



## CURRICULUM

Professional orientation: **Energetics**

Program: **Electric Power Supply and Electrical Equipment**

Professional qualification: **Electrical Engineer**

Educational and qualifical degree: **Bachelor**

Form of study: **Full - Time**

Term of study: **4 years / 8 semesters**

| No                               | Subject Name  | Types of term control |          |    |          | Semester auditorium load |            |            |           |            | Unsupervised load | Total work hours | ECTS credits |
|----------------------------------|---|-----------------------|----------|----|----------|--------------------------|------------|------------|-----------|------------|-------------------|------------------|--------------|
|                                  |   | E                     | PA       | CP | A        | L                        | S          | L          | CP<br>CPR | Total      |                   |                  |              |
| 1                                | 2   | 3                     | 4        | 5  | 6        | 7                        | 8          | 9          | 10        | 11         | 12                | 13               | 14           |
| 1                                | Mathematics, part 1   | 1                     |          |    |          | 15                       | 45         |            |           | 60         | 120               | 180              | 7            |
| 2                                | Physics   | 1                     |          |    |          | 30                       | 15         | 15         |           | 60         | 120               | 180              | 7            |
| 3                                | Technical Mechanics   | 1                     |          |    |          | 15                       | 30         |            |           | 45         | 120               | 165              | 6            |
| 4                                | Electrotechnical Documentation                                      |                       | 1        |    |          | 15                       |            | 30         |           | 45         | 120               | 165              | 6            |
| 5                                | English, part 1   |                       |          |    | 1        |                          | 30         |            |           | 30         | 30                | 60               | 2            |
| 6                                | Practical Training, part 1  |                       |          |    | 1        |                          |            |            |           |            | 30                | 30               | 1            |
| 7                                | Elective Subject  |                       |          |    | 1        |                          |            |            |           |            | 30                | 30               | 1            |
| 7a                               | Specialized Sport Activities, part 1                                |                       |          |    | 1        |                          |            |            |           |            | 30                | 30               | 1            |
| 7b                               | Sport and Social Adaptation, part 1                                 |                       |          |    | 1        |                          |            |            |           |            | 30                | 30               | 1            |
| <b>Total for the 1 semester:</b> |   | <b>3</b>              | <b>1</b> |    | <b>3</b> | <b>75</b>                | <b>120</b> | <b>45</b>  |           | <b>240</b> | <b>570</b>        | <b>810</b>       | <b>30</b>    |
| 8                                | Mathematics, part 2   | 2                     |          |    |          | 30                       | 30         |            |           | 60         | 105               | 165              | 6            |
| 9                                | Theoretical Electrical Engineering, part 1                          | 2                     |          |    |          | 30                       |            | 30         |           | 60         | 105               | 165              | 6            |
| 10                               | Programming and Computer Technologies in Electric Power Engineering |                       | 2        |    |          | 15                       |            | 30         |           | 45         | 60                | 105              | 4            |
| 11                               | Materials in Electrical Engineering                                 | 2                     |          |    |          | 30                       |            | 30         |           | 60         | 105               | 165              | 6            |
| 12                               | Thermal Part of Thermal Power Plants                                |                       | 2        |    |          | 30                       |            |            |           | 30         | 105               | 135              | 5            |
| 13                               | Hydro-power Equipment   |                       |          |    | 2        | 15                       |            | 15         |           | 30         | 75                | 105              | 4            |
| 14                               | English, part 2   |                       |          |    | 2        |                          | 30         |            |           | 30         | 30                | 60               | 2            |
| 15                               | Practical Training, part 2  |                       |          |    | 2        |                          |            |            |           |            | 30                | 30               | 1            |
| 16                               | Elective Subject  |                       |          |    | 2        |                          |            |            |           |            | 30                | 30               | 1            |
| 16a                              | Specialized Sport Activities, part 2                                |                       |          |    | 2        |                          |            |            |           |            | 30                | 30               | 1            |
| 16b                              | Sport and Social Adaptation, part 2                                 |                       |          |    | 2        |                          |            |            |           |            | 30                | 30               | 1            |
| <b>Total for the 2 semester:</b> |   | <b>3</b>              | <b>2</b> |    | <b>4</b> | <b>150</b>               | <b>60</b>  | <b>105</b> |           | <b>315</b> | <b>645</b>        | <b>960</b>       | <b>35</b>    |
| 17                               | Theoretical Electrical Engineering, part 2                          | 3                     |          |    |          | 30                       |            | 30         |           | 60         | 120               | 180              | 7            |
| 18                               | Electrical Measurements   | 3                     |          |    |          | 30                       |            | 30         |           | 60         | 105               | 165              | 6            |
| 19                               | Electrical Machines and Apparatus, part 1                           | 3                     |          |    |          | 30                       |            | 30         |           | 60         | 105               | 165              | 6            |
| 20                               | Power Electronics   | 3                     |          |    |          | 30                       |            | 15         |           | 45         | 90                | 135              | 5            |
| 21                               | Technology of Electric Power Generation                             |                       | 3        |    |          | 30                       | 15         |            |           | 45         | 90                | 135              | 5            |
| 22                               | English, part 3   |                       |          |    | 3        |                          | 30         |            |           | 30         | 30                | 60               | 2            |

