

# "Todor Kableshkov" University of Transport

Faculty: Telecommunications and Electrical Equipment in Transport

Programme: Automation, Electronics and Computer Management in Electric Transport

Degree: Bachelor

Mode of study: Part time

Duration of study: 4.0 years

| No                        | Code  | Course  | Total contact hours<br>(Hours of lectures<br>and seminars) | ECTS<br>credits |
|---------------------------|-------|---|--|-----------------|
| <i>Compulsory courses</i> |       |   |  |                 |
| 1                         | 811   | Mathematics part I  | 38   | 7               |
| 2                         | 1114  | Physics   | 45   | 7               |
| 3                         | 821   | Informatics   | 45   | 7               |
| 4                         | 1002  | Computer Drawing for Engineers  | 23   | 4               |
| 5                         | 702   | Economics   | 23   | 4               |
| 6.1                       | 1225  | Turnery   | 0  | 0               |
| 6.2                       | 1224  | Locksmith   | 0  | 0               |
| 6.3                       | 1223  | Thermal Treatment   | 0  | 0               |
| 6.4                       | 1222  | Welding   | 0  | 0               |
| 7                         | 812   | Mathematics part II   | 38   | 7               |
| 8                         | 715   | Foreign Language - English, German, French, Russian                     | 45   | 6               |
| 9                         | 824   | Computer Technologies and Programming                                   | 38   | 8               |
| 10                        | 1101  | Theoretical Electrical Engineering part I                               | 45   | 8               |
| 11                        | 1379  | Training practice in electrical technology                              | 0  | 0               |
| 12                        | 813   | Mathematics part III  | 30   | 6               |
| 13                        | 1102  | Theoretical Electrical Engineering part II                              | 30   | 6               |
| 14                        | 13123 | Principles of Electronics   | 30   | 5               |
| 15                        | 1110  | Electrical and Electronic Measurements                                  | 38   | 5               |
| 16                        | 1216  | Materials and Technologies in Electronics                               | 23   | 3               |
| 17                        | 904   | mechatronic systems   | 38   | 5               |
| 18                        | 13165 | Technical and Fire Safety   | 23   | 3               |
| 19                        | 1398  | Electromechanical Devices   | 45   | 7               |
| 20                        | 13124 | Theory of Management  | 38   | 6               |
| 21                        | 13125 | Analog and Pulse Circuitry  | 38   | 7               |
| 22                        | 13122 | Electromechanical Devices - make a project                              | 0  | 3               |
| 23                        | 13126 | Schematics - practicum  | 23   | 4               |
| 24                        | 13127 | Digital and Microprocessor Technique                                    | 38   | 7               |
| 25                        | 13128 | Sensor Technology   | 30   | 6               |
| 26                        | 1383  | Electrical Power Supply of the Electric Transport                       | 45   | 7               |
| 27                        | 13129 | Technically Automation Tools  | 45   | 7               |
| 28                        | 13130 | Technically Automation Tools - make a project                           | 0  | 3               |
| 29                        | 13131 | Converting Technique in Electric Transport                              | 38   | 7               |
| 30                        | 1380  | Electrical equipment of electric transport                              | 30   | 6               |
| 31                        | 13132 | Implementation of Microprocessor Systems in Electric Transport Vehicles | 30   | 6               |
| 32                        | 13133 | Automatics in Electrical Transport                                      | 30   | 6               |
| 34                        | 13134 | Implementation of Computer Systems in Transport                         | 45   | 7               |
| 35                        | 13135 | Management of Electromechanical Systems                                 | 45   | 7               |
| 36                        | 13136 | Computer-aided Design of Project Documentation                          | 38   | 6               |

|                         |       |  |    |   |
|-------------------------|-------|--|----|---|
| 37                      | 13137 | Microprocessor System Setup and Diagnostics  | 45 | 8 |
| <i>Elective courses</i> |       |  |    |   |
| 38.1                    | 707   | Course in Foreign Language in Engineering  | 23 | 3 |
| 39.1                    | 13138 | Modern systems for management, control and protection of electric vehicles                                   | 30 | 6 |
| 39.2                    | 13139 | Contemporary Systems Management, Control and Protection in Power Supply Facilities in the Electric Transport | 30 | 6 |
| 40.1                    | 13140 | Electric Drives Control Algorithms of Electrical Vehicles  | 30 | 7 |
| 40.2                    | 13141 | Automatics and Control of Electric Power Supplies Equipment of Electric Transport                            | 30 | 7 |
| 40.3                    | 13142 | Design and Simulation of Circuits in the Programmable Environment  | 30 | 7 |
| 41.1                    | 13143 | Transmission Technology in Electric Transport - make a project   | 0  | 3 |
| 41.2                    | 13144 | Electrical Equipment in Electrical Transport - make a project  | 0  | 3 |
| 41.3                    | 13145 | Management of Electromechanical Systems - make a project   | 0  | 3 |
| 42.1                    | 13146 | Modern Technologies in the Development of Electric Vehicles  | 30 | 6 |
| 42.2                    | 13147 | Contemporary Trends in the Traction Power Supply Systems Development   | 30 | 6 |
| <i>Optional courses</i> |       |  |    |   |
| 43.1                    | 13148 | Schemes of Main Electrical Circuits and Automation of Electrical Transport Vehicles of Urban Transport       | 38 | 6 |
| 43.2                    | 13149 | Schemes of Main Electrical Circuits and Automation of Electrical Rolling Stock in the Rail Transport         | 38 | 6 |
| 43.3                    | 13150 | Schematics of Main Electrical Circuits and Automation of Power Supply Systems in Electric Transport          | 38 | 6 |
| 43.4                    | 13151 | Design of Electronic Control Circuits for Driving Electrical Transport Vehicles                              | 38 | 6 |
| 44.1                    | 13152 | Electronic Devices and Control Systems for Electrical Vehicles in the Public Transport                       | 38 | 6 |
| 44.2                    | 13153 | Electronic Devices and Control Systems for Electrical Rolling Stock in Rail Transport                        | 38 | 6 |
| 44.3                    | 13154 | Electronic Devices and Control Systems for Power Supply Systems in the Electrical Transport                  | 38 | 6 |
| 44.4                    | 13155 | Design of Electronic Circuits for Management of Power Supply and Building Systems                            | 38 | 6 |
| 45.1                    | 13156 | Diagnostics and Repair of Electronic Devices for Electrical Transport Vehicles for Public Transport          | 38 | 6 |
| 45.2                    | 13157 | Diagnostics and Repair of Electronic Devices for Electrical Rolling Stock for Railway Transport              | 38 | 6 |
| 45.3                    | 13158 | Diagnostics and Repair of Electronic Devices for Power Supply Systems in Electrical Transport                | 38 | 6 |
| 45.4                    | 13159 | Programming Microcontrollers and Working with PLC  | 38 | 6 |