



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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College of Engineering Technology

CURRICULUM

Bachelor of Welding and Fabrication 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 Welding and Fabrication Engineering Technology program aims to produce competent graduates who can contribute to industrialization and society's welfare. The program provides a deep understanding of welding and fabrication engineering technology and its practical applications, recognizing its critical role in societal growth. Moreover, it emphasizes the importance of theoretical understanding of welding and fabrication principles and techniques. This also integrates hands-on practical training in welding processes, metal fabrication, and related technologies.

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 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 welding and fabrication 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				65 units
1	MET 141	Measurements and Geometrics Tolerancing	3	
2	MET 142	Engineering Practice 1: Benchwork, Plumbing, and Pipefitting	4	
3	WFET 141	Shielded Metal Arc Welding (SMAW)	3	
4	WFET 142	Welding Jigs and Fixtures	3	
5	WFET 143	Metallurgy and Heat Treatment	3	
6	WFET 241	Gas (Oxy Acetylene) Welding (OAW)	3	
7	WFET 242	Gas Metal Arc Welding (GMAW)	3	
8	WFET 243	Welding Codes, Standards, and Symbols	3	
9	WFET 244	Gas Tungsten Arc Welding (GTAW)	3	
10	MET 143	Engineering Practice 2: Lathe Operation	4	
11	WFET 245	Project Management for Welding and Fabrication Engineering Technology	3	
12	WFET 341	Flux-cored Arc Welding (FCAW)	3	
13	WFET 342	Welding Science and Mechanics	3	
14	WFET 343	Statics and Strength of Materials	3	
15	WFET 344	Basic CNC Programming	3	
16	BET 343	Technology Capstone Project 1	3	
17	BET 347	Technology Capstone Project 2	3	
18	BET 441	Supervised Industrial Training 1	6	
19	BET 442	Supervised Industrial Training 2	6	
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	



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5	GEEd 106	Purposive Communication	3	
6	GEEd 107	Ethics	3	
7	GEEd 108	Art Appreciation	3	
8	GEEd 109	Science, Technology, and Society	3	
Mandated Courses				3 units
1	GEEd 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				166 units

SUMMARY	
Courses	Number of Units
Math and Sciences Courses	19
Applied Courses	32
Professional Courses	65
Required General Education	24
Mandated Courses	3
General Education Electives	9
PATHFit & NSTP	14
TOTAL	166



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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)
MET 141	Measurements and Geometrics Tolerancing	2	3	3		
MET 142	Engineering Practice 1: Benchwork, Plumbing, and Pipefitting	2	6	4		
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	18	25		

FIRST YEAR						
SECOND SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
WFET 141	Shielded Metal Arc Welding (SMAW)	1	6	3	MET 141	
ELXET 143	Digital Electronics	2	3	3	MET 142	
WFET 142	Welding Jigs and Fixtures	3	0	3		
WFET 143	Metallurgy and Heat Treatment	3	0	3	SciET141	
MATH101	Differential Calculus	4	0	4	MathET140	
PHY101	Physics for BET	3	3	4	MathET140	
BET142	Computer Aided Design	1	3	2		
PATHFit 2	Exercise-based Fitness Activities	2	0	2	PATHFit 1	
	Total	20	12	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)
WFET 241	Gas (Oxy Acetylene) Welding (OAW)	1	6	3	WFET 141, WFET 142	
WFET 242	Gas Metal Arc Welding (GMAW)	1	6	3	WFET 141, WFET 142	
WFET 243	Welding Codes, Standards, and Symbols	3	0	3	WFET 141, WFET 142	
AI 101	Linear Algebra with AI	3	0	3		
GE _d 105	Readings in Philippine History	3	0	3		
MATH102	Integral Calculus	4	0	4	MATH101	
CpET140	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)
WFET 244	Gas Tungsten Arc Welding (GTAW)	1	6	3	WFET 242	
MET 143	Engineering Practice 2: Lathe Operation	2	6	4	MET 141, MET 142	
WFET 245	Project Management for Welding and Fabrication Engineering Technology	3	0	3	WFET 243	
GAD 101	Gender and Society	3	0	3		
BET 241	Materials Selection & Testing	3	0	3		
GE _d 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	20	12	24		



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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	
WFET 341	Flux-cored Arc Welding (FCAW)	2	3	3	WFET 244	
WFET 342	Welding Science and Mechanics	3	0	3	WFET 245	
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	WFET 244, MET 143	
	Total	21	9	24		

THIRD YEAR						
SECOND SEMESTER						
Course Code	Course Title	Lec	Lab	Credit Units	Pre-requisite(s)	Co-requisite(s)
WFET 343	Statics and Strength of Materials	3	0	3	WFET 342	
WFET 344	Basic CNC Programming	2	3	3	MET 144	
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	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		