



Republic of the Philippines  
**BATANGAS STATE UNIVERSITY**

**The National Engineering University**

**Lipa Campus**

A. Tanco Drive, Marawoy, Lipa City, Batangas, Philippines 4217

Tel Nos.: (+63 43) 980-0385; 980-0387; 980-0392 to 94 loc. 3129

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**Office of the College of Industrial Technology**

**CURRICULUM**

**Bachelor of Industrial Technology**

**ELECTRONICS TECHNOLOGY**

Academic Year 2023-2024

Reference: CMO No. 20 S. 2013, CMO No. 4 S. 2018, CMO No. 39 S. 2021, CMO No. 40 S. 2021 and Based on PACUIT Proposal

**Curriculum Description**

The Electronics Technology program prepares graduates for employment in a wide variety of industries producing and/or using electrical and electronic equipment. The program provides a thorough understanding of digital electronics, circuit analysis, electronic devices, machine controls, programmable logic controllers and industrial electronics. This course also includes theoretical analysis, software simulation and hands-on applications.

**Program Objectives**

1. Successfully practice as engineering technologists for the welfare of the society.
2. Demonstrate a high degree of professionalism at all times.

**Institutional Graduate Attributes**

The student should achieve at least 75% for each IGA upon graduation.

- **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.
- **Creativity and Innovation.** Experiment with new approaches, challenge existing knowledge boundaries and design novel solutions to solve problems.
- **Critical and Systems Thinking.** Identify, define, and deal with complex problems pertinent to the future professional practice or daily life through logical, analytical and critical thinking.
- **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.
- **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.
- **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.
- **Global Outlook.** Demonstrate an awareness and understanding of global issues and willingness to work, interact effectively and show sensitivity to cultural diversity.



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- **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.

**Program Outcomes**

Graduates will have:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of technology
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science and technology
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives
- An ability to function effectively on teams
- An ability to identify, analyze and solve technical problems
- An ability to communicate effectively in writing and in oral presentation
- A recognition of the need for, and an ability to engage in lifelong learning
- An ability to understand professional, ethical and social responsibilities
- The knowledge of and respect for diverse backgrounds, contemporary societal and global issues concerning the profession
- A commitment to quality, timeliness and continuous improvement

**Curriculum Components**

Code	Courses	Units	Total
	<b>A. General Education Courses (CMO No. 20, series of 2013)</b>		<b>36 units</b>
	<b>B. Professional and Management Courses</b>		<b>32 units</b>
PM 101	Occupational Health and Safety Management	2	
PM 102	Industrial Operation & Management Practices	3	
PM 103	Production and Operations Management	3	
PM 104	Technology Research I	3	
PM 105	Materials Technology Management	3	
PM 106	Professional Ethics	3	
PM 107	Technology Research II	3	
PM 108	Manufacturing Technology	3	
PM 109	Total Quality Management	3	
PM 110	Environmental Technology	3	
ENGG 405	Technopreneurship	3	
	<b>C. Applied Sciences and Tools Courses</b>		<b>27 units</b>



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AST 111	Math for Technology	3	
AST 102	Applied Chemistry	3	
AST 105	Applied Physics	3	
AST 133	Production Drawing	2	
AST 129	Electronics Measurements	2	
AST 112	Electrical Principles	3	
AST 135	Computer Aided Design	2	
AST 134	Computer Programming	3	
AST 120	Programmable Logic Control	3	
AST 110	Data Analytics	3	
	<b>D. Major Specialization Courses</b>		<b>36 units</b>
ELX 111	Introduction to Semiconductor Devices	3	
ELX 121	Electronic Amplifiers and Integrated Circuits	3	
ELX 122	Digital Logic Circuits and Switching	3	
ELX 211	Electronics Workshop I	3	
ELX 212	Industrial Electronics	3	
ELX 221	Analog Communication Systems	3	
ELX 222	Microcomputer Systems	3	
ELX 223	Automatic Controls	3	
ELX 224	Electronics Workshop II	3	
ELX 311	Wireless and Satellite Communication Systems	3	
CPT 322	Plant Safety Network	3	
ELX 321	Totally Integrated Automatic	3	
	<b>E. Mandated Courses</b>		<b>14 units</b>
PATHFit 1	Movement Competency Training	2	
PATHFit 2	Exercise-Based Fitness Activities	2	
PATHFit 3	Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor & Adventure Activities Menu Offering: Traditional and Recreational Games	2	
PATHFit 4	Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor & Adventure Activities Menu Offering: Team Sports (Basketball and Volleyball)	2	
NSTP 111	National Service Training Program 1	3	
NSTP 121	National Service Training Program 2	3	
	<b>F. Supervised Industrial Training/OJT</b>		<b>20 units</b>



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SUMMARY	
Courses	Number of Units
General Education	36
Applied Sciences and Tool Courses	27
Professional and Management Courses	32
Specialization/Major Courses	36
Supervised Industrial Training/OJT	20
Mandated Courses (PATHFit 1-4 & NSTP)	14
<b>TOTAL</b>	<b>165</b>

