



## CURRICULUM

### **Bachelor of Industrial Technology ELECTRICAL TECHNOLOGY**

Academic Year 2018-2019

Reference: CMO No. 20 S. 2013 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.

#### **Program Outcomes**

Graduates will have:

- a. An appropriate mastery of the knowledge, techniques, skills and modern tools of technology
- b. An ability to apply current knowledge and adapt to emerging applications of mathematics, science and technology
- c. An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes
- d. An ability to apply creativity in the design of systems, components or processes appropriate to program objectives
- e. An ability to function effectively on teams
- f. An ability to identify, analyze and solve technical problems
- g. An ability to communicate effectively in writing and in oral presentation
- h. A recognition of the need for, and an ability to engage in lifelong learning
- i. An ability to understand professional, ethical and social responsibilities
- j. The knowledge of and respect for diverse backgrounds, contemporary societal and global issues concerning the profession
- k. 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 109  | Manufacturing Technology                                         | 3     |                 |
| PM 110  | Total Quality Management                                         | 3     |                 |
| PM 111  | Environmental Technology                                         | 3     |                 |
| PM 112  | 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     |                 |
| 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> |
| PE 101   | Physical Fitness, Gymnastics and Aerobics          | 2 |                 |
| PE 102   | Rhythmic Activities                                | 2 |                 |
| PE 103   | Individual and Dual Sports                         | 2 |                 |
| PE 104   | Team Sports                                        | 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 (PE & NSTP)        | 14                     |
| <b>TOTAL</b>                        | <b>165</b>             |

Republic of the Philippines  
**BATANGAS STATE UNIVERSITY**  
 Batangas City

**COLLEGE OF INDUSTRIAL TECHNOLOGY**  
 Bachelor of Industrial Technology (BIT)  
 Electrical Technology  
 Effective A. Y. 2018 - 2019

**PROGRAM OF STUDY**

| <b>FIRST YEAR</b>      |                                                    |        |       |           |             |                  |
|------------------------|----------------------------------------------------|--------|-------|-----------|-------------|------------------|
| <b>First Semester</b>  |                                                    |        |       |           |             |                  |
| 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 128                | Electrical Measurements                            | 1      | 3     | 2         | 4           | None             |
| PM 101                 | Occupational Health and Safety Management          | 2      | 0     | 2         | 2           | None             |
| ELC 111                | Circuits I (DC Circuits)                           | 2      | 3     | 3         | 5           | None             |
| ELC 112                | Signal and Communication System                    | 2      | 3     | 3         | 5           | None             |
| NSTP 111               | National Service Training Program 1                | 3      | 0     | 3         | 3           | None             |
| PE 101                 | Physical Fitness, Gymnastics and Aerobics          | 2      | 0     | 2         | 2           | None             |
| <b>TOTAL</b>           |                                                    |        |       | <b>26</b> | <b>33</b>   |                  |
| <b>FIRST YEAR</b>      |                                                    |        |       |           |             |                  |
| <b>Second Semester</b> |                                                    |        |       |           |             |                  |
| 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             |
| 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           | None             |
| AST 135                | Computer Aided Design                              | 1      | 3     | 2         | 4           | AST 133          |
| NSTP 121               | National Service Training Program 2                | 3      | 0     | 3         | 3           | NSTP111          |
| PE 102                 | Rhythmic Activities                                | 2      | 0     | 2         | 2           | PE101            |
| <b>TOTAL</b>           |                                                    |        |       | <b>25</b> | <b>26</b>   |                  |
| <b>SECOND YEAR</b>     |                                                    |        |       |           |             |                  |
| <b>First Semester</b>  |                                                    |        |       |           |             |                  |
| 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             |
| 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          |
| PE 103                 | Individual and Dual Sports                         | 2      | 0     | 2         | 2           | PE102            |
| <b>TOTAL</b>           |                                                    |        |       | <b>23</b> | <b>29</b>   |                  |
| <b>SECOND YEAR</b>     |                                                    |        |       |           |             |                  |
| <b>Second Semester</b> |                                                    |        |       |           |             |                  |
| 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 |
| AST 117                | Industrial Power Electronics                       | 2      | 3     | 3         | 5           | ELC 212          |
| ELC 221                | Motor Control and Sequencial Control               | 2      | 3     | 3         | 5           | ELC 212          |
| ELC 222                | Electric Power Production                          | 2      | 0     | 2         | 2           | ELC 212          |
| ELC 223                | Estimating and Costing                             | 2      | 0     | 2         | 2           | ELC 211          |
| PE 104                 | Team Sports                                        | 2      | 0     | 2         | 2           | PE103            |
| <b>TOTAL</b>           |                                                    |        |       | <b>24</b> | <b>28</b>   |                  |

| THIRD YEAR      |                                              |        |       |           |             |                   |
|-----------------|----------------------------------------------|--------|-------|-----------|-------------|-------------------|
| First Semester  |                                              |        |       |           |             |                   |
| 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 Philippines History              | 3      | 0     | 3         | 3           | None              |
| PM 104          | Technology Research I                        | 3      | 0     | 3         | 3           | ELC 221, 222, 223 |
| PM 105          | Materials Technology Management              | 3      | 0     | 3         | 3           | ELC 221, 222, 223 |
| PM 106          | Professional Ethics                          | 3      | 0     | 3         | 3           | None              |
| 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>23</b> | <b>27</b>   |                   |
| THIRD YEAR      |                                              |        |       |           |             |                   |
| Second Semester |                                              |        |       |           |             |                   |
| 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 |
| PM 111          | 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>24</b> | <b>28</b>   |                   |
| FOURTH YEAR     |                                              |        |       |           |             |                   |
| First Semester  |                                              |        |       |           |             |                   |
| COURSE NO.      | COURSE TITLE                                 | CREDIT |       | UNITS     | NO. OF HRS. | PRE-REQUISITE     |
|                 |                                              | LEC    | LB/SW |           |             |                   |
| OJT 1           | Supervised Industrial Training 1 (540hrs)    | 0      | 10    | 10        | 540         | ELC 321, 322      |
| <b>TOTAL</b>    |                                              |        |       | <b>10</b> | <b>540</b>  |                   |
| FOURTH YEAR     |                                              |        |       |           |             |                   |
| Second Semester |                                              |        |       |           |             |                   |
| COURSE NO.      | COURSE TITLE                                 | CREDIT |       | UNITS     | NO. OF HRS. | PRE-REQUISITE     |
|                 |                                              | LEC    | LB/SW |           |             |                   |
| OJT 2           | Supervised Industrial Training 2 (540hrs)    | 0      | 10    | 10        | 540         | OJT 1             |
| <b>TOTAL</b>    |                                              |        |       | <b>10</b> | <b>540</b>  |                   |

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

**TOTAL UNITS: 165**