| No   | Subject Name  | Types of term control |           |          |           | Semester auditorium load |            |            |            |             | Unsupervised load | Total work hours | ECTS credits |
|--|---|-----------------------|-----------|----------|-----------|--------------------------|------------|------------|------------|-------------|-------------------|------------------|--------------|
|  |   | E                     | PA        | CP       | A         | L                        | S          | L          | CP CPR     | Total       |                   |                  |              |
| 1  | 2   | 3                     | 4         | 5        | 6         | 7                        | 8          | 9          | 10         | 11          | 12                | 13               | 14           |
| 23   | Practical Training, part 3  |                       |           |          | 3         |                          |            |            |            |             | 30                | 30               | 1            |
| 24   | Elective Subject  |                       |           |          | 3         |                          |            |            |            |             | 30                | 30               | 1            |
| 24a  | Specialized Sport Activities, part 3                                    |                       |           |          | 3         |                          |            |            |            |             | 30                | 30               | 1            |
| 24b  | Sports Management, part 1   |                       |           |          | 3         |                          |            |            |            |             | 30                | 30               | 1            |
| <b>Total for the 3 semester:</b>           |   | <b>4</b>              | <b>1</b>  |          | <b>3</b>  | <b>150</b>               | <b>45</b>  | <b>105</b> |            | <b>300</b>  | <b>600</b>        | <b>900</b>       | <b>33</b>    |
| 25   | Electrical Machines and Apparatus, part 2                               | 4                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 26   | Digital and Microprocessor Technics                                     |                       | 4         |          |           | 30                       |            | 15         |            | 45          | 90                | 135              | 5            |
| 27   | Installation and Lighting Equipment                                     |                       | 4         |          |           | 30                       | 15         | 15         |            | 60          | 105               | 165              | 6            |
| 28   | Electrical Drives   | 4                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 29   | Industrial Converters in Electrical Equipment, part 1                   | 4                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 30   | Practical Training, part 4  |                       |           |          | 4         |                          |            |            |            |             | 30                | 30               | 1            |
| 31   | Elective Subject  |                       |           |          | 4         |                          |            |            |            |             | 30                | 30               | 1            |
| 31a  | Specialized Sport Activities, part 4                                    |                       |           |          | 4         |                          |            |            |            |             | 30                | 30               | 1            |
| 31b  | Sports Management, part 2   |                       |           |          | 4         |                          |            |            |            |             | 30                | 30               | 1            |
| <b>Total for the 4 semester:</b>           |   | <b>3</b>              | <b>2</b>  |          | <b>2</b>  | <b>150</b>               | <b>15</b>  | <b>120</b> |            | <b>285</b>  | <b>570</b>        | <b>855</b>       | <b>31</b>    |
| 32   | Electrical Power Supply, part 1   | 5                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 33   | Technical Safety  | 5                     |           |          |           | 30                       |            | 15         |            | 45          | 120               | 165              | 6            |
| 34   | High Voltage Engineering  | 5                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 35   | Electrical Part of Power Plants and Substations                         | 5                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 36   | Industrial Converters in Electrical Equipment, part 2                   |                       | 5         |          |           | 30                       |            | 15         | 15         | 60          | 105               | 165              | 6            |
| 37   | Electrical Part of Power Plants and Substations, project                |                       |           | 5        |           |                          |            |            | 30         | 30          | 30                | 60               | 2            |
| <b>Total for the 5 semester:</b>           |   | <b>4</b>              | <b>1</b>  | <b>1</b> |           | <b>150</b>               |            | <b>120</b> | <b>45</b>  | <b>315</b>  | <b>570</b>        | <b>885</b>       | <b>32</b>    |
| 38   | Electrical Power Supply, part 2   | 6                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 39   | Electronic and Embedded Systems for Industrial Units Control            |                       | 6         |          |           | 30                       | 15         | 15         |            | 60          | 75                | 135              | 5            |
| 40   | Lighting Systems  | 6                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 41   | Electrical Equipment, part 1  | 6                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 42   | Operation and Diagnostics of Electrical Devices                         |                       | 6         |          |           | 30                       |            | 15         |            | 45          | 90                | 135              | 5            |
| 43   | Lighting Systems, project   |                       |           | 6        |           |                          |            |            | 30         | 30          | 30                | 60               | 2            |
| 44   | Special Practice  |                       |           |          | 6         |                          |            |            |            |             | 60                | 60               | 2            |
| <b>Total for the 6 semester:</b>           |   | <b>3</b>              | <b>2</b>  | <b>1</b> | <b>1</b>  | <b>150</b>               | <b>15</b>  | <b>120</b> | <b>30</b>  | <b>315</b>  | <b>570</b>        | <b>885</b>       | <b>32</b>    |
| 45   | Regimes and Optimization of Electric Power Supply Systems               | 7                     |           |          |           | 30                       |            | 30         |            | 60          | 75                | 135              | 5            |
| 46   | Electrical Equipment, part 2  | 7                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 47   | Systems for Control and Protection in Electric Power Supply Systems     | 7                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 48   | Electrical Transport  | 7                     |           |          |           | 30                       |            | 30         |            | 60          | 105               | 165              | 6            |
| 49   | Optimization of Lighting Systems  |                       | 7         |          |           | 30                       |            | 15         |            | 45          | 90                | 135              | 5            |
| 50   | Electrical Equipment, project   |                       |           | 7        |           |                          |            |            | 30         | 30          | 30                | 60               | 2            |
| <b>Total for the 7 semester:</b>           |   | <b>4</b>              | <b>1</b>  | <b>1</b> |           | <b>150</b>               |            | <b>135</b> | <b>30</b>  | <b>315</b>  | <b>510</b>        | <b>825</b>       | <b>30</b>    |
| 51   |   | 8                     |           |          |           | 30                       |            | 15         |            | 45          | 90                | 135              | 5            |
| 52   | Electrical Equipment for Specialized Manufacturing                      | 8                     |           |          |           | 30                       |            | 15         |            | 45          | 90                | 135              | 5            |
| 53   | Technical and Economic Issues of Efficient Electrical Power Consumption |                       | 8         |          |           | 30                       |            | 15         |            | 45          | 90                | 135              | 5            |
| 54   | Electrical Power Supply, project  |                       |           | 8        |           |                          |            |            | 30         | 30          | 30                | 60               | 2            |
| <b>Total for the 8 semester:</b>           |   | <b>2</b>              | <b>1</b>  | <b>1</b> |           | <b>90</b>                |            | <b>45</b>  | <b>30</b>  | <b>165</b>  | <b>300</b>        | <b>465</b>       | <b>17</b>    |
| <b>Total for all courses of education:</b> |   | <b>26</b>             | <b>11</b> | <b>4</b> | <b>13</b> | <b>1065</b>              | <b>255</b> | <b>795</b> | <b>135</b> | <b>2250</b> | <b>4335</b>       | <b>6585</b>      | <b>240</b>   |

