



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

E-mail Address: cit.lipa@g.batstate-u.edu.ph | Website Address: <http://www.batstate-u.edu.ph>

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**Office of the College of Industrial Technology**

**CURRICULUM**

**Bachelor of Industrial Technology**

**ELECTRICAL 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 program in Bachelor of Industrial Technology Major in Electrical Technology will prepare graduates with the skills necessary to enter careers in the design, application, installation, manufacturing, operation and/or maintenance of electrical systems. Graduates of this degree program typically have strengths in the building, testing, operation, and maintenance of existing electrical systems and well-prepared for development and implementation of electrical systems.

**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>
AST 111	Math for Technology	3	
AST 102	Applied Chemistry	3	
AST 105	Applied Physics	3	
AST 133	Production Drawing	2	
AST 128	Electrical Measurements	2	
AST 135	Computer Aided Design	2	



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AST 134	Computer Programming	3	
AST 110	Data Analytics	3	
AST 117	Industrial Power Electronics	3	
AST 119	Instrumentation and Process Control	3	
	<b>D. Major Specialization Courses</b>		<b>36 units</b>
ELC 111	Circuits I (DC Circuits)	3	
ELC 112	Signal and Communication System	3	
ELC 121	Circuits II (AC Circuits)	3	
ELC 122	Residential and Commercial Power System and Design	3	
ELC 211	Industrial Power System and Design	3	
ELC 212	Electrical Machines (AC and DC)	3	
ELC 221	Motor Control and Sequential Control	3	
ELC 222	Electric Power Production	2	
ELC 223	Estimating and Costing	2	
ELC 311	PLC System and Programming	3	
ELC 312	Electric Power Transmission and Distribution	2	
ELC 321	Automatic Control System	3	
ELC 322	Photovoltaic Technologies	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>

<b>SUMMARY</b>	
<b>Courses</b>	<b>Number of Units</b>
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>



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**PROGRAM OF STUDY**

<b>FIRST YEAR</b>						
<b>First Semester</b>						
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>		<b>UNITS</b>	<b>NO. OF HRS.</b>	<b>PRE-REQUISITE</b>
		<b>LEC</b>	<b>LB/SW</b>			
AST 111	Math for Technology	3	0	3	3	
AST 102	Applied Chemistry	2	3	3	5	
AST 105	Applied Physics	2	3	3	5	
AST 133	Production Drawing	1	3	2	4	
AST 128	Electrical Measurements	1	3	2	4	
PM 101	Occupational Health and Safety Management	2	0	2	2	
ELC 111	Circuits I (DC Circuits)	2	3	3	5	
ELC 112	Signal and Communication System	2	3	3	5	
NSTP 111	National Service Training Program 1	3	0	3	3	
PATHFit 1	Movement Competency Training	2	0	2	2	
<b>TOTAL</b>		<b>18</b>	<b>18</b>	<b>26</b>	<b>33</b>	

<b>FIRST YEAR</b>						
<b>Second Semester</b>						
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>		<b>UNITS</b>	<b>NO. OF HRS.</b>	<b>PRE-REQUISITE</b>
		<b>LEC</b>	<b>LB/SW</b>			
GEd 101	Understanding the Self	3	0	3	3	
GEd 102	Mathematics in the Modern World	3	0	3	3	
GEd 106	Purposive Communication	3	0	3	3	
GEd 109	Science, Technology and Society	3	0	3	3	
ELC 121	Circuits II (AC Circuits)	2	3	3	5	ELC 111
ELC 122	Residential and Commercial Power System and Design	2	3	3	5	
AST 135	Computer Aided Design	1	3	2	4	AST 133
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>	

<b>SECOND YEAR</b>						
<b>First Semester</b>						
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>		<b>UNITS</b>	<b>NO. OF HRS.</b>	<b>PRE-REQUISITE</b>
		<b>LEC</b>	<b>LB/SW</b>			
GEd 103	Life and Works of Rizal	3	0	3	3	
GEd 104	The Contemporary World	3	0	3	3	
Fili 101	Kontekstwalisadong Komunikasyon sa Filipino	3	0	3	3	
PM 102	Industrial Operation & Management Practices	3	0	3	3	
AST 134	Computer Programming	2	3	3	5	
ELC 211	Industrial Power System and Design	2	3	3	5	ELC 122
ELC 212	Electrical Machines (AC and DC)	2	3	3	5	ELC 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>20</b>	<b>9</b>	<b>23</b>	<b>29</b>	



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<b>SECOND YEAR</b>						
<b>Second Semester</b>						
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>		<b>UNITS</b>	<b>NO. OF HRS.</b>	<b>PRE-REQUISITE</b>
		<b>LEC</b>	<b>LB/SW</b>			
Fili 102	Filipino sa iba't ibang Disiplina	3	0	3	3	
GEd 107	Ethics	3	0	3	3	
PM 103	Production and Operations Management	3	0	3	3	
AST 110	Data Analytics	3	0	3	3	GEd 102, AST 111
AST 117	Industrial Power Electronics	2	3	3	5	ELC 212
ELC 221	Motor Control and Sequential Control	2	3	3	5	ELC 212
ELC 222	Electric Power Production	2	0	2	2	ELC 121
ELC 223	Estimating and Costing	2	0	2	2	ELC 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>6</b>	<b>24</b>	<b>28</b>	

<b>THIRD YEAR</b>						
<b>First Semester</b>						
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>		<b>UNITS</b>	<b>NO. OF HRS.</b>	<b>PRE-REQUISITE</b>
		<b>LEC</b>	<b>LB/SW</b>			
Litr 102	ASEAN Literature	3	0	3	3	
GEd 105	Readings in Philippine History	3	0	3	3	
PM 104	Technology Research I	3	0	3	3	ELC 221, ELC 222, ELC 223
PM 105	Materials Technology Management	3	0	3	3	ELC 221, ELC 222, ELC 223
PM 106	Professional Ethics	3	0	3	3	
ELC 311	PLC System and Programming	2	3	3	5	ELC 221
ELC 312	Electric Power Transmission and Distribution	2	0	2	2	ELC 222
AST 119	Instrumentation and Process Control	2	3	3	5	ELC 221
<b>TOTAL</b>		<b>21</b>	<b>6</b>	<b>23</b>	<b>27</b>	

<b>THIRD YEAR</b>						
<b>Second Semester</b>						
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>		<b>UNITS</b>	<b>NO. OF HRS.</b>	<b>PRE-REQUISITE</b>
		<b>LEC</b>	<b>LB/SW</b>			
GEd 108	Art Appreciation	3	0	3	3	
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
ELC 321	Automatic Control System	2	3	3	5	ELC 311
ELC 322	Photovoltaic Technologies	2	3	3	5	ELC 222
<b>TOTAL</b>		<b>22</b>	<b>6</b>	<b>24</b>	<b>28</b>	



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FOURTH YEAR						
First Semester						
COURSE CODE	COURSE TITLE	CREDIT		UNITS	NO. OF HRS.	PRE-REQUISITE
		LEC	LB/SW			
OJT 105	Supervised Industrial Training 1 (540hrs)	0	10	10	540	ELC 321, ELC 322
<b>TOTAL</b>				<b>10</b>	<b>540</b>	

FOURTH YEAR						
Second Semester						
COURSE CODE	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**