



Republic of the Philippines
BATANGAS STATE UNIVERSITY
The National Engineering University

Lipa Campus

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College of Engineering Technology

BACHELOR OF COMPUTER ENGINEERING TECHNOLOGY

CMO Reference No. 13, S. 2023; CMO Reference No. 4, S. 2018; CMO Reference No. 20, S. 2013;

CMO Reference No. 39, S. 2021; CMO Reference No. 40, S. 2021

ABET-ETAC Criteria for Accrediting Engineering Technology Programs 2023-2024

I. University Vision

A premier national university that develops leaders in the global knowledge economy.

II. University Mission

A university committed to producing leaders by providing a 21st century learning environment through innovations in education, multidisciplinary research, and community and industry partnerships in order to nurture the spirit of nationhood, propel the national economy, and engage the world for sustainable development

III. University Core Values

Patriotism

This value extends from promoting love of country to taking pride in being a Filipino. The University advocates a strong sense of commitment to national ideals through its active promotion of the Philippine culture and heritage, as well as concern for the environment and the nations, all of which lead to the creation of a pool of professionals who are instrumental for nation building.

Integrity

This pertains to the University's steadfast adherence to morally-sound principles and ideals in the pursuit of institutional goals and objectives. It covers the values of accountability, honesty, righteousness, incorruptibility, and decency in the governance and implementation of academic, administrative, financial policies.

Excellence

This represents the drive of the University to pursue greatness. It includes the cultivation of a culture of excellence in the hearts and minds of the stakeholders, and the continuous improvement in the systems by which the University operates on. This value pushes the institution to go beyond the standard levels of performance, and be in a position of leadership that would inspire the people and other institutions to serve the country in the highest degree.

Service

This refers to the genuine desire of the University to respond to the growing needs of the community. It encompasses the selfless performance of the University's mandates, and in



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duty to constantly meet the challenges of development in the country in the spirit of uplifting the lives of the Filipino people.

Resilience

This refers to the ability to conquer the different challenges, hardships and tests of time. This value encompasses the commitment of the University to support the government in pursuing sustainable development, and foster disaster risk reduction and management by dedicating its efforts towards strengthening readiness and capacity of the community and its people.

Faith

The University's initiatives and activities are guided by a strong faith in a Supreme Being. These are anchored on high regard and respect for the beliefs and orientation of each member of the academic community for a productive and meaningful co-existence.

IV. *Philosophy or Rationale of the Program*

The Bachelor of Computer Engineering Technology program aims to produce competent graduates who can contribute to industrialization and society's welfare, particularly in the interdisciplinary field of computers. The program provides a deep understanding of mechanical, electrical, electronics and computing systems, merging these disciplines to design, develop, and implement cutting-edge solutions in various industries, recognizing its critical role in societal growth. Graduates must possess a robust foundation in technical knowledge, practical skills, and a holistic perspective essential for innovation and problem-solving within the field. Moreover, the program focuses on fostering an in-depth understanding of computer systems, robotics, automation, control systems, and the integration of software and hardware components. Students will engage in hands-on projects, case studies, and internships to gain practical experience, ensuring they are well-prepared for the dynamic demands of the industry.

Additionally, the program aims to develop graduates with ethical behavior, integrity, social responsibility, effective communication, teamwork, and leadership skills, while also promoting lifelong learning to keep up with the ever-changing field of engineering technology. The program provides opportunities for further studies, research, certifications, as well as personal and professional development, including career advancement.



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V. Program Educational Objectives

PEO 1	Title: Successful Professional Practice	
	Description: Successfully practice as computer engineering technologists for the welfare of the society.	
	KPI 1	Graduates are involved in operations planning with contribution towards improving processes.
	KPI 2	Graduates are able to undertake technology activities in a way that contributes to sustainable development
PEO 2	Title: Ethics and Professionalism	
	Description: Demonstrate a high degree of ethics and professionalism at all time	
	KPI 1	Graduates have planned for effective project implementation through managing the planning, budgeting and organization of tasks, people, and resources.
	KPI 2	Graduates have managed teams and developed staff to meet changing technical and managerial needs.
	KPI 3	Graduates are developing or have started a company or partnership business.
PEO 3	Title: Technological Advancement	
	Description: Contribute to the technological advancement for the welfare of the humanity	
	KPI 1	Graduates have actively contributed to the development of new technologies, processes and/or methodologies or improvements in existing ones
	KPI 2	Graduates participated in research and development projects aimed at technological innovations
	KPI 3	Graduates have actively engaged with stakeholders including communities and end-users, to understand and address real-world challenges



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	KPI 4	Graduates communicate and collaborate with interdisciplinary teams to ensure the societal impact of their technological contributions.
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VI. Career Opportunities

The Bachelor of Computer Engineering Technology program educates and trains students to become computer engineering technology specialists with a broader grasp of industrial processes. This program prepares students for careers such as but not limited to computer network technician/technologist, software/web programmer and developer, communication technologist, network administrator, cyber security technologist, embedded systems and robotics technician/technologist who work to increase efficiency, profitability, and safety in the workplace. Graduates have had both successful and fulfilling employment in a range of fields.

VII. Allied Programs

The Bachelor of Computer Engineering Technology program often shares common ground with several allied or related programs due to its interdisciplinary nature. Here are some of the allied programs and fields that have overlapping areas of study and career opportunities:

1. Computer Science:
2. Information Technology (IT)
3. Software Engineering
4. Cybersecurity
5. Computer Information Systems (CIS)
6. Robotics Engineering
7. Artificial Intelligence (AI) and Machine Learning

VIII. Institutional Graduate Attributes

1. **Knowledge Competence** - Demonstrate a mastery of the fundamental knowledge and skills required for functioning effectively as a professional in the discipline, and an ability to integrate and apply them effectively to practice in the workplace.
2. **Creativity and Innovation** - Experiment with new approaches, challenge existing knowledge boundaries and design novel solutions to solve problems.



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3. **Critical and Systems** - Identify, define, and deal with complex problems pertinent to the future professional practice or daily life through logical, analytical and critical thinking.
4. **Communication** - Communicate effectively (both orally and in writing) with a wide range of audiences, across a range of professional and personal contexts, in English and Pilipino
5. **Lifelong learning** – Identify own learning needs for professional or personal development; demonstrate an eagerness to take up opportunities for learning new things as well as the ability to learn effectively on their own.
6. **Leadership, teamwork, and Interpersonal Skills** - Function effectively both as a leader and as a member of a team; motivate and lead a team to work towards goal; work collaboratively with other team members; as well as connect and interact socially and effectively with diverse cultures.
7. **Global Outlook** - Demonstrate an awareness and understanding of global issues and willingness to work, interact effectively and show sensitivity to cultural diversity.
8. **Social and National Responsibility** - Demonstrate an awareness of their social and national responsibility; engage in activities that contribute to the betterment of the society; and behave ethically and responsibly in social, professional and work environments.

IX. Student Outcomes

SO 1	Problem Analysis	
	Ability to apply their knowledge of mathematics, science, engineering, and technology, along with analytical tools, to solve broadly-defined engineering problems within their discipline and to enhance industrial technology processes creatively and innovatively that is within industry standards	
	KPI 1	Determine the present technology's issues and limitations
	KPI 2	Analyze the situation and come up with a solution using scientific and mathematical principles
	KPI 3	Use logical, mathematical and technical principles in formulating solutions
SO 2	Design and Development of Solutions	
	Ability to design and implement systems, components, and processes to address broadly-defined engineering problems within the discipline, while demonstrating proficiency, adaptability, and adherence to global standards in meeting industry-specific requirements	



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	KPI 1	Design systems, components or processes that will achieve program objectives
	KPI 2	Formulate solutions through various technology-based outputs that will address the needs of the community and industry
SO 3	Communication	
	Ability to demonstrate proficiency in written, oral, and graphical communication in broadly-defined technical and non-technical environments, effectively utilizing relevant technical literature and culturally sensitive language while ensuring clarity and persuasion in conveying information, including the ability to understand and provide clear instructions, maintain high comprehension levels, deliver compelling presentations, compose effective documents, and articulate technological innovation outputs to diverse clientele	
	KPI 1	Convey ideas through written, oral, and graphical communication in well-defined technical and non-technical environments;
	KPI 2	Exhibit oral and visual communication skills suited to the industrial technology profession
	KPI 3	Show proficiency in writing research-based papers, stylistic essays and technical reports
SO 4	Investigation	
	Ability to perform standard tests, measurements, and experiments, and subsequently analyze and interpret the results to enhance processes, while also applying contemporary techniques, resources, and cutting-edge engineering technology tools to address current industry requirements and to foster entrepreneurial growth, all while upholding the safety and health standards of business and industry.	
	KPI 1	Examine a series of experimental results
	KPI 2	Conduct experiments to evaluate the interpretation of theories
	KPI 3	Design the solution to mitigate the identified gaps
SO 5	Leadership and Teamwork	
	Ability to function effectively both as team members and leaders in technical teams, while also developing and demonstrating leadership and management competencies within team-based environments, making informed decisions, motivating teams, delegating responsibilities, and inspiring positive organizational change through the practice of their profession with integrity and accountability.	
	KPI 1	Establish team rapport, priorities and action plans to meet the goal
	KPI 2	Participate actively in team activities as a member(s) in meetings and help to reinforce concepts



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	KPI 3	Show appreciation for the efforts exerted by each member
SO 6	Ethics and Professionalism	
	Ability to adhere to the moral, ethical and professional responsibility of an engineering technologist in balancing the broader public interest while upholding the ethical norms and safety standards within the industrial technology profession.	
	KPI 1	Demonstrate professional and ethical values in the workplace
	KPI 2	Examine the condition that necessitates a decision based on moral, legal and technical aspects
SO 7	Lifelong Learning	
	Ability to demonstrate enthusiasm and commitment to lifelong learning, nurturing ongoing personal and professional development, and driving positive transformations within the broadly-defined engineering technology field for entrepreneurial and industrial development.	
	KPI 1	Promote lifelong learning programs in order to progress and grow one's career
SO 8	Social and National Responsibility	
	Apply acquired engineering technology knowledge and skills in addressing community problems that contribute to national development.	
	KPI 1	Be updated with the current national and global issues, technologies and problems in the technological and non-technical space concerning one's profession
	KPI 2	Be abreast with the recent trends in the industry

