



Republic of the Philippines
BATANGAS STATE UNIVERSITY
The National Engineering University

Alangilan Campus
Golden Country Homes, Alangilan, Batangas City, Philippines 4200
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E-mail Address: cit.alangilan@g.batstate-u.edu.ph | Website Address: <http://www.batstate-u.edu.ph>

College of Engineering Technology

CURRICULUM

Bachelor of Automotive 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 Automotive Engineering Technology program is designed to prepare students with the basic knowledge and skills necessary for modern automotive workers. The increasing sophistication of automotive technology now requires workers who can use computerized shop equipment and work with electronic components while maintaining their skills with traditional hand tools. Automotive services become increasingly sophisticated in diagnosing, repairing and maintenance. The program focuses on gasoline and diesel automobiles in terms of technical know-how and skills. Understanding in different systems such as engine, electrical, electronics, power trains, under chassis components, security features and other systems. Students will engage in hands-on applications, 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 automotive 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	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.
	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				67 units
1	AET 141	Introduction to Automotive Engineering Technology	3	
2	AET 142	Sheet Metal, Tubings and Fitting Skills for Automotive Specialists	4	
3	AET 143	Automotive Electrical System and Services	4	
4	AET 144	Gasoline Engine System, Dismantling, and Rebuilding	4	
5	AET 241	Hybrid Vehicles, Computers and Electronic Fuel Injection	3	
6	AET 242	Automotive Powertrains, Under Chassis and Services	4	
7	AET 243	Gas and Arc Welding in Automotive Fabrication	2	
8	AET 244	Diesel Engine System, Dismantling and Rebuilding	3	
9	AET 245	Automotive Body Rebuilding	2	
10	AET 246	Basic Driving Education	2	
11	AET 341	Automotive Engine Performance Test and Services	3	
12	AET 342	Motorcycle Systems and Servicing	4	
13	AET 343	Automotive Thermodynamic	3	
14	AET 344	Automotive Air Conditioning System and Services	2	
15	AET 345	Automotive Shop Service Management	2	
16	AET 346	Lathe Operations for Automotive Engineering Technologist	2	
17	AET 347	Automotive Fluid Dynamics: Hydraulics and Pneumatics	2	
18	BET343	Technology Capstone Project 1	3	
19	BET347	Technology Capstone Project 2	3	
20	BET441	Supervised Industrial Training 1	6	
21	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				168 units

SUMMARY	
Courses	Number of Units
Math and Sciences Courses	19
Applied Courses	32
Professional Courses	67
Required General Education	24
Mandated Courses	3
General Education Electives	9
PATHFit & NSTP	14
TOTAL	168



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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)
AET 141	Introduction to Automotive Engineering Technology	2	3	3		
AET 142	Sheet Metal, Tubings and Fitting Skills for Automotive Specialists	2	6	4		
GEEd 101	Understanding the Self	3	0	3		
GEEd 102	Mathematics in the Modern World	3	0	3		
SciET 141	Chemistry	3	3	4		
BET 141	Production Drawing	1	6	3		
MathET 140	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	18	25		

FIRST YEAR						
SECOND SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
AET 143	Automotive Electrical System and Services	2	6	4	AET 141	
AET 144	Gasoline Engine System, Dismantling, and Rebuilding	2	6	4	AET 141	
MATH101	Differential Calculus	4	0	4	MathET140	
PHY101	Physics for BET	3	3	4	MathET140	
BET 142	Computer Aided Design	1	3	2	BET141	
PATHFit 2	Exercise-based Fitness Activities	2	0	2	PATHFit 1	
NSTP 121	National Service Training Program 2	3	0	3	NSTP 111	
	Total	17	18	23		

FIRST YEAR						
MIDTERM SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
GEEd 103	Life and Works of Rizal	3	0	3		
GEEd 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)
AET 241	Hybrid Vehicles, Computers and Electronic Fuel Injection	2	3	3	AET 143	
AET 242	Automotive Powertrains, Under Chassis and Services	2	6	4	AET 141	
AET 243	Gas and Arc Welding in Automotive Fabrication	1	3	2	AET 142	
AI 101	Linear Algebra for AI	3	0	3		
GED 105	Readings in Philippine History	3	0	3		
MATH102	Integral Calculus	4	0	4	MATH101	
CpET 140	Computer Programming	2	3	3		
PATHFit 3	Choice of Dance, Sports, Martial Arts, Group Exercise, Outdoor, and Adventure Activities 1	2	0	2	PATHFit 1 & 2	
	Total	19	15	24		

SECOND YEAR						
SECOND SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
AET 244	Diesel Engine System, Dismantling and Rebuilding	2	6	4	AET 144	
AET 245	Automotive Body Repair and Painting	1	3	2	AET 243	
AET 246	Basic Driving Education	1	3	2	AET 242	
GAD 101	Gender and Society	3	0	3		
BET 241	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	18	12	22		



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THIRD YEAR						
FIRST SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
AI 103	Machine Learning and Neural Networks	2	3	3	AI 101, AI 102, CpET 140	
AET 341	Automotive Engine Performance Test and Services	2	3	3	AET 144, AET 244,	
AET 342	Motorcycle Systems and Servicing	2	3	3	AET 141, AET 143	
AET 343	Automotive Thermodynamic	3	0	3	PHY 101	
GEd 107	Ethics	3	0	3		
GEd 108	Art Appreciation	3	0	3		
BET 341	Quality Control and Assurance	3	0	3		
BET 342	Technopreneurship for BET	3	0	3		
BET 343	Technology Capstone Project 1	2	3	3	AET 244, AET 245, AET 246	
	Total	23	12	27		

THIRD YEAR						
SECOND SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
AET 344	Automotive Air Conditioning System and Services	1	3	2	AET 241	
AET 345	Automotive Shop Service Management	2	0	2	BET 143	
AET 346	Lathe Operations for Automotive Engineering Technologist	1	3	2	AET 141, AET 142	
AET 347	Automotive Fluid Dynamics: Hydraulics and Pneumatics	1	3	2	AET 242	
GEd 109	Science, Technology and Society	3	0	3		
ES 101	Environmental Science	3	0	3		
BET 344	Engineering Technology Ethics	3	0	3		
BET 345	Industrial Operation & Management Practices	3	0	3		
BET 346	Engineering Technology Management	3	0	3		
BET 347	Technology Capstone Project 2	2	3	3	BET 343	
	Total	22	12	26		



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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		