### Facultative subjects

| No | Subject Name | Types of term control |    |    |   | Semester auditorium load incl: |   |   |        |       | Unsuper-vised load | Total work hours | ECTS credits |
|----|--------------|-----------------------|----|----|---|--------------------------------|---|---|--------|-------|--------------------|------------------|--------------|
|    |              | E                     | PA | CP | A | L                              | S | L | CP CPR | Total |                    |                  |              |
| 1  | 2            | 3                     | 4  | 5  | 6 | 7                              | 8 | 9 | 10     | 11    | 12                 | 13               | 14           |
|    |              |                       |    |    |   |                                |   |   |        |       |                    |                  |              |
|    |              |                       |    |    |   |                                |   |   |        |       |                    |                  |              |
|    |              |                       |    |    |   |                                |   |   |        |       |                    |                  |              |
|    |              |                       |    |    |   |                                |   |   |        |       |                    |                  |              |

| Types of graduation   | Semester | Unsupervised load | ECTS credits |
|---|----------|-------------------|--------------|
| Preparation of Diploma Thesis / Preparation for State Examination | 8        | 300               | 10           |
| Defence of Diploma Thesis / State Examination                     | 8        |                   |              |
|   |          |                   |              |
|   |          |                   |              |

### Accepted from AU with

Protocol No 10 / 25.04.2016

Modified with Protocols No 11 / 06.06.2016

**Valid from the 2016 / 2017 academic year.**

**The weekly allocation of the classes is fixed according to the "Structure of the Learning Process" Academic Board adopted for the current academic year.**

Head of Department EPSEE:

/ Assoc. Prof. PhD Gyurov V. /

Dean of Faculty FEE:

/ Assoc. Prof. PhD Yordanova M. /