X. Teaching, Learning, and Assessment Pedagogies

- **Lecture.** Although the usefulness of other teaching strategies is being widely examined today, the lecture still remains an important way to communicate information.
- **Case Method.** Providing an opportunity for students to apply what they learn in the classroom to real-life experiences has proven to be an effective way of both disseminating and integrating knowledge. The case method is an instructional strategy that engages students in active discussion about issues and problems inherent in practical application.
- **Discussion.** Other faculty find it helpful to have student's list critical points or emerging issues, or generate a set of questions stemming from the assigned reading(s).
- **Distance Learning.** Distance learning is not a new concept. We have all experienced learning outside of a structured classroom setting through television, correspondence courses, etc. Distance learning or distance education as a teaching pedagogy, however, is an important topic of discussion on college campuses today.
- **Integrating Technology.** Today, educators realize that computer literacy is an important part of a student's education. Integrating technology into a course curriculum when appropriate is proving to be valuable for enhancing and extending the learning experience for faculty and students



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- **Cooperative Learning.** Cooperative Learning is a systematic pedagogical strategy that encourages small groups of students to work together for the achievement of a common goal. The term 'Collaborative Learning' is often used as a synonym for cooperative learning when, in fact, it is a separate strategy that encompasses a broader range of group interactions such as developing learning communities, stimulating student/faculty discussions, and encouraging electronic exchanges (Bruffee, 1993). Both approaches stress the importance of faculty and student involvement in the learning process.
- **Active Learning.** Many studies show that learning is enhanced when students become actively involved in the learning process. Instructional strategies that engage students in the learning process stimulate critical thinking and a greater awareness of other perspectives.
- The assessment methods at the end of the topic like assignments, quizzes, midterm and final examinations will be conducted throughout the duration of the course.
- Class test and return demonstration method are after the discussion of the major topics while the other works are distributed throughout the duration of the course.

XI. Integration of New Principles in the Enhanced OBE Framework

Outcome-based education (OBE) is an approach that emphasizes learning outcomes and skills that students should possess after completing a program. The Bachelor of Computer Engineering Technology is a degree that prepares students to enter the workforce in various fields of engineering technology. To enhance the OBE framework in this program, several new principles have been integrated to align with current trends and needs.

The new principles that have been integrated into the enhanced OBE framework of the program include technology infusion, CDIO approach, SDGs, Gender and Development, Peace studies/education, indigenous studies/education, Internationalization, and Red Spartan Spirit. These principles provide students with practical skills, cultural awareness, social responsibility, and a broad understanding of global issues that are essential for success in today's workforce.

The integration of these principles into the enhanced OBE framework provides students with a comprehensive education that prepares them for their future careers. The program, with its enhanced OBE framework, focuses on providing students with the knowledge and skills they need to succeed in their chosen field, while also contributing to sustainable development and social responsibility.

Technology Infusion

The Bachelor of Computer Engineering Technology program necessitates continuous infusion of technology to stay relevant in the fast-paced, ever-changing industrial landscape. Rapid technological innovation has transformed traditional engineering practices, and the program must adapt to these changes to remain competitive and address industry demands.

By integrating technology into the curriculum, students gain a comprehensive understanding of the latest advancements in computer engineering technology. This knowledge enables them to adeptly incorporate cutting-edge technologies like computer



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systems, robotics, automation, and control systems into their work processes. The integration of software and hardware components further enhances efficiency, precision, and safety in engineering and industrial practices. Therefore, the infusion of technology is imperative to equip students with the knowledge and skills needed to meet the challenges of the modern industrial world.

Integration of Conceive, Design, Implement, Operate Principles (CDIO)

The integration of CDIO principles into the Bachelor of Computer Engineering Technology program is essential to prepare students to become innovative and competent professionals capable of meeting the challenges of the rapidly evolving industrial landscape. The CDIO framework emphasizes the integration of theory and practice in engineering and technology education, providing students with a hands-on, practical approach to learning. This approach is particularly relevant to this program, and it enables students to develop a comprehensive understanding of the entire industrial process, from conception to operation, through project-based learning activities and real-world projects. Furthermore, this approach fosters teamwork, communication, and problem-solving skills, which are vital in the modern industrial world.

Integration of Sustainable Development Goals Principles

The Sustainable Development Goals (SDGs) principles, adopted by the United Nations, aim to achieve a better and more sustainable future for all by addressing various global challenges such as poverty, inequality, climate change, and environmental degradation. The SDGs provide a framework for action and serve as a universal call to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. The relevance of the SDGs principles to the Bachelor of Computer Engineering Technology program is crucial as it equips students with the knowledge and skills necessary to create innovative and sustainable solutions in various fields, especially in engineering and industrial fields.

The program requires the integration of the SDGs into the curriculum to promote responsible production and consumption, sustainable infrastructure, clean energy, and environmentally-friendly practices. Hence, the inclusion of the SDGs in the program prepares students to become responsible and innovative engineering technologists who contribute to achieving a sustainable future.

Integration of Gender and Development

Gender and Development (GAD) is a crucial aspect of contemporary societies as it helps to create equitable opportunities for people of all genders. In the context of the Bachelor of Computer Engineering Technology, GAD is highly relevant to the program's learning objectives and outcomes, as it can help students gain a deeper understanding of how gender roles and stereotypes affect the industries they are preparing to enter. Specifically, the program requires students to be proficient in engineering and technological knowledge



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and skills. However, without an understanding of GAD, students may overlook how gender norms affect the way people interact with technology and how this can perpetuate gender inequalities. Therefore, incorporating GAD into the program can help students become more socially aware and responsible professionals who can contribute to a more equitable and sustainable future.

Integration of Peace Studies / Education

Integration of peace studies/education into the Bachelor of Computer Engineering Technology equips students with vital knowledge, skills, and attitudes needed for a peaceful and sustainable world. This integration exposes students to diverse conflict perspectives, fosters critical thinking, and enhances communication and problem-solving skills. Those exposed to peace studies/education can apply their expertise to promote workplace peace, engage in constructive dialogue, and contribute to sustainable technology development. Thus, the integration is essential for producing socially responsible, ethical engineering technologists committed to building a peaceful world.

Integration of Indigenous Studies / Education

Integration of Indigenous Studies/Education into the Bachelor of Computer Engineering Technology provides students with a deep understanding of indigenous history, cultures, and perspectives, fostering collaborative work with indigenous communities and businesses. This knowledge enhances cultural competence, making students more sensitive to the unique needs of Indigenous peoples. Through critical analysis, students reflect on their professional roles, promoting ethical practices that prioritize sustainability, social justice, and equity. Incorporating this principle into the program will empower students to operate effectively in diverse contexts and contribute to positive social change.

Internationalization

Internationalization is integral to the objectives of the Bachelor of Computer Engineering Technology. Embracing it exposes students to diverse cultures, languages, and perspectives, enhancing their global competency. This broader outlook aids in understanding global markets and technology, crucial in the rapidly evolving world of engineering technology. Internationalization also opens doors to study abroad, international internships, and collaborations with peers and experts worldwide, offering valuable experiences that enrich students' education and career prospects.

Integration of the Red Spartan Spirit Course / Topics

The Red Spartan Spirit embodies passion, perseverance, and dedication—essential qualities for Bachelor of Computer Engineering Technology students. Aligned with program goals, it cultivates knowledge, competence, creativity, critical and systems



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lifelong learning, leadership, teamwork, interpersonal skills, global outlook, and social and national responsibility. This spirit instills determination, fostering mastery of foundational knowledge and skills in Computer Engineering Technology. Encouraging the challenge of existing boundaries and experimentation with novel approaches, it promotes creativity and innovation. Through critical and systems lifelong learning, students adapt to technological advancements, developing leadership, teamwork, and interpersonal skills for effective global collaboration while honoring social and national responsibilities.



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ACADEMIC PROGRAM			Technology Infusion	Integration of Conceive, Design, Implement, Operate Principles (CDIO)	Integration of Sustainable Development Goals Principles	Integration of Gender and Development	Integration of Indigenous Studies / Education	Integration of Peace Studies / Education	Internationalization	Integration of the Red Spartan Spirit Course
No.	Course Code	Course Title								
NON-TECHNICAL COURSES										
<i>A. Required General Education Courses</i>										
1	GEd 101	Understanding the Self	1		SDG 5	1		1		2,6
2	GEd 102	Mathematics in the Modern World	1				1			
3	GEd 104	The Contemporary World	1		SDG 4				1	
4	GEd 105	Readings in Philippine History	1		SDG 16			1		
5	GEd 106	Purposive Communication	1		Intro to SD	1	1		1	
6	GEd 107	Ethics	1						1	1
7	GEd 108	Art Appreciation	1			1		1		2, 5,6
8	GEd 109	Science, Technology, and Society	1							
<i>B. Mandated Courses</i>										
1	GEd 103	Life and Works of Rizal	1							1

C. Elective Course									
1	Litr102	ASEAN Literature	1	1		1			3,4
2	GAD101	Gender and Society	1	1		1			3,4
3	ES101	Environmental Science			SDG13				
D. PATHFit & NSTP									
1	PATHFit 1	Movement Competency Training	1		SDG 3				
2	PATHFit 2	Exercise-based Fitness Activities	1						1
3	PATHFit 3	Traditional and Recreational Games	1						
4	PATHFit 4	Team Sports (Basketball and Volleyball)	1						
5	NSTP 111	National Service Training Program 1			SDG 11		1		1,4
6	NSTP 121	National Service Training Program 2			SDG 11		1		1,4
TECHNICAL COURSES									
A. Math and Sciences Courses									
1	MathET140	Comprehensive Math (Algebra, Trigonometry, Analytic Geometry)	1						
2	MathET141	Differential Calculus for BET	1						
3	MathET241	Integral Calculus for BET	1						
4	MathET242	Probability and Statistics	1						
5	SciET141	Chemistry	1						
6	SciET142	Physics	1						
B. Management and Tool Courses									
1	CpET140	Computer Programming	1		SDG 4,9				
2	BET141	Production Drawing	1						
3	BET142	Computer Aided Design	1						
4	BET143	Occupational Health and Industrial Safety Management	1						
5	BET241	Materials Selection & Testing	1						
6	BET341	Quality Control and Assurance	1						
7	BET342	Technopreneurship for BET	1						
8	BET344	Engineering Technology Ethics	1						
9	BET345	Industrial Operation & Management Practices	1						
10	BET 346	Engineering Technology Management	1						
C. Professional Courses									
1	CpET141	Electrical and Electronics Principles	1		SDG 7				

