Republic of the Philippines
BATANGAS STATE UNIVERSITY
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College of Engineering Technology

CURRICULUM
Bachelor of Computer Engineering Technology

CMO Reference No. 86, S. 2017, 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

Curriculum Description

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.

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
	KPI 3	Graduates are actively involved in designing of new systems and processes and/or providing consultancy and advice to either internal or external customers.
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.
	KPI 4	Graduates have managed continual quality improvement.

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

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.

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 culture.

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.

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Curriculum Components

	Courses		Units	Total
	Math and Sciences Courses			**19 units**
1	MathET140	Comprehensive Math (Algebra, Trigonometry, Analytic Geometry)	0	
2	MATH101	Differential Calculus	4	
3	MATH102	Integral Calculus	4	
4	AI 102	Probability and Statistics for AI	3	
5	SciET141	Chemistry	4	
6	PHY101	Physics for BET	4	
	Applied Courses			**32 units**
1	AI 103	Machine Learning and Neural Networks	3	
2	CpET140	Computer Programming	3	
3	BET141	Production Drawing	3	
4	BET142	Computer Aided Design	2	
5	BET143	Occupational Health and Industrial Safety Management	3	
6	BET 241	Materials Selection & Testing	3	
7	BET 341	Quality Control and Assurance	3	
8	BET 342	Technopreneurship for BET	3	
9	BET344	Engineering Technology Ethics	3	
10	BET 345	Industrial Operation & Management Practices	3	
11	BET 346	Engineering Technology Management	3	
	Professional Courses			**64 units**
1	CpET141	Electrical and Electronics Principles	3	
2	CpET142	Computer Programming II	3	
3	CpET143	Computer Hardware Systems	3	
4	CpET144	Analog and Digital Electronics	3	
5	CpET240	Digital Systems and Microprocessors	4	
6	CpET242	Networking I – Introduction to Networking Technology	3	
7	CpET243	System Analysis and Design	3	
8	CpET244	Networking II – Internetworking with Routers and Switches	3	
9	CpET245	Multimedia Systems (Visual Graphics & Web Development)	3	
10	CpET246	Operating Systems	3	
11	CpET341	Data Management System	3	
12	CpET342	Networking III – Networking Infrastructure Security	3	
13	CpET343	Embedded Systems	3	
14	CpET344	Internet of Things (IoT)	3	
15	CpET345	Emerging Information and Communication Technologies	3	
16	CpET346	Artificial Intelligence	0	
17	BET343	Technology Capstone Project 1	3	
18	BET347	Technology Capstone Project 2	3	
19	BET441	Supervised Industrial Training 1	6	
20	BET442	Supervised Industrial Training 2	6	

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		Required General Education		24 units
1	GEd 101	Understanding the Self	3	
2	GEd 102	Mathematics in the Modern World	3	
3	GEd 104	The Contemporary World	3	
4	GEd 105	Readings in Philippine History	3	
5	GEd 106	Purposive Communication	3	
6	GEd 107	Ethics	3	
7	GEd 108	Art Appreciation	3	
8	GEd 109	Science, Technology, and Society	3	
		Mandated Courses		**3 units**
1	GEd 103	Life and Works of Rizal	3	
		General Education Electives		**9 units**
1	AI 101	Linear Algebra	3	
2	GAD101	Gender and Society	3	
3	ES101	Environmental Science	3	
4	Litr102	Asean Literature	0	
		PATHFit & NSTP		**14 units**
1	PATHFit 1	Movement Competency Training	2	
2	PATHFit 2	Exercise-based Fitness Activities	2	
3	PATHFit 3	Choice of Dance, Sports, Martial Arts, Group Exercise, Outdoor, and Adventure Activities 1	2	
4	PATHFit 4	Choice of Dance, Sports, Martial Arts, Group Exercise, Outdoor, and Adventure Activities 2	2	
5	NSTP 111	National Service Training Program 1	3	
6	NSTP 121	National Service Training Program 2	3	
		Grand Total		**165 units**

SUMMARY	
Courses	**Number of Units**
Math and Sciences Courses	19
Applied Courses	32
Professional Courses	64
Required General Education	24
Mandated Courses	3
General Education Electives	9
PATHFit & NSTP	14
TOTAL	**165**

