

CURRICULUM

Bachelor's degree program in Electrical Engineering as of 2021/2022 academic year

ECTS Subject code Tp EE No
 - T – type of course: B for BEng, M for MEng;
 - I - IV semester – fundamental subjects - professional field 5.2. Electrical Engineering, Electronics and Automation;
 - p - additional symbol for branch Plovdiv, in which the specialty is taught; EE – specialty “Electrical Engineering” in Bulgarian;
 - No – number of the subject;
 Lectures (L), Tutorials (Tut.), Labs (Lab.), Auditorium Total (AT), Self-Study (SS), Exam (E),
 Continuous Assessment (CA), Semester Project (SP), Semester Assignment (course work) (SA).

| № | Code | SUBJECT | Semester Load | | | | | | Assesment | | | | ECTS credits |
|---------------------|--------------|---|---------------|-----------|------------|------------|------------|------------|-----------|----------|----------|----------|--------------|
| | | | L | Tut. | Lab. | AT | SS | Total | E | CA | SP | SA | |
| SEMESTER I | | | | | | | | | | | | | |
| 1 | MAT11 | Mathematics I | 45 | 30 | 0 | 75 | 165 | 240 | 1 | | | | 8 |
| 2 | PHY02 | Physics | 30 | 30 | 15 | 75 | 165 | 240 | 1 | | | | 8 |
| 3 | CHE02 | Chemistry | 15 | 0 | 30 | 45 | 105 | 150 | 1 | | | | 5 |
| 4 | ENG06 | Engineering graphics | 15 | 0 | 45 | 60 | 120 | 180 | | 1 | | 1 | 6 |
| 5 | LNG01 | Foreign language I | 0 | 30 | 0 | 30 | 30 | 60 | | 1 | | | 2 |
| 6 | SPR01 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |
| Total | | | 105 | 90 | 90 | 285 | 615 | 900 | 3 | 3 | 0 | 1 | 30 |
| SEMESTER II | | | | | | | | | | | | | |
| 7 | MAT21 | Mathematics II | 45 | 30 | 0 | 75 | 135 | 210 | 1 | | | | 7 |
| 8 | EEA01 | Electrical materials | 30 | 0 | 30 | 60 | 90 | 150 | 1 | | | | 5 |
| 9 | CCE26 | Programming I | 30 | 0 | 30 | 60 | 90 | 150 | | 1 | | 1 | 5 |
| 10 | MEC22 | Mechanics | 30 | 30 | 0 | 60 | 90 | 150 | 1 | | | | 5 |
| 11 | EEA02 | Technical safety | 30 | 0 | 15 | 45 | 105 | 150 | | 1 | | | 5 |
| 12 | PRC01 | Practicum | 0 | 0 | 0 | 0 | 60 | 60 | | 1 | | | 2 |
| 13 | SPR02 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |
| Total | | | 165 | 60 | 75 | 300 | 600 | 900 | 3 | 4 | 0 | 1 | 30 |
| SEMESTER III | | | | | | | | | | | | | |
| 14 | EEA03 | Theoretical electrical engineering I | 30 | 30 | 15 | 75 | 165 | 240 | 1 | | | 1 | 8 |
| 15 | EEA04 | Electrical measurements | 30 | 0 | 30 | 60 | 120 | 180 | 1 | | | | 6 |
| 16 | MEC23 | Mechanical systems | 30 | 0 | 15 | 45 | 105 | 150 | | 1 | | | 5 |
| 17 | EEA05 | Semiconductor elements | 30 | 0 | 30 | 60 | 90 | 150 | 1 | | | | 5 |
| 18 | EEA06 | Electronic circuitry theory | 30 | 0 | 30 | 60 | 90 | 150 | | 1 | | | 5 |
| 19 | SPR03 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |
| Total | | | 150 | 30 | 120 | 300 | 600 | 900 | 3 | 3 | 0 | 1 | 30 |
| SEMESTER IV | | | | | | | | | | | | | |
| 20 | EEA07 | Theoretical electrical engineering II | 30 | 30 | 15 | 75 | 135 | 210 | 1 | | | 1 | 7 |
| 21 | CCE27 | Programming and mathematical modeling tools | 15 | 0 | 30 | 45 | 75 | 120 | | 1 | | 1 | 4 |
| 22 | EEA08 | Theory of automatic control | 30 | 0 | 30 | 60 | 90 | 150 | 1 | | | | 5 |
| 23 | EEA09 | Digital circuitry | 30 | 0 | 30 | 60 | 90 | 150 | 1 | | | | 5 |
| 24 | CCE28 | Basics of telecommunications | 30 | 0 | 15 | 45 | 75 | 120 | | 1 | | | 4 |
| 25 | EEA10 | Digital circuitry – project | 0 | 0 | 0 | 0 | 60 | 60 | | | 1 | | 2 |
| 26 | PRC02 | Practicum | 0 | 0 | 0 | 0 | 60 | 60 | | 1 | | | 2 |
| 27 | SPR04 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |
| Total | | | 135 | 30 | 120 | 285 | 615 | 900 | 3 | 4 | 1 | 2 | 30 |