2	CpET142	Computer Programming II	1		SDG 4,9				
3	CpET143	Computer Hardware Systems	1		SDG 9				
4	CpET144	Analog and Digital Electronics	1		SDG 7				
5	CpET241	Microprocessor Systems	1		SDG 9				
6	CpET242	Networking I - Introduction to Networking Technology	1		SDG 9				
7	CpET243	System Analysis and Design	1		SDG 4,9				
8	CpET244	Networking II - Internetworking with Routers and Switches	1		SDG 9				
9	CpET245	Multimedia Systems (Visual Graphics & Web Development)	1		SDG 4,9				
10	CpET246	Operating Systems	1		SDG 4,9				
11	CpET341	Data Management System	1		SDG 12				
12	CpET342	Networking III - Networking Infrastructure Security	1		SDG 9				
13	CpET343	Embedded Systems	1		SDG 9				
14	CpET344	Internet of Things (IoT)	1		SDG 9				
15	CpET345	Emerging Information and Communication Technologies	1		SDG 9				
16	CpET346	Artificial Intelligence	1		SDG 9				
17	BET343	Technology Capstone Project 1	1	1	SDG 9				
18	BET347	Technology Capstone Project 2	1	1	SDG 9				
19	BET441	Supervised Industrial Training 1	1	1	SDG 17				
20	BET442	Supervised Industrial Training 2	1	1	SDG 17				

Legend: 0-Not Integrated, 1- Integrated

For Red Spartan Spirit, core values of the university are mapped to the different courses of the program.

1. Patriotism
2. Integrity
3. Excellence
4. Service
5. Resilience
6. Faith



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XII. Proposed Curriculum Structure

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FIRST YEAR							
FIRST SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
CpET140	Computer Programming I	2	3	3			TC-C
CpET141	Electrical and Electronics Principles	2	3	3			TC-C
GEd 101	Understanding the Self	3	0	3			NTC
GEd 102	Mathematics in the Modern World	3	0	3			NTC-A
SciET141	Chemistry	3	3	4			TC-A
BET141	Production Drawing	1	6	3			TC-B
MathET140	Comprehensive Math (Algebra, Trigonometry, Analytic Geometry)	3	0	0			TC-A
PATHFit 1	Movement Competency Training	2	0	2			NT-D
NSTP 111	National Service Training Program 1	3	0	3			NT-D
	Total	22	15	24			
FIRST YEAR							
SECOND SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
CpET142	Computer Programming II	2	3	3	CpET140		TC-C
CpET143	Computer Hardware Systems	2	3	3	CpET141		TC-C
CpET144	Analog and Digital Electronics	2	3	3	CpET141		TC-C
GEd 103	Life and Works of Rizal	3	0	3			NTC-A
SciET142	Physics	3	3	4	MathET140		TC-A
BET142	Computer Aided Design	1	3	2	BET141		TC-B
PATHFit 2	Exercise-based Fitness Activities	2	0	2	PATHFit 1		NT-D
NSTP 121	National Service Training Program 2	3	0	3	NSTP 111		NT-D
	Total	18	15	23			
FIRST YEAR							
MIDTERM SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
GEd 104	The Contemporary World	3	0	3			NTC-A
MathET141	Differential Calculus for BET	3	0	3	MathET140		TC-A
BET 143	Occupational Health and Industrial Safety Management	3	0	3			TC-B
	Total	9	0	9			



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SECOND YEAR							
FIRST SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
CpET241	Microprocessor Systems	2	3	3	CpET144		TC-C
CpET242	Networking I - Introduction to Networking Technology	2	3	3	CpET143		TC-C
CpET243	System Analysis and Design	2	3	3			TC-C
LITR102	ASEAN Literature	3	0	3			NT-C
GEd 105	Readings in Philippine History	3	0	3			NTC-A
MathET241	Integral Calculus for BET	3	0	3	MathET141		TC-A
PATHFit 3	Traditional and Recreational Games	2	0	2	PATHFit 1 & 2		NT-D
	Total	17	9	20			
SECOND YEAR							
SECOND SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
CpET244	Networking II - Internetworking with Routers and Switches	2	3	3	CpET242		TC-C
CpET245	Multimedia Systems (Visual Graphics & Web Development)	2	3	3	CpET143		TC-C
CpET246	Operating Systems	3	0	3	CpET143		TC-C
GAD101	Gender and Society	3	0	3			NT-C
BET241	Materials Selection & Testing	3	0	3			TC-B
GEd 106	Purposive Communication	3	0	3			NTC-A
MathET242	Probability and Statistics	3	0	3	MathET241		TC-A
PATHFit 4	Team Sports (Basketball and Volleyball)	2	0	2	PATHFit 1 & 2		NT-D
	Total	21	6	23			



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THIRD YEAR							
FIRST SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
CpET341	Data Management System	2	3	3	CpET243		TC-C
CpET342	Networking III - Networking Infrastructure Security	2	3	3	CpET244		TC-C
CpET343	Embedded Systems	2	3	3	CpET241		TC-C
GEd 107	Ethics	3	0	3			NTC-A
GEd 108	Art Appreciation	3	0	3			NTC-A
BET341	Quality Control and Assurance	3	0	3			TC-B
BET342	Technopreneurship for BET	3	0	3			TC-B
BET343	Technology Capstone Project 1	2	3	3	CpET245	CpET341	TC-C
	Total	20	12	24			
THIRD YEAR							
SECOND SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
CpET344	Internet of Things (IoT)	2	3	3	CpET342		TC-C
CpET345	Emerging Information and Communication Technologies	3	0	3		CpET344	TC-C
CpET346	Artificial Intelligence	2	3	3	CpET343		TC-C
GEd 109	Science, Technology and Society	3	0	3			NTC-A
ES101	Environmental Science	3	0	3			NT-C
BET344	Engineering Technology Ethics	3	0	3			TC-B
BET345	Industrial Operation & Management Practices	3	0	3			TC-B
BET 346	Engineering Technology Management	3	0	3			TC-B
BET347	Technology Capstone Project 2	2	3	3	BET343		TC-C
	Total	24	9	27			



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FOURTH YEAR							
FIRST SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
BET441	Supervised Industrial Training 1	0	540	6	BET347		TC-C
	Total	0	540	6			
FOURTH YEAR							
SECOND SEMESTER							
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)	Category
BET442	Supervised Industrial Training 2	0	540	6	BET 441		TC-C
	Total	0	540	6			
	Grand Total	131	1146	162			



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XIII. Comparison of Proposed Curriculum Structure with CMO of the Program

Comparison Summary		
Courses	CMO No.13 S.2023 (BIndTech-AT)	BET BCpET
	Number of Units	
NON-TECHNICAL COURSES		
A. Required General Education	24	24
B. Mandated Courses	3	3
C. Elective Courses	9	9
D. PATHFit & NSTP	14	14
Sub-Total	50	50
TECHNICAL COURSES		
A. Math and Sciences Courses	11	17
B. Management and Tool Courses	29	29
C. Professional Courses	65	66
Sub-Total	105	112
GRAND TOTAL	155	162



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XIV. Curriculum Mapping

Course Code	Course Title	Credit Units	SO1	SO2	SO3	SO4	SO5	SO6	SO7	SO8
First Year – First Semester										
CpET140	Computer Programming I	3	I	I						
CpET141	Electrical and Electronics Principles	3	I/R					I/R		
GEEd 101	Understanding the Self	3						R	R	
GEEd 102	Mathematics in the Modern World	3	I							
SciET141	Chemistry	4	R			R				
BET141	Production Drawing	3							D	
MathET140	Comprehensive Math (Algebra, Trigonometry, Analytic Geometry)	0	I							
PATHFit 1	Movement Competency Training	2							D	
NSTP 111	National Service Training Program 1	3					R			R
First Year – Second Semester										
CpET142	Computer Programming II	3	I/R	I/R						
CpET143	Computer Hardware Systems	3		I/R			I/R	I/R		
CpET144	Analog and Digital Electronics	3	I/R	I/R						
GEEd 103	Life and Works of Rizal	3					I		I	I
SciET142	Physics	4	R			R				
BET142	Computer Aided Design	2	R	D						
PATHFit 2	Exercise-based Fitness Activities	2							D	
NSTP 121	National Service Training Program 2	3					D			D
First Year – Midterm Semester										
GEEd 104	The Contemporary World	3							I	I
MathET141	Differential Calculus for BET	3	I							
BET143	Occupational Health and Industrial Safety Management	3						R		R
Second Year – First Semester										
CpET241	Microprocessor Systems	3	R	R						
CpET242	Networking I - Introduction to Networking Technology	3	R	R						
CpET243	System Analysis and Design	3		I/R			I/R			
LITR102	ASEAN Literature	3							R	
GEEd 105	Readings in Philippine History	3			I				I	I
MathET241	Integral Calculus for BET	3	I							
PATHFit 3	Traditional and Recreational Games	2							D	