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PROGRAM OF STUDY

FIRST YEAR						
FIRST SEMESTER						
Course Code	**Course Title**	**Lec**	**Lab**	**Credit Units**	**Pre-requisite(s)**	**Co-requisite(s)**
CpET140	Computer Programming I	2	3	3		
CpET141	Electrical and Electronics Principles	2	3	3		
Ged 101	Understanding the Self	3	0	3		
Ged 102	Mathematics in the Modern World	3	0	3		
SciET141	Chemistry	3	3	4		
BET141	Production Drawing	1	6	3		
MathET140	Comprehensive Math (Algebra, Trigonometry, Analytic Geometry)	3	0	0		
PATHFit 1	Movement Competency Training	2	0	2		
NSTP 111	National Service Training Program 1	3	0	3		
	Total	**22**	**15**	**24**		

FIRST YEAR						
SECOND SEMESTER						
Course Code	**Course Title**	**Lec**	**Lab**	**Credit Units**	**Pre-requisite(s)**	**Co-requisite(s)**
CpET142	Computer Programming II	2	3	3	CpET140	
CpET143	Computer Hardware Systems	2	3	3	CpET141	
CpET144	Analog and Digital Electronics	2	3	3	CpET141	
MATH101	Differential Calculus	4	0	4	MathET140	
PHY101	Physics for BET	3	3	4	MathET140	
BET142	Computer Aided Design	1	3	2	BET141	
PATHFit 2	Exercise-based Fitness Activities	2	0	2	PATHFit 1	
	Total	**19**	**15**	**24**		

FIRST YEAR						
MIDTERM SEMESTER						
Course Code	**Course Title**	**Lec**	**Lab**	**Credit Units**	**Pre-requisite(s)**	**Co-requisite(s)**
GEd 103	Life and Works of Rizal	3	0	3		
GEd 104	The Contemporary World	3	0	3		
BET 143	Occupational Health and Industrial Safety Management	3	0	3		
	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)
CpET240	Digital Systems and Microprocessors	3	3	4	CpET144	
CpET242	Networking I – Introduction to Networking Technology	2	3	3	CpET143	
CpET243	System Analysis and Design	2	3	3		
AI 101	Linear Algebra with AI	3	0	3		
Ged 105	Readings in Philippine History	3	0	3		
MATH102	Integral Calculus	4	0	4	MATH101	
PATHFit 3	Choice of Dance, Sports, Martial Arts, Group Exercise, Outdoor, and Adventure Activities 1	2	0	2	PATHFit 1 & 2	
	Total	**18**	**9**	**22**		

SECOND YEAR						
SECOND SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
CpET244	Networking II – Internetworking with Routers and Switches	2	3	3	CpET242	
CpET245	Multimedia Systems (Visual Graphics & Web Development)	2	3	3	CpET143	
CpET246	Operating Systems	3	0	3	CpET143	
GAD101	Gender and Society	3	0	3		
BET241	Materials Selection & Testing	3	0	3		
Ged 106	Purposive Communication	3	0	3		
AI 102	Probability and Statistics for AI	3	0	3	MATH102	
PATHFit 4	Choice of Dance, Sports, Martial Arts, Group Exercise, Outdoor, and Adventure Activities 2	2	0	2	PATHFit 1 & 2	
	Total	**21**	**6**	**23**		

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Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
	THIRD YEAR					
	FIRST SEMESTER					
AI 103	Machine Learning and Neural Networks	2	3	3	AI 101, AI 102, CpET 140	
CpET341	Data Management System	2	3	3	CpET243	
CpET342	Networking III – Networking Infrastructure Security	2	3	3	CpET244	
CpET343	Embedded Systems	2	3	3	CpET240	
Ged 107	Ethics	3	0	3		
Ged 108	Art Appreciation	3	0	3		
BET341	Quality Control and Assurance	3	0	3		
BET342	Technopreneurship for BET	3	0	3		
BET343	Technology Capstone Project 1	2	3	3	CpET245	CpET341
	Total	**22**	**15**	**27**		

Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
	THIRD YEAR					
	SECOND SEMESTER					
CpET344	Internet of Things (IoT)	2	3	3	CpET342	
CpET345	Emerging Information and Communication Technologies	3	0	3		CpET344
Ged 109	Science, Technology and Society	3	0	3		
ES101	Environmental Science	3	0	3		
BET344	Engineering Technology Ethics	3	0	3		
BET345	Industrial Operation & Management Practices	3	0	3		
BET 346	Engineering Technology Management	3	0	3		
BET347	Technology Capstone Project 2	2	3	3	BET343	
	Total	**22**	**6**	**24**		

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FOURTH YEAR						
FIRST SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
BET 441	Supervised Industrial Training 1	0	540	6	BET347	
	Total	**0**	**540**	**6**		

FOURTH YEAR						
SECOND SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
BET 442	Supervised Industrial Training 2	0	540	6	BET 441	
	Total	**0**	**540**	**6**		

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