| № | Code | SUBJECT | Semester Load | | | | | | Assesment | | | | ECTS credits |
|----------------------|--------|---|---------------|----------|------------|------------|------------|------------|---------------------------|----------|----------|----------|--------------|
| | | | L | Tut. | Lab. | AT | SS | Total | E | CA | SP | SA | |
| SEMESTER V | | | | | | | | | | | | | |
| 28 | BpEE01 | Electrical machines I | 45 | 0 | 30 | 75 | 105 | 180 | 1 | | | 1 | 6 |
| 29 | BpEE02 | Electrical apparatus I | 45 | 0 | 30 | 75 | 105 | 180 | 1 | | | 1 | 6 |
| 30 | BpEE03 | High voltage engineering | 30 | 0 | 30 | 60 | 90 | 150 | 1 | | | | 5 |
| 31 | BpEE04 | Embedded systems and programmable controllers | 45 | 0 | 0 | 45 | 75 | 120 | 1 | | | | 4 |
| 32 | BpEE05 | Lighting and installation engineering | 30 | 0 | 15 | 45 | 75 | 120 | | 1 | | | 4 |
| 33 | BpEE06 | Energy engineering | 15 | 0 | 0 | 15 | 75 | 90 | | 1 | | | 3 |
| 34 | BpEE07 | Embedded systems and programmable controllers - project | 0 | 0 | 0 | 0 | 60 | 60 | | | 1 | | 2 |
| Total | | | 210 | 0 | 105 | 315 | 585 | 900 | 4 | 2 | 1 | 2 | 30 |
| SEMESTER VI | | | | | | | | | | | | | |
| 35 | BpEE08 | Electrical machines II | 45 | 0 | 30 | 75 | 105 | 180 | 1 | | | 1 | 6 |
| 36 | BpEE09 | Electrical apparatus II | 45 | 0 | 30 | 75 | 105 | 180 | 1 | | | 1 | 6 |
| 37 | BpEE10 | Electrical converters and energy efficiency | 45 | 0 | 25 | 70 | 110 | 180 | 1 | | | | 6 |
| 38 | BpEE11 | Design of electrical machines | 45 | 0 | 20 | 65 | 115 | 180 | 1 | | | | 6 |
| 39 | BpEE12 | Management in electrical industry | 30 | 0 | 0 | 30 | 90 | 120 | | 1 | | | 4 |
| 40 | BpEE13 | Design of electrical machines - project | 0 | 0 | 0 | 0 | 60 | 60 | | | 1 | | 2 |
| Total | | | 210 | 0 | 105 | 315 | 585 | 900 | 4 | 1 | 1 | 2 | 30 |
| SEMESTER VII | | | | | | | | | | | | | |
| 41 | BpEE14 | Electrical drives | 45 | 0 | 25 | 70 | 110 | 180 | 1 | | | | 6 |
| 42 | BpEE15 | Electrical power engineering | 45 | 0 | 0 | 45 | 105 | 150 | 1 | | | | 5 |
| 43 | BpEE16 | Switchgear engineering | 45 | 0 | 25 | 70 | 110 | 180 | 1 | | | | 6 |
| 44 | BpEE17 | Technologies in electrical engineering and electronics | 45 | 0 | 25 | 70 | 110 | 180 | 1 | | | | 6 |
| 45 | BpEE18 | Ecology and renewable energy sources | 40 | 0 | 20 | 60 | 90 | 150 | | 1 | | | 5 |
| 46 | BpEE19 | Switchgear engineering - project | 0 | 0 | 0 | 0 | 60 | 60 | | | 1 | | 2 |
| Total | | | 220 | 0 | 95 | 315 | 585 | 900 | 4 | 1 | 1 | 0 | 30 |
| SEMESTER VIII | | | | | | | | | | | | | |
| 47 | BpEE20 | Compulsory elective subject* (List 1) | 30 | 0 | 20 | 50 | 100 | 150 | | 1 | | | 5 |
| 48 | BpEE21 | Compulsory elective subject* (List 2) | 30 | 0 | 15 | 45 | 105 | 150 | 1 | | | 1 | 5 |
| 49 | BpEE22 | Compulsory elective subject* (List 3) | 30 | 0 | 15 | 45 | 105 | 150 | 1 | | | | 5 |
| 50 | BpEE23 | Compulsory elective subject* (List 4) | 30 | 0 | 15 | 45 | 105 | 150 | | 1 | | | 5 |
| 51 | BpEE24 | Diploma project | 0 | 0 | 0 | 0 | 300 | 300 | Defense of diploma thesis | | | | 10 |
| Total | | | 120 | 0 | 65 | 185 | 715 | 900 | 2 | 2 | 0 | 1 | 30 |