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Second Year – Second Semester										
CpET244	Networking II - Internetworking with Routers and Switches	3	R	R				R		
CpET245	Multimedia Systems (Visual Graphics & Web Development)	3		R			R			
CpET246	Operating Systems	3	R	R						
GAD101	Gender and Society	3							I	I
BET241	Materials Selection & Testing	3	D	D		D				
GEd 106	Purposive Communication	3			R			R		
MathET242	Probability and Statistics	3	R							
PATHFit4	Team Sports (Basketball and Volleyball)	2						D		D
Third Year – First Semester										
CpET341	Data Management System	3		D				D		
CpET342	Networking III - Networking Infrastructure Security	3	D	D					D	
CpET343	Embedded Systems	3	D	D				D		
GEd 107	Ethics	3							I	
GEd 108	Art Appreciation	3						R		R
BET341	Quality Control and Assurance	3	R			R				
BET342	Technopreneurship for BET	3	R	R						R
BET343	Technology Capstone Project 1	3	D	D						D
Third Year – Second Semester										
CpET344	Internet of Things (IoT)	3		D				D		
CpET345	Emerging Information and Communication Technologies	3		D				D		
CpET346	Artificial Intelligence	3		D				D		
GEd 109	Science, Technology and Society	3							I	I
ES101	Environmental Science	3	I							I
BET344	Engineering Technology Ethics	3							R	R
BET345	Industrial Operation & Management Practices	3				R			R	
BET346	Engineering Technology Management	3					R		R	
BET347	Technology Capstone Project 2	3	D	D						D
Fourth Year – First Semester										
BET441	Supervised Industrial Training 1	6						D	D	D
Fourth Year – Second Semester										
BET442	Supervised Industrial Training 2	6						D	D	D

Legend: I – Introduced, R – Reinforced, D - Demonstrated



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XV. Course Description

First Year – First Semester Courses

CpET140 – Computer Programming I (3 units)

This course provides an in-depth exploration of the fundamentals of C/C++ Programming. This course covers a wide array of critical topics, including syntax, data structures, and application development. The intended learning outcomes encompass the ability to comprehend the programming concepts, write and debug code, design and implement applications, and solve real-world problems using C/C++. By the end of this course, students will be well-prepared to leverage C/C++ for a variety of applications, making them proficient in roles related to software development, system programming, and algorithm design. C/C++ Programming not only imparts technical skills but also cultivates problem-solving, critical thinking, and adaptability, vital for students seeking careers in the dynamic field of computer engineering technology. This course plays a pivotal role in preparing students to become adept programmers and problem solvers in today's technology-driven world, where C/C++ remains a fundamental and widely used language.

CpET141 – Electrical and Electronics Principles (3 units)

Electrical and Electronics Principles is a course aimed at providing students with a solid foundation in the fundamental principles of electrical and electronic systems. This course covers a wide array of essential topics, including electrical circuits, electronic components, analog and digital electronics, and the practical application of electronic principles. The intended learning outcomes encompass the ability to comprehend electrical and electronic theory, analyze and design circuits, work with electronic components, and troubleshoot electrical and electronic systems. By the end of this course, students will be well-prepared to understand and work with the core principles that underlie modern technology, making them proficient in roles related to electronics design, maintenance, and engineering. Electrical and Electronics Principles play a pivotal role in preparing students to bridge the gap between theory and practical application, making them well-rounded professionals who can contribute to the development and maintenance of electronic systems in various industries.

GEEd 101 - Understanding the Self (3 units)

The course deals with the nature of identity, as well as the factors and forces that affect the development and maintenance of personal identity. The directive to Know Oneself has inspired countless and varied ways to comply. Among the questions that everyone has had to grapple with at one or other is “Who am I?” At no other period is this question asked more urgently than in adolescence – traditionally believed to be a time of vulnerability and great possibilities. Issues of self and identity are among the most critical for the young. This course is intended to facilitate the exploration of the issues and concerns regarding self and identity to arrive at a better understanding of one’s self. It strives to meet this goal by stressing the integration of the persona; 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 attitudes while enabling them to manage and improve themselves to attain a better quality of life.



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SciET141 Chemistry (4 units)

This course is tailored to provide a comprehensive understanding of fundamental chemical principles and their practical applications in engineering contexts. The course covers key topics essential for engineering technology, including atomic structure, chemical bonding, stoichiometry, thermodynamics, and kinetics. Emphasis will be placed on the practical aspects of chemistry relevant to engineering, such as material properties, corrosion prevention, and environmental impact. Through a combination of theoretical lectures and hands-on laboratory sessions, students will gain proficiency in chemical analysis techniques and learn to apply chemical principles to solve engineering problems. The course aims to equip engineering technology students with a solid foundation in chemistry, fostering an appreciation for its role in various engineering disciplines and preparing them for future challenges in their careers.

BET141 Production Drawing (3 units)

This course focuses on the fundamentals of technical drawing. Specific skills introduced in this course may include sketching, lettering, manipulation of drawing tools and instruments, geometric construction, dimensioning, and orthographic drawing. The application of the general principles and practices of sketching, lettering, instrumental drawing, geometrical construction and orthographic drawing are exploratory activities to prepare and challenge the class for the succeeding topics of this course. It provides students with knowledge and challenges in the construction of different working drawings that would help improve their skills in drawing and later use in the construction and manufacturing industries.

MathET140 Comprehensive Math (Algebra, Trigonometry, Analytic Geometry) (0 unit)

This course is designed to provide engineering technology students with a robust foundation in algebra, trigonometry, and analytic geometry. Beginning with fundamental algebraic principles such as linear and quadratic equations, inequalities, and systems of equations, the course progresses to cover essential trigonometric concepts and their applications. Analytic geometry is introduced to study points, lines, and curves in a coordinate system. Emphasis is placed on practical applications of these mathematical concepts in engineering scenarios, including circuit analysis, and geometric modeling. The goal is to enable students to develop a strong mathematical skill set that is essential for success in their engineering technology careers. This course serves as comprehensive preparation for advanced mathematical studies and their practical application in diverse engineering disciplines.

GEEd 102 – Mathematics in the Modern World (3 units)

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions, and application of mathematical tools in daily life. The course begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and in 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 of science) governed by logic and reasoning.

NSTP 111 - National Service Training Program 1 (3 units)

This course is one (1) of the (3) components under National Service Training Program Act of 2001 (RA.A. No. 9163) designed to encourage, develop and train the students to contribute to the general



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welfare and betterment of life for the members of the community or the enhancement of its facilities, especially those devoted to improving health, education, environment, entrepreneurship, safety, recreation, and moral of the citizenry and other social welfare services.

PATHFit 1 - Movement Competency Training (2 units)

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 will be conducted of one's level of fitness and physical activity, as well as eating patterns to monitor one's progress and achievement of personal fitness and dietary goals.

First Year – Second Semester Courses

CpET142 – Computer Programming II (3 units)

This course is designed to provide a thorough understanding of the principles and practices of object-oriented programming. Students will explore the core concepts of OOP, including classes, objects, inheritance, polymorphism, encapsulation, and abstraction. Through hands-on programming assignments and real-world applications, students will learn to design and implement robust, modular, and maintainable software solutions. The course will also cover OOP topics such as interfaces, design patterns, and exception handling. Intended learning outcomes include the ability to analyze problems and design solutions using an object-oriented approach, proficiency in implementing and troubleshooting OOP code, and a comprehensive understanding of how OOP principles contribute to software development best practices.

CpET143 – Computer Hardware Systems (3 units)

Computer Hardware Systems is a foundational course aimed at providing students with a comprehensive understanding of computer hardware components and systems. This course covers a range of critical topics, including computer architecture, digital logic, central processing units (CPUs), memory systems, storage devices, system servicing and maintenance. The intended learning outcomes include the ability to comprehend computer hardware principles, configure and troubleshoot computer systems, understand the role of CPU and memory in data processing, and perform maintenance and upgrades. By the end of this course, students will be well-prepared to work with and manage computer hardware systems, ensuring their optimal performance, and making them proficient in roles related to computer maintenance, support, and system administration. Computer Hardware Systems impart technical skills and foster problem-solving, critical thinking, and adaptability, essential for students seeking careers in the field of computer engineering technology. This course prepares students to interact effectively with computer systems, ensuring their reliable operation and making them indispensable assets in organizations relying on complex computing infrastructure.



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CpET144 – Analog and Digital Electronics (3 units)

Analog and Digital Electronics is a fundamental course that provides students with a comprehensive understanding of electronic principles and their applications. This course covers a range of vital topics, including electronic components, circuit analysis, digital logic, and signal processing. The intended learning outcomes involve the ability to comprehend both analog and digital electronic systems, analyze electronic circuits, design and troubleshoot electronic circuits, and apply electronic principles to real-world problems. By the end of this course, students will be well-prepared to work with a wide array of electronic devices and systems, ensuring their optimal performance, and making them proficient in roles related to electronics design, maintenance, and engineering. Analog and Digital Electronics develop problem-solving, critical thinking, and adaptability, vital for students seeking careers in the field of computer engineering technology. This course prepares the students to bridge the gap between electronic theory and practical application, making them well-rounded professionals who can contribute to the development and maintenance of electronic systems in diverse industries.

GEd 103 - Life and Works of Rizal (3 units)

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

SciET142 Physics (4 units)

This course is designed to provide students with a foundational understanding of key physical principles applicable to engineering disciplines. Covering classical mechanics, thermodynamics, electromagnetism, and optics, the course emphasizes the practical application of physics concepts in engineering technology. Students will explore the laws governing motion, energy, and forces, as well as delve into topics such as heat transfer, electrical circuits, and wave phenomena. Through a combination of theoretical lectures, hands-on experiments, and problem-solving exercises, students will develop the analytical and critical thinking skills necessary to tackle real-world engineering challenges. The course aims to instill a deep appreciation for the role of physics in engineering, preparing students to apply these principles effectively in their future careers.

Computer Aided Design (2 units)

This course is intended to develop the students' knowledge about basic computer aided design. The course work is designed to introduce new users to the software used for drafting. Introduction to drafting will also be presented. At the completion of this course the student should be able to print out a simple construction drawing which conforms to industry accepted drafting standards using the AutoCAD program. The course helps students to develop their skills in the field of technology and to be more competitive locally and abroad

NSTP 121 - National Service Training Program 2 (3 units)

The National Service Training Program 2 (NSTP 102). Complements knowledge learned from NSTP 101. It is the application and implementation of NSTP Law, which focuses on participation in community development. While NSTP 101 provides the backdraft and theoretical framework of the program, NSTP 102 is the continuation and validation phase. It is designed to equip and empower students with the fundamentals of project identification, planning and implementation in pursuit of contributing to the upliftment of the general welfare and the quality of life of the people



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in the community through enhancement, in particular, of the school and community facilities. Its advocacy is related to the protection and preservation of the environment, as well as improvement of lives, health and safety of the populace through the promotion of risk reduction, peace-making process, safety, recreation and morals of the citizenry.