**PROGRAM OF STUDY**

FIRST YEAR						
First Semester						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
AST 111	Math for Technology	3	0	3	3	None
AST 102	Applied Chemistry	2	3	3	5	None
AST 105	Applied Physics	2	3	3	5	None
AST 133	Production Drawing	1	3	2	4	None
AST 129	Electronics Measurements	1	3	2	4	None
AST 112	Electrical Principles	2	3	3	5	None
PM 101	Occupational Health and Safety Management	2	0	2	2	None
ELX 111	Introduction to Semiconductor Devices	2	3	3	5	None
NSTP 111	National Service Training Program 1	3	0	3	3	None
PATHFit 1	Movement Competency Training	2	0	2	2	None
	<b>TOTAL</b>	<b>18</b>	<b>18</b>	<b>26</b>	<b>33</b>	
FIRST YEAR						
Second Semester						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
Ged 101	Understanding the Self	3	0	3	3	None
Ged 102	Mathematics in the Modern World	3	0	3	3	None
Ged 106	Purposive Communication	3	0	3	3	None
Ged 109	Science Technology and Society	3	0	3	3	None
AST 135	Computer Aided Design	1	3	2	4	AST 133
ELX 121	Electronic Amplifiers and Integrated Circuits	2	3	3	5	ELX 111
ELX 122	Digital Logic Circuits and Switching	2	3	3	5	ELX 111
NSTP 121	National Service Training Program 2	3	0	3	3	NSTP 111
PATHFit 2	Exercise-Based Fitness Activities	2	0	2	2	PATHFit 1
	<b>TOTAL</b>	<b>20</b>	<b>9</b>	<b>25</b>	<b>26</b>	



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SECOND YEAR						
First Semester						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
Ged 103	The Life and Works of Rizal	3	0	3	3	None
Ged 104	The Contemporary World	3	0	3	3	None
Fili 101	Kontekstwalisadong Komunikasyon sa Filipino	3	0	3	3	None
PM 102	Industrial Operation & Management Practices	3	0	3	3	None
AST 134	Computer Programming	2	3	3	5	None
AST 120	Programmable Logic Control	2	3	3	5	ELX 122
ELX 211	Electronics Workshop I	2	3	3	5	ELX 121, ELX 122
ELX 212	Industrial Electronics	2	3	3	5	ELX 121
PATHFit 3	Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor & Adventure Activities Menu Offering: Traditional and Recreational Games	2	0	2	2	PATHFit 1 and 2
	<b>TOTAL</b>	<b>22</b>	<b>12</b>	<b>26</b>	<b>34</b>	
SECOND YEAR						
Second Semester						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
Fili 102	Filipino sa iba't ibang Disiplina	3	0	3	3	None
Ged 107	Ethics	3	0	3	3	None
PM 103	Production and Operations Management	3	0	3	3	None
AST 110	Data Analytics	3	0	3	3	GEd 102, AST 111
ELX 221	Analog Communication Systems	2	3	3	5	ELX 212
ELX 222	Microcomputer Systems	2	3	3	5	ELX 212
ELX 223	Automatic Controls	2	3	3	5	ELX 212
ELX 224	Electronics Workshop II	2	3	3	5	ELX 211
PATHFit 4	Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor & Adventure Activities Menu Offering: Team Sports (Basketball and Volleyball)	2	0	2	2	PATHFit 1 and 2
	<b>TOTAL</b>	<b>22</b>	<b>12</b>	<b>26</b>	<b>34</b>	



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<b>THIRD YEAR</b>						
<b>First Semester</b>						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
Litr 102	ASEAN Literature	3	0	3	3	None
Ged 105	Readings in Philippine History	3	0	3	3	None
PM 104	Technology Research I	3	0	3	3	ELX 221, ELX 222, ELX 223, ELX 224
PM 105	Materials Technology Management	3	0	3	3	ELX 221, ELX 222, ELX 223, ELX 224
PM 106	Professional Ethics	3	0	3	3	None
ELX 311	Wireless and Satellite Communication Systems	2	3	3	5	ELX 221
CPT 322	Plant Safety Network	2	3	3	5	ELX 221
<b>TOTAL</b>		<b>19</b>	<b>6</b>	<b>21</b>	<b>25</b>	
<b>THIRD YEAR</b>						
<b>Second Semester</b>						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
Ged 108	Art Appreciation	3	0	3	3	None
PM 107	Technology Research II	3	0	3	3	Regular Standing
PM 108	Manufacturing Technology	3	0	3	3	Regular Standing
PM 109	Total Quality Management	3	0	3	3	Regular Standing
PM 110	Environmental Technology	3	0	3	3	Regular Standing
ENGG 405	Technopreneurship	3	0	3	3	Regular Standing
ELX 321	Totally Integrated Automatic	2	3	3	5	ELX 311, CPT 322
<b>TOTAL</b>		<b>20</b>	<b>3</b>	<b>21</b>	<b>23</b>	
<b>FOURTH YEAR</b>						
<b>First Semester</b>						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
OJT 105	Supervised Industrial Training 1 (540hrs)	0	10	10	540	ELX 321
<b>TOTAL</b>				<b>10</b>	<b>540</b>	
<b>FOURTH YEAR</b>						
<b>Second Semester</b>						
COURSE NO.	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
OJT 106	Supervised Industrial Training 2 (540hrs)	0	10	10	540	OJT 105
<b>TOTAL</b>				<b>10</b>	<b>540</b>	

\* Regular Standing: No deficiencies on the previous semester.

**TOTAL UNITS: 165**