LIFE AND WORKS OF JOSE RIZAL
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course is mandated by Republic Act 1425 to cover the life and works of the country's national hero, Dr. Jose P. Rizal. This tackles Rizal's biography and his writings, particularly his two novels *Noli Me Tangere* and *El Filibusterismo*, his selected essays and various correspondence.

<b>Course Code</b>	SS085
<b>Course Title</b>	PHILIPPINE INDIGENOUS COMMUNITIES
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

Indigenous groups in the Philippines: their way of life, their role in and contribution to Filipino Society and their undeniably significant contribution to the nation-building. This course highlights the Cultural Communities' development, giving focus to Mindanao cultural societies, towards understanding Filipino Identity in general

<b>Course Code</b>	SS086
<b>Course Title</b>	GENDER AND SOCIETY
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	3.0

**Course Description:**

This course critically examines the multifarious and diversified ways gender informs the social world in which people live in. It strives to explore the variations between masculinism and feminism to significantly determine points of inequality across different contexts. The course strives to discover how people develop gendered identities in society through the exploration of sociological, developmental, and psychological perspectives to better understand the relationship between gender and the social structure.

<b>Course Code</b>	VE021
<b>Course Title</b>	LIFE COACHING SERIES 1
<b>Pre-Requisite</b>	NONE
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 1 introduces the student to the tools, practices, and skills needed for a Malayan to succeed the rigors of Mapua college life. It consists of modules that would help enable students to see what it means to be Malayan and how this new mindset can prepare them for a successful future.

<b>Course Code</b>	VE022
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE021
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

Life Coaching Series 2 prepares the students to harness their full potentials and limitless possibilities in leadership to become effective team-players inside the classroom and in the outside world. It introduces key leadership principles and strategies anchored on strong Filipino values and traits. It also highlights MCM Core Values on excellence and relevance with mutual respect, harmony, and social responsibility to complement their acquired leadership skills and attributes. It consists of modules that would help enable students to become more responsible, productive, competitive, and culturally-sensitive individuals as members of the MCM community, as Mindanaons, and as 21st century global Filipino citizens.

<b>Course Code</b>	VE023
<b>Course Title</b>	LIFE COACHING SERIES 2
<b>Pre-Requisite</b>	VE022
<b>Co-Requisite</b>	NONE
<b>Credit units</b>	1.0

**Course Description:**

The course aims to expose students to various class discussions and tasks that will hone and mold them to become professional Malayans observing excellence and relevance during and after their stay in the institution. It also intends to provide lifelong-learning that will be utilized by the students both in on and off-campus settings. These learnings include the Do's and Don'ts among professionals, especially in culturally pluralistic spaces such as Mindanao.