PATHFit 2 - Exercise-based Fitness Activities (2 units)

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

First Year – Midterm Semester Courses

BET 143 Occupational Health and Industrial Safety Management (3 units)

This course provides engineering technology students with a comprehensive understanding of occupational health and industrial safety management within various engineering and industrial settings, with a specific emphasis on the application of engineering standards and codes. The curriculum covers the identification, assessment, and mitigation of workplace hazards to ensure the well-being of employees and the sustainable operation of industrial facilities, aligned with established engineering standards.

GEEd 104 - The Contemporary World (3 units)

This course introduces the students to the contemporary world by examining the multifaceted phenomenon of globalization. Using various disciplines of the social sciences, it examines the economic, social, political, technological and other transformations that have created an increasing awareness of 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.

MathET141 Differential Calculus for BET (3 units)

This Differential Calculus for BET course for Engineering Technology explores fundamental calculus concepts essential for solving engineering problems. Topics cover functions, derivatives, rules of differentiation, and their applications in engineering scenarios. The course also includes an introduction to multivariable calculus, integration, and basic differential equations. The goal is to equip students with practical problem-solving skills, laying a foundation for success in their engineering careers and preparing them for advanced calculus studies



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Second Year – First Semester Courses

CpET241 – Microprocessor Systems (3 units)

Microprocessor Systems is a pivotal course in the Bachelor of Computer Engineering Technology program which offers students an in-depth exploration of microprocessor-based systems. This course covers microcontroller architecture, assembly language programming, real-time operating systems, and practical skills for designing and implementing embedded systems. In a world increasingly reliant on embedded technology, this course equips students with the knowledge and capabilities essential for working with microcontroller-based applications. The intended learning outcomes encompass a comprehensive understanding of microprocessor architecture, proficiency in assembly language programming, expertise in interfacing microcontrollers with peripheral devices, the ability to design efficient embedded systems, skills in real-time programming, and hands-on experience through practical project development. By the end of this course, students will be prepared to work with microcontroller-based systems, contributing to the development of responsive and innovative embedded solutions in diverse fields including but not limited to automotive technology, robotics, industrial control, and consumer electronics. This course not only fosters technical expertise but also encourages problem-solving and critical thinking, nurturing students' adaptability to the dynamic technology landscape.

CpET242 – Networking I - Introduction to Networking Technology (3 units)

Networking I - Introduction to Networking Technology is a foundational course within the Bachelor of Computer Engineering Technology program, designed to provide students with a comprehensive understanding of networking fundamentals. This course covers essential topics such as network architectures, protocols, and design principles, offering students insights into the world of computer networks. The intended learning outcomes include grasping core networking concepts, demonstrating the ability to design and configure basic network topologies, understanding network protocols and services, and effectively troubleshooting common network issues. This course equips students with a strong foundation in networking, enabling them to participate in the setup and management of local area networks (LANs) and prepare for more advanced networking courses. By the end of Networking I, students will have a solid comprehension of network essentials and the skills to configure and maintain simple network infrastructures. This foundational knowledge is essential for students aspiring to pursue careers in network administration, security, or other network-related roles, as well as for those who seek a deeper understanding of the digital communication systems that underpin the modern technological landscape.

CpET243 – System Analysis and Design (3 units)

System Analysis and Design is a pivotal course within the Bachelor of Computer Engineering Technology program, focusing on the critical processes of analyzing, designing, and developing efficient and effective computer-based systems. This course covers the entire system development life cycle, from understanding business requirements to creating a comprehensive system design. The intended learning outcomes encompass the ability to analyze business needs, create system requirements, model system components, apply design principles, and document system specifications. By the end of this course, students will be equipped with the skills to lead and contribute to projects involving system analysis, design, and development, ensuring that technology solutions align with organizational needs and goals. System Analysis and Design not



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only nurtures technical proficiency but also encourages critical thinking, problem-solving, and effective communication, essential for students aspiring to excel in roles related to software engineering, system analysis, or IT project management. This course plays an important role in preparing students to bridge the gap between technology and the business world, making them invaluable assets in today's digital landscape where effective systems development is crucial for organizational success.

Litr 102 - ASEAN Literature (3 units)

This course introduces students to fundamental prose and poetry from across Asia. These literary works shape awareness and viewpoints among people in ASEAN. It orients the learners on the diverse culture the members' states have which nurture and build their identities as states and identity as a region as the learners find commonality in the diversity. More so, this course opens awareness of being part of a region to embrace the ASEAN identity through literature.

GEd 105 - Readings in Philippine History (3 units)

This course analyzes Philippines history from multiple perspectives through the lens of selected primary sources. Students are expected to do content and context analysis such as the author's background and main arguments, compare different points of view, identify biases and examine the evidence presented in the document. The discussion will tackle traditional topics in history and other interdisciplinary themes that will deepen and broaden the students' understanding of Philippine political, economic, cultural, social, scientific and religious history. The end goal is to develop the historical and critical consciousness of the students so that they will become versatile, articulate, broadminded, morally upright and responsible citizens.

MathET241 - Integral Calculus for BET (3 units)

This course in Integral Calculus for BET for Engineering Technology is designed to expand on the mathematical foundations established in Differential Calculus for BET, providing students with a deeper understanding of integral concepts and their applications in engineering contexts. Students will explore topics such as definite and indefinite integrals, the fundamental theorem of calculus, techniques of integration, and applications of integration in engineering, including areas under curves, volumes of solids of revolution, and work problems. The course aims to equip engineering technology students with the analytical tools necessary for solving complex engineering problems and making informed decisions in their future careers. Practical applications and real-world problem-solving will be emphasized throughout the course, ensuring students can apply Integral Calculus for BET effectively in engineering scenarios.

PATHFit 3 - Traditional and Recreational Games (2 units)

(Name of activity) is a (nature of the activity/game objective). It involves the fundamental techniques that include _____. Through skills training, exercise drills, game play and independent or self-directed PAs, fitness levels will be enhanced. In conjunction with this, fitness levels, PA participation and dietary/eating patterns are evaluated to monitor one's progress and achievement of personal fitness and dietary goals.



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Second Year – Second Semester Courses

CpET244 – Networking II - Internetworking with Routers and Switches (3 units)

Networking II - Internetworking with Routers and Switches is an advanced course within the Bachelor of Computer Engineering Technology program, building upon the foundational knowledge acquired in Networking I. This course is designed to provide students with a deep understanding of network infrastructure components, with a specific focus on routers and switches. It covers advanced topics such as routing protocols, network design, router and switch configuration, and management of complex network topologies. The intended learning outcomes encompass a comprehensive understanding of router and switch operation, proficiency in configuring and optimizing these devices for specific network requirements, knowledge of routing protocols and their application, and the ability to troubleshoot and maintain intricate network infrastructures. Students will gain the skills necessary to design, implement, and manage complex internetworks, making them adept network administrators and engineers.

Upon completion of Networking II, students will be well-prepared to handle the intricacies of router and switch configuration and manage sophisticated network topologies. This knowledge and expertise are invaluable for students seeking careers in network design, administration, or engineering, as well as for those aspiring to take on leadership roles in network infrastructure management. This course equips students to contribute to the development and maintenance of robust and secure network environments, which are the backbone of modern digital communication.

CpET245 – Multimedia Systems (Visual Graphics & Web Development) (3 units)

Multimedia Systems (Visual Graphics & Web Development) is a dynamic and interdisciplinary course designed to equip students with the skills and knowledge needed to create engaging and interactive multimedia content for various applications. This course encompasses a range of critical topics, including visual graphics design, web development, user experience (UX) design, multimedia content creation, and interactive web applications. The intended learning outcomes encompass the ability to design captivating visual graphics, develop responsive and user-friendly websites, create multimedia content, and understand user experience principles. By the end of this course, students will be well-prepared to contribute to the development of visually compelling and interactive digital content, making them proficient in roles related to web development, graphic design, multimedia production, and user interface design.

Multimedia Systems develop among the students the creativity, critical thinking, and the ability to effectively communicate through multimedia, all essential for students seeking careers in the creative and technology-driven industries. This course plays a pivotal role in preparing students to bridge the gap between technology and creativity, making them well-rounded professionals who can harness the power of visual graphics and web development to engage and inform audiences in today's digital landscape.

CpET246 – Operating Systems (3 units)

Operating Systems is a core course dedicated to providing students with a profound understanding of computer operating systems. This course covers a wide array of topics, including operating system architecture, process management, memory management, file systems, and system



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security. The intended learning outcomes encompass the ability to comprehend operating system functionality, configure and manage operating system environments, analyze and optimize system performance, and implement security measures. By the end of this course, students will be well-prepared to manage and maintain computer operating systems, ensure system reliability, and troubleshoot issues, making them proficient in roles related to system administration, software development, and IT infrastructure management.

Operating Systems not only impart technical expertise but also cultivate problem-solving, critical thinking, and adaptability, critical skills for students seeking careers in the dynamic field of computer engineering technology. This course equips students to interact effectively with computer systems, ensuring their optimal performance and security, and making them invaluable assets in organizations reliant on complex computing environments.

GAD 101 - Gender and Society (3 units)

This three-unit course focuses into the concepts, principles, and approaches related to understanding gender as a social construction. It explores the multifaceted role of gender across various aspects of societal life. Topics include gender inequality, gender mainstreaming, and their impact on our country's social fabric. By examining these critical issues, students gain insights into fostering an effective gender-responsive society

BET 241 - Materials Selection & Testing (3 units)

BET 241 is a comprehensive course that delves into the principles and practices of materials selection and testing within the field of engineering technology. Students will explore the critical processes involved in choosing materials for engineering applications and gain hands-on experience in testing and evaluating the mechanical properties of materials. The course emphasizes the integration of theoretical knowledge with practical skills to equip students with the expertise needed for informed materials decision-making.