*Subjects 20.1, 21.1, 22.1, 23.1 form module „Power Distribution”

*Subjects 20.2, 21.2, 22.2, 23.2 form module „Electrical Equipment”

Remark: The method of Assessment (Continuous Assessment) for the subjects "Sport" and "Practicum" is "Pass grade"/"No Pass grade".

LIST OF THE OPTIONAL SUBJECTS

| | | |
|---|--|-----------------|
| List 1 Compulsory elective subject | | ECTS = 5 |
| 1 | CAD systems in electrical engineering | BpEE20.1 |
| 2 | Systems with guaranteed and uninterrupted power supply | BpEE20.2 |
| List 2 Compulsory elective subject | | ECTS = 5 |
| 1 | Electrical grids and systems | BpEE21.1 |
| 2 | Electric power equipment of industrial enterprises | BpEE21.2 |
| List 3 Compulsory elective subject | | ECTS =5 |
| 1 | Measuring tools in power engineering | BpEE22.1 |
| 2 | Quality control | BpEE22.2 |
| List 4 Compulsory elective subject | | ECTS =5 |
| 1 | Management information systems | BpEE23.1 |
| 2 | Electromagnetic compatibility | BpEE23.2 |

LIST OF THE FACULTATIVE SUBJECTS

| № | Code | SUBJECT | Semester Load | | | | | | Assesment | | | | ECTS credits |
|----------------------|-----------------|---|---------------|------|------|-----------|----|------------|-----------|----|----|----|--------------|
| | | | L | Tut. | Lab. | AT | SS | Total | E | CA | SP | SA | |
| SEMESTER II | | | | | | | | | | | | | |
| 1 | FaLNG02 | Foreign language II | 0 | 30 | 0 | 30 | 30 | 60 | | 1 | | | 2 |
| SEMESTER V | | | | | | | | | | | | | |
| 1 | FaSPR05 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |
| SEMESTER VI | | | | | | | | | | | | | |
| 1 | FaSPR06 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |
| 2 | FaBpEE01 | Management of projects (in English) | 15 | 0 | 30 | 45 | 45 | 90 | | 1 | | | 3 |
| SEMESTER VII | | | | | | | | | | | | | |
| 1 | FaSPR07 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |
| 2 | FaBpEE02 | Power supply systems for laser devices | 30 | 0 | 30 | 60 | 60 | 120 | | 1 | | | 4 |
| SEMESTER VIII | | | | | | | | | | | | | |
| 1 | FaSPR08 | Sport | 0 | 0 | 0 | 0 | 30 | 30 | | 1 | | | 1 |