GEEd 106 - Purposive Communication (3 units)

Purposive Communication develops students' communicative competence and enhances their cultural and intercultural awareness through multimodal tasks. These provide them opportunities for communicating effectively and appropriately to a multicultural audience in a local or global context, in a physical or virtual environment. 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 other 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.

MathET242 - Probability and Statistics (3 units)

This course is designed to provide engineering technology students with essential tools for effective decision-making and problem-solving in engineering applications. Covering probability theory, descriptive statistics, inferential statistics, and regression analysis, the course emphasizes practical applications in areas such as quality control, experimental design, and reliability analysis. Students will learn to analyze and interpret data, make informed decisions based on statistical insights, and communicate findings effectively. Through a variety of instructional methods, this



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course prepares engineering technology students to apply probability and statistics in real-world engineering scenarios, laying the groundwork for more advanced studies in the field.

PATHFit 4 - Traditional and Recreational Games (2 units)

(Name of activity) is a (nature of the activity/game objective). It involves the fundamental techniques that include _____. Through skills training, exercise drills, game play and independent or self-directed PAs, fitness levels will be enhanced. In conjunction with this, fitness levels, PA participation and dietary/eating patterns are evaluated to monitor one's progress and achievement of personal fitness and dietary goals.

Third Year – First Semester Courses

CpET341 – Data Management (3 units)

Introduction to Data Management is a fundamental course in the Bachelor of Computer Engineering Technology program, designed to provide students with a comprehensive understanding of data management principles and practices. This course covers core topics, including data modeling, database design, data manipulation, and database management systems. The intended learning outcomes encompass the ability to comprehend data management concepts, create and optimize database structures, perform data querying and manipulation, and implement data security measures. By the end of this course, students will be well-prepared to design, maintain, and manage databases, ensuring the effective organization and utilization of data, and making them proficient in roles related to database administration, data analysis, and software development.

Introduction to Data Management equips students with technical skills and fosters problem-solving, critical thinking, and attention to data quality, vital for students aspiring to excel in the field of computer engineering technology. This course prepares students to leverage data as a strategic asset and contribute to the efficient operation and decision-making processes of organizations in the digital age.

CpET342 – Networking III - Networking Infrastructure Security (3 units)

Networking III - Networking Infrastructure Security is an advanced course designed to provide students with a deep understanding of network security principles and practices. This course delves into critical topics, including network threats and vulnerabilities, encryption, firewall configuration, intrusion detection systems, and security best practices. The intended learning outcomes encompass the ability to identify network security risks, design and implement security measures, configure firewalls and intrusion detection systems, and develop incident response strategies. By the end of this course, students will be well-prepared to safeguard network infrastructures, protect against cyber threats, and ensure the integrity and confidentiality of digital data, making them proficient in roles related to network security, cybersecurity, and information technology management.

Networking III fosters critical thinking, problem-solving, and an awareness of evolving security threats, vital for students seeking careers in the realm of computer engineering technology. This course plays a significant role in preparing students to proactively secure digital assets and



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infrastructure, making them invaluable assets in a world where the protection of digital information is paramount.

CpET343 – Embedded Systems (3 units)

Embedded Systems is a fundamental course dedicated to providing students with a comprehensive understanding of the design, development, and application of embedded systems. This course covers a range of core topics, including microcontroller architecture, real-time programming, sensor interfacing, and the creation of responsive and efficient embedded systems. The intended learning outcomes encompass the ability to comprehend embedded system design principles, configure microcontrollers, interface with sensors and peripheral devices, develop real-time applications, and troubleshoot embedded systems. By the end of this course, students will be well-prepared to create and manage embedded systems, ensuring their reliability and responsiveness, and making them proficient in roles related to embedded system development, IoT, and robotics.

Embedded Systems impart technical skills and foster critical thinking, problem-solving, and adaptability, vital for students seeking careers in the field of computer engineering technology. The significance of this course lies in its ability to equip students with the necessary skills to effectively utilize embedded technology and make valuable contributions to the advancement of new solutions across many industries, ranging from consumer electronics to industrial automation.

GEEd 107 - Ethics (3 units)

Ethics deals with principles of ethical behavior in modern society at the new level of the person, society, and in interaction with the environment and other shared resources (CMO 20 s 2013). Morality pertains to the standards of right and wrong that an individual originally picks up from the community. The course discusses the context and principles of ethical behavior in modern society at the level of individual, society, and in interaction with the environment and other shared resources. The course also teaches students to make moral decisions by using dominant moral frameworks and by applying a seven-step moral reasoning model to analyze and solve moral dilemmas.

GEEd 108 - Art Appreciation (3 units)

The course aims to provide students the opportunity to observe, participate in, or otherwise experience works of art in order to appreciate their role and purpose in life. Students will be exposed to various works of art, ranging from the classical art forms to modern art installations, performance art, indie films, enhanced e-books and multimedia aesthetics. These works of art will be examined from an aesthetic point of view and also as reflections or critiques of the societies that produced them. The course will thus build upon and hone the skills of understanding, critical appreciation and expression of one's views. The course Art Appreciation (under the new GE Curriculum) is aimed at further strengthening the youth's awareness and deep appreciation for the arts. The course shall serve as a continuation of the Subject Contemporary Arts which was already taken in Senior High School. Apart from focusing on Philippine Arts, this course shall further try to situate the local arts in the global perspective and compare its status to standard of arts in the global arena.

BET 341 - Quality Control and Assurance (3 units)



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This course is a comprehensive course designed for Engineering Technology students, focusing on the principles and practices of Quality Control and Assurance (QA/QC) within various engineering disciplines. This course equips students with the knowledge and skills necessary to ensure and enhance the quality of products and processes in engineering applications. Emphasis is placed on understanding quality standards, implementing control measures, and establishing assurance protocols to meet industry and regulatory requirements.

BET 342 - Technopreneurship for BET (3 units)

Creating a new business is a challenging and complex task most especially to the industrial technology graduates. The road to entrepreneurial success is long, winding and strewn with pitfalls, obstacles and blind turns. The risks of starting a new business are high, as illustrated by the high failure rates for new ventures. However, as is always the case, the rewards are commensurate with the risk: in addition to the psychic rewards of starting a business. Future technologists should be guided through understanding the process, challenges, risks and rewards of starting up a new business.

BET 343 - Technology Capstone Project 1 (3 units)

This course is designed to provide a sound foundation in research and development methodologies, emphasizing their significance in both industrial settings and academia. As higher education institutions adapt to the dynamic changes of the times, this course addresses the evolving needs of business and industry. The university is committed to cultivating a learning environment where technologists are not only skilled practitioners but also adept researchers.

This course empowers students with the knowledge and skills essential for conducting impactful research in the realm of technology. By incorporating probability and statistics, students gain a robust foundation for making data-driven decisions and enhancing the overall quality and reliability of their research. Through the Technology Capstone Project, students apply their learning to address real-world challenges, bridging the gap between academia and industry needs.

Third Year – Second Semester Courses

CpET344 – Internet of Things (IoT) (3 units)

This course delves into the IoT ecosystem and its various applications in engineering technologies. It is intended to provide students with a foundation in IoT principles, technology, and issues. The course covers fundamental understanding, technological exploration, programming proficiency, mastery of communication protocols, data management, exposure to hardware platforms, analysis of real-world applications, development of project skills, and a dedicated focus on security and ethics. Students who successfully complete this course will be able to understand the IoT landscape, contribute to an organization's transformation, handle security problems, and be well-prepared for significant opportunities in fields driven by IoT innovation



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CpET345 – Emerging Information and Communication Technologies (3 units)

Emerging Information and Communication Technologies is an advanced course dedicated to exploring the latest trends, innovations, and disruptive technologies in the world of information and communication. This course covers a wide array of cutting-edge topics, including the Internet of Things (IoT), 5G and beyond, artificial intelligence, quantum computing, blockchain, and other groundbreaking technologies. The intended learning outcomes encompass the ability to comprehend the fundamental principles and applications of emerging technologies, assess their potential impact on various industries, and develop innovative solutions leveraging these technologies. By the end of this course, students will be well-prepared to stay at the forefront of technological advancements, contribute to the development of innovative applications, and address the evolving needs and challenges in the fast-paced field of computer engineering technology.

Emerging Information and Communication Technologies imparts technical expertise and fosters creativity, critical thinking, and the capacity to adapt to a rapidly changing technology landscape, essential for students seeking careers in technology research, innovation, or entrepreneurship. This course serves a vital role in educating learners to advocate for the adoption of emerging technologies, resulting in a new era of digital transformation and connection in the modern world.

CpET 346 – Artificial Intelligence (3 units)

This course is designed to provide computer engineering and technology students with a comprehensive understanding of Artificial Intelligence (AI) and its applications. Students will gain hands-on experience in implementing AI techniques, with a focus on machine learning algorithms. The course covers fundamental concepts, practical applications, and ethical considerations in AI, equipping students with the knowledge and skills necessary to leverage AI technologies in computer engineering and technology fields.

GEd 109 - Science, Technology and Society (3 units)

Science and technology are amongst the most powerful forces operating in contemporary society. Yet, citizens of contemporary societies have little or no opportunity to learn how to question the power embedded in techno-scientific systems. A formal course is needed for the citizens to do such action. This course presents the analysis from historic and futuristic perspectives of the nature and role of science and technology in society and of the socio-cultural and politico-economic factors affecting the development of science and technology. This course will also introduce to the students the multiple ways in which science and technology, individuals and institutions mutually shape one another to the benefit and sometimes detriment of society. All of the topics in this course are geared toward the appreciation of the key role of science and technology in national development and the important policy issues in the scientific and technological development of the Philippines.

ES 101 - Environmental Science (3 units)

Through the integration of natural science, politics, culture, and economics with scientific principles, environmental science seeks to provide a thorough understanding of the subject. The understanding of the complex interactions that exist between people and their surroundings is a fundamental component of this course. The emphasis on environmental issues, their root causes,



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related hazards, and mitigation strategies is consistent with the engineering method of risk assessment and management. Furthermore, the investigation of substitute solutions is consistent with the engineering dedication to novelty, motivating learners to contemplate sustainable technologies as feasible substitutes.

BET 344 - Engineering Technology Ethics (3 units)

This course provides engineering technology students with a comprehensive understanding of ethical principles, professional responsibilities, and the integration of engineering standards and codes within the technological landscape. This course addresses the ethical challenges faced by engineering technologists and emphasizes the importance of adhering to established standards to ensure the safety, integrity, and societal impact of engineering and technology.

BET 345 - Industrial Operation & Management Practices (3 units)

Industrial Operation and Management Practices is a 3-unit course in operations management with statistics. It covers the relevant concepts and theories of production and operations management as well as the quantitative tools for data analysis and business decision making. It also includes industrial tours to manufacturing, production or business sites to establish a link between theory taught in a classroom and actual practical concept thus contributing to the holistic learning development of students.

By the end of the semester, the student will understand the methods, models and techniques that are used to resolve organizational difficulties equipped with the analytical skills to determine and analyze the complexity of operational management challenges in business, combined with creative thinking to generate potential solutions.

BET 346 - Engineering Technology Management (3 units)

This course provides an in-depth exploration of the multifaceted aspects of leadership, strategic management, and innovation within the dynamic realms of engineering and technology. Aimed at equipping participants with a holistic understanding of effective management practices, this course encompasses a range of topics essential for steering successful engineering projects and navigating the evolving landscape of technology-driven industries.

BET 347 - Technology Capstone Project 2 (3 units)

Technology Capstone Project 2 builds upon the foundation established in Technology Capstone Project 1, providing students with an advanced opportunity to further develop their research, innovation, and problem-solving skills within the realm of technology. This course extends the commitment to preparing students for success in both industrial settings and academia by immersing them in an intensive and collaborative capstone project experience.

Technology Capstone Project 2 is designed to provide students with an immersive and challenging experience in advanced research and development, allowing them to contribute meaningful solutions to complex technological challenges. Through this course, students not only deepen their expertise in their chosen field but also refine their abilities to innovate, collaborate, and communicate effectively, preparing them for leadership roles in technology and research.



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BET 441 – Supervised Industrial Training 1 (540 hrs) (6 units)

Supervised Industrial Training 1 (BET 441) is a hands-on way to learn new competencies and skills for a job in a genuine, or nearly actual, working environment.

Fourth Year – Second Semester Courses

BET 442 – Supervised Industrial Training 2 (540 hrs) (6 units)

Supervised Industrial Training 2 (BET 442) is a continuation of BET 441, which is a hands-on way to learn new competencies and skills for a job in a genuine, or nearly actual, working environment.

XVI. Program Advisory Council

1	Randolf B. Cabungcal	Industry
	Cooperative Development Specialist Officer	
	Municipal Government of Balayan	
2	Vhina Grace D. Coreces	Industry
	Production Engineering Planner	
	Western Digital	
3	Dr. Gina R. Eje	Faculty Stakeholder
	Associate Dean, CIT Alangilan	
	Batangas State University – Alangilan	
4	Dr. Glenn A. Caraig	Faculty Stakeholder
	Dean, CIT Malvar	
	Batangas State University - Malvar	
5	Asst. Prof. Philip D. Geneta	Faculty Stakeholder
	Program Chairperson - Lipa	
	Batangas State University - Lipa	
6.	Ms. Jean Karla M. Castillo	Faculty Stakeholder
	Head, Research and Extension Services	
	Batangas State University - Balayan	
7.	Mr. Rexon Hernandez	Faculty Stakeholder
	Extension Coordinator	



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6	Dr. Luisa P. Macatangay	Accredited Professional Organization representative
	National Board of Trustee	
	Philippine Society of Information Technology Educators (PSITE)	
7	Diana Lee F. Alza	Student Stakeholder
	21-01780@g.batstate-u.edu.ph	
8	Losmagos, Shenna May	Student Stakeholder
	20-04672@g.batstate-u.edu.ph	
9	Luie Ceasar Ian M. Calanog	Alumni
	District IT Support Officer	
	DPWH Batangas 1st District Engineering Office	
10	Lannie M. Malle	Alumni
	Network Engineer	
	Accenture	

XVII. Profile of the Faculty

CORE FACULTY
Geneta, Philip D. Associate Professor I Doctor of Technology (21 units)
GUEST LECTURERS
Anacio, Mhel V. Lecturer I Bachelor of Science in Computer Engineering Master in Information Technology (12 units)
Marabe, Jhane Allysa Nicole M. Lecturer I Bachelor of Industrial Technology major in Computer Technology Master of Technology (18 units)
GENERAL EDUCATION
Bongares, Maricel B. Lecturer I Bachelor of Science in Chemical Engineering Master in Business Administration (39 units)



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Calvelo, Shiela Marie P. Lecturer I Bachelor of Secondary Education major in MAPEH
Garcia, Jeremiah R. Lecturer I Bachelor of Science in Chemical Engineering Master in Business Administration
Macalinga, Angelica Mae C. Lecturer I Bachelor of Secondary Education major in Social Studies Master of Arts in Education major in Social Studies (9 units)
Perez, Gladys P. Lecturer I Bachelor of Science in Mathematics Master of Science in Mathematics (24 units)

XVIII. Program Administration

Batangas State University – Lipa Campus
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Dr. TIRSO A. RONQUILLO
University President
(By virtue of BoR Resolution No.135, S. 2022)

Dr. EUFRONIA M. MAGUNDAYAO
Vice Chancellor for Academic Affairs

Dr. EUFRONIA M. MAGUNDAYAO
Dean, CET

Mr. PHILIP D. GENETA
Program Chair



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XIX. Outcomes Mapping

1. RELATIONSHIP BETWEEN PEO AND MISSION STATEMENT

RELATIONSHIP BETWEEN PEO AND MISSION STATEMENT					
PEO1	PEO STATEMENTS	Innovation	Multidisciplinary Research	Community & Industry Partnerships	Sustainable Development
PEO1	Successful Professional Practice	x	x	x	
PEO2	Professionalism	x		x	x
PEO3	Technological Advancement	x	x		x

Rationale

The Program Educational Objectives (PEOs) define the desired outcomes of a program and guide program development, assessment, and improvement, while the mission statement defines the overall purpose of the program and how it aims to achieve it. The PEOs in this case are aligned with the program's mission statement, emphasizing innovation, multidisciplinary research, community and industry partnerships, professionalism, and sustainable development. Each PEO focuses on different aspects, including successful professional practice, professionalism, and technology advancement, all of which contribute to developing graduates who can positively impact society and the environment.

2. RELATIONSHIP BETWEEN SO AND PEO

RELATIONSHIP BETWEEN SO AND PEO				
SO	SO STATEMENTS	Technologists	Professionalism	Technology Advancement
		PEO1	PEO2	PEO3
SO1	Problem Analysis	x		x
SO2	Design/Development of Solutions	x		x
SO3	Communication		x	
SO4	Investigation	x		
SO5	Leadership and Teamwork	x		
SO6	Ethics and Professionalism		x	
SO7	Lifelong Learning		x	
SO8	Social and National Responsibility		x	



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Rationale

The relationship between program educational objectives (PEOs) and student outcomes (SOs) is crucial to ensure that students acquire the necessary knowledge, skills, and competencies to succeed in their chosen profession. The alignment between PEOs and SOs is particularly important, as it specifies the desired outcomes of the program.

PEO 1 (Successful Professional Practice) aligns with SO1 (Problem Analysis), SO2 (Design/Development of Solutions), SO4 (Investigation), and SO5 (Leadership and Teamwork). PEO 2 (Professionalism) aligns with SO3 (Communication), SO6 (Evaluation of the Problem), and SO7 (Communication). PEO 3 (Technology Advancement) aligns with SO1 (Problem Analysis) and SO2 (Design/Development of Solutions).

This alignment implies that students who have mastered these SOs will be able to solve problems, design effective solutions, evaluate problems critically, communicate their ideas effectively, engage in lifelong learning, act ethically and professionally, and contribute to the betterment of society and the nation.



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3. RELATIONSHIP BETWEEN SO AND IGA

RELATIONSHIP BETWEEN SO AND IGA									
SO	SO STATEMENTS	Knowledge Competence	Creativity and Innovation	Critical and Systems Thinking	Communication	Lifelong Learning	Leadership, teamwork, and interpersonal skills	Global Outlook	Social and National Responsibility
		IGA1	IGA2	IGA3	IGA4	IGA5	IGA6	IGA7	IGA8
SO1	Problem Analysis	x		x					
SO2	Design/Development of Solutions						x		
SO3	Communication				x				
SO4	Investigation		x						
SO5	Leadership and Teamwork			x					
SO6	Ethics and Professionalism					x			
SO7	Lifelong Learning								x
SO8	Social and National Responsibility							x	

Rationale

The process of mapping student outcomes to program educational objectives plays a crucial role in ensuring that the curriculum meets the needs of the industry and equips graduates with the necessary competencies required by employers. The student outcomes encompass a range of skills and knowledge, including technology problem analysis, design/development of solutions, communication, investigation, leadership and teamwork, ethics and professionalism, lifelong learning and social and national responsibility. These outcomes are then mapped to specific program educational objectives, such as knowledge competence, critical and system thinking, creativity and innovation, leadership, teamwork and interpersonal skills, communication, lifelong learning, ethics and professionalism, and global outlook. The mapping process ensures that each student outcome is aligned with a specific program educational objective and is covered in the curriculum, helping students to acquire a broad range of competencies and skills necessary for success in the workplace.



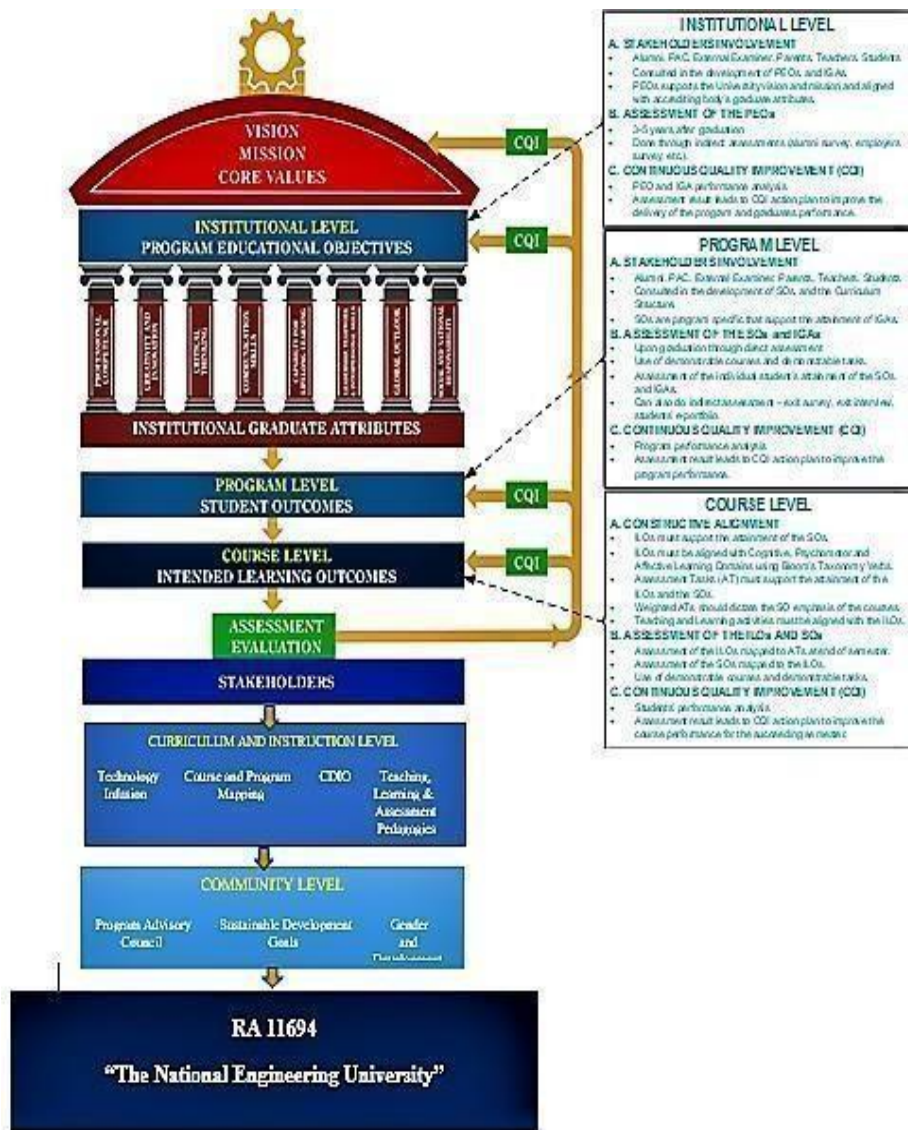
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XX. *Batangas State University Enhanced OBE Framework*



(Revised as of January 2023)



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Attachments



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Comparison of PCS with CMO of the Program and ABET-ETAC

Specific Areas of the Program Curriculum			CMO No. 13 S.2023 BIndTech	BatStateU	ABET-ETAC		Remarks
				Proposed - BCPET	General Criteria	Program Criteria (PC)	
Required General Education							
No.	Course Code	Course Title	Units	Units			
1	GEEd 101	Understanding the Self	3	3			
2	GEEd 102	Mathematics for the Modern World	3	3			
3	GEEd 104	The Contemporary World	3	3			
4	GEEd 105	Readings in Philippine History	3	3			
5	GEEd 106	Purposive Communication	3	3			
6	GEEd 107	Ethics	3	3			
7	GEEd 108	Art Appreciation	3	3			
8	GEEd 109	Science, Technology, and Society	3	3			
		Sub-total	24	24			
Mandated Courses							
1	GEEd 103	Life and Works of Rizal	3	3			
		Sub-total	3	3			
Elective Course							
1	Litr102	ASEAN Literature	-	3			
2	GAD101	Gender and Society	-	3			
3	ES101	Environmental Science	-	3			
	GE Elective 1	GE Elective 1	3	-			
	GE Elective 2	GE Elective 2	3	-			
	GE Elective 3	GE Elective 3	3	-			
		Sub-total	9	9			
PATHFit & NSTP							
1	PATHFit 1	Movement Competency Training	2	2			
2	PATHFit 2	Exercise-based Fitness Activities	2	2			
3	PATHFit 3	Traditional and Recreational Games	2	2			
4	PATHFit 4	Team Sports (Basketball and Volleyball)	2	2			
5	NSTP 111	National Service Training Program 1	3	3			
6	NSTP 121	National Service Training Program 2	3	3			
		Sub-total	14	14			
Math and Sciences Courses							



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1	MathET140	Comprehensive Math (Algebra, Trigo, Analytic Geom)	5	0	M.b	
2	MathET141	Differential Calculus	0	3	M.b	
3	MathET142	Integral Calculus	0	3	M.b	
4	MathET143	Probability and Statistics	0	3	M.b	
5	SciET141	Chemistry	3	4	PNS	
6	SciET142	Physics	3	4	PNS	
		Sub-total	11	17		
Management and Tool Courses						
1	BET141	Production Drawing	-	3	DSC.d	
2	BET142	Computer Aided Design	-	2	DSC.b	
3	BET143	Occupational Health and Industrial Safety Management	-	3	DSC.d	PC.e
4	BET341	Quality Control and Assurance	3	3	DSC.d	PC.e
5	BET241	Materials Selection & Testing	-	3		PC.e
6	BET344	Engineering Technology Ethics	-	3	OC	
7	BET342	Technopreneurship for BET	3	3		PC.h
8	BET345	Industrial Operation & Management Practices	3	3	DSC.d	PC.f
9	BET 346	Engineering Technology Management	-	3	DSC.d	PC.f
10	CpET140	Computer Programming I	3	3		PC.a
11		Introduction to Information Technology	3	-		
12		Industrial Drawing	2	-		
13		Materials Technology Management	3	-		
14		Industrial Psychology	3	-		
15		Production Management	3	-		
16		Foreign Language	3	-		
		Sub-total	29	29		
Professional Courses						
1	CpET141	Electrical and Electronics Principles		3		PC.a
2	CpET142	Computer Programming II		3		PC.a, M.b
3	CpET143	Computer Hardware Systems		3		PC.c
4	CpET144	Analog and Digital Electronics		3		PC.a
5	CpET241	Microprocessor Systems		3		
6	CpET242	Networking I - Introduction to Networking Technology		3		PC.a
7	CpET243	System Analysis and Design		3		PC.c
8	CpET244	Networking II - Internetworking with Routers and Switches		3		PC.a



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9	CpET245	Multimedia Systems (Visual Graphics & Web Development)	3			
10	CpET246	Operating Systems	3			PC.a
11	CpET341	Data Management System	3			PC.c, PC.d
12	CpET342	Networking III - Networking Infrastructure Security	3			PC.a, PC.d, PC.e
13	CpET343	Embedded Systems	3			PC.c, PC.e
14	CpET344	Internet of Things (IoT)	3			PC.c
15	CpET345	Emerging Information and Communication Technologies	3			PC.c
16	CpET346	Artificial Intelligence	3			
17	BET343	Technology Capstone Project 1	3		IC	
18	BET347	Technology Capstone Project 2	3		IC	
19	BET441	Supervised Industrial Training 1	6		CE,DSC.e	PC.e
20	BET442	Supervised Industrial Training 2	6		CE,DSC.e	PC.e
		Sub-total	65	66		
		Grand Total	155	162		

Note: ABET-ETAC General Criteria	
Code	Mathematics - The curriculum provides
M.a	a. For an Associate program, the application of algebra and trigonometry appropriate to the student outcomes and the discipline.
M.b	b. For a Baccalaureate program, the application of integral and Differential Calculus for BET or other mathematics above the level of algebra and trigonometry appropriate to the student outcomes and the discipline.
	Discipline Specific Content (DSC) - The curriculum must focus on the applied aspects of science and engineering and must
DSC.a	a. Represent at least one-third, but no more than two-thirds of the total credit hours for the curriculum.
DSC.b	b. Include a technical core preparing students for increasingly complex technical specialties later in the curriculum.
DSC.c	c. Develop student competency in the discipline.
DSC.d	d. Include design; appropriate to the discipline such as: industry and engineering standards and codes; public safety and health; and local and global impact of engineering solutions on individuals, organizations and society.
DSC.e	e. Combine technical, professional, and general education components to prepare students for a career, further study, and lifelong professional development.
OC	Other Content - Include topics related to professional and ethical responsibilities, diversity and inclusion awareness,
PNS	Physical and Natural Science - The program provides physical or natural science content of the curriculum appropriate to the discipline and includes laboratory experiences.



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IC	Integration of Content - Baccalaureate degree programs must provide a capstone or other integrating experiences that develop student competencies in applying both technical and nontechnical skills in problem solving.
CE	Cooperative Education - When used to satisfy prescribed elements of these criteria, cooperative internships or similar experiences must include an appropriate academic component evaluated by the program faculty.
Program Criteria (PC)	
PC.a	a. application of electric circuits, computer programming, associated software applications, analog and digital electronics, microcontrollers, operating systems, local area networks, and engineering standards to the building, testing, operation, and maintenance of computer systems and associated software systems;
PC.b	b. application of natural sciences and mathematics at or above the level of algebra and trigonometry to the building, testing, operation, and maintenance of computer systems and associated software systems;
PC.c	c. analysis, design, and implementation of computer system hardware and software;
PC.d	d. application of project management techniques to computer systems; and
PC.e	e. utilization of statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of computer systems and networks.

Student Outcomes Mapping

Proposed BET SO to BIndTech SO

No.	BIndTech SO								
	1	2	3	4	5	6	7	8	
BET SO	1	✓							
	2		✓						
	3				✓				
	4			✓					
	5					✓			
	6						✓		
	7							✓	✓
	8		✓						

Proposed BET SO to ABET-ETAC SO

No.	ABET ETAC SO					
	1	2	3	4	5	
BET SO	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓
	6		✓			
	7				✓	
	8		✓			