TECHNICAL UNIVERSITY OF VARNA

**Ratified by:**
**Rector of TU-Varna: .....**
/ Prof. PhD Vasilev R. /

# CURRICULUM

Proffesional orientation: **Machine Engineering**

Program: **Automotive Engineering**

Proffesional qualification: **Mechanical Engineer**

Educational and qualificational 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 CPR | Total | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 1 | Mathematics, part 1 | 1 | | | | 30 | 15 | | 15 | 60 | 100 | 160 | 6 |
| 2 | Engineering Graphics and Technical Drawing | | 1 | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 3 | Chemistry | 1 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 4 | Information Technologies and Systems | | 1 | | | 15 | | 30 | | 45 | 90 | 135 | 5 |
| 5 | English | | | | 1 | | 45 | | | 45 | 90 | 135 | 5 |
| 6 | Elective Subject | | | | 1 | | | | | | 30 | 30 | 1 |
| 6a | Specialized Sport Activities, part 1 | | | | 1 | | | | | | 30 | 30 | 1 |
| 6b | Sport and Social Adaptation, part 1 | | | | 1 | | | | | | 30 | 30 | 1 |
| 7 | Practical Training, part 1 | | | | 1 | | | | | | 30 | 30 | 1 |
| | **Total for the 1 semester:** | **2** | **2** | | **3** | **105** | **60** | **90** | **15** | **270** | **540** | **810** | **30** |
| 8 | Mathematics, part 2 | 2 | | | | 30 | 15 | | 15 | 60 | 100 | 160 | 6 |
| 9 | Technical Mechanics | 2 | | | | 30 | | 15 | 15 | 60 | 100 | 160 | 6 |
| 10 | Electrical Engineering and Electronics | | 2 | | | 15 | | 30 | | 45 | 90 | 135 | 5 |
| 11 | Materials in Automobile Industry | 2 | | | | 30 | | 30 | | 60 | 75 | 135 | 5 |
| 12 | Interchangeability and Technical Measurements | | 2 | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 13 | Elective Subject | | | | 2 | | | | | | 30 | 30 | 1 |
| 13a | Specialized Sport Activities, part 2 | | | | 2 | | | | | | 30 | 30 | 1 |
| 13b | Sport and Social Adaptation, part 2 | | | | 2 | | | | | | 30 | 30 | 1 |
| 14 | Practical Training, part 2 | | | | 2 | | | | | | 30 | 30 | 1 |
| | **Total for the 2 semester:** | **3** | **2** | | **2** | **135** | **15** | **105** | **30** | **285** | **525** | **810** | **30** |
| 15 | Thermodynamics and Heat Transfer | 3 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 16 | Strength of Materials | 3 | | | | 30 | | 15 | | 45 | 115 | 160 | 6 |
| 17 | Transport Technology and Management | | 3 | | | 30 | | 15 | 15 | 60 | 100 | 160 | 6 |
| 18 | Fluid Mechanics | 3 | | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 19 | Basics of Engines and Automobiles (Introduction to Specialty) | | 3 | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 20 | Elective Subject | | | | 3 | | | | | | 30 | 30 | 1 |
| 20a | Specialized Sport Activities, part 3 | | | | 3 | | | | | | 30 | 30 | 1 |
| 20b | Sports Management, part 1 | | | | 3 | | | | | | 30 | 30 | 1 |
| | **Total for the 3 semester:** | **3** | **2** | | **1** | **150** | | **105** | **15** | **270** | **535** | **805** | **30** |

| 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 |
| 21 | Machine Elements | 4 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 22 | Exploitation Materials in Transport Vehicles | | 4 | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 23 | Internal Combustion Engine Fundamentals, part 1 | 4 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 24 | Automotive Engineering Fundamentals | 4 | | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 25 | Automated Systems for Transport Vehicle Design | | 4 | | | 15 | | 45 | | 60 | 100 | 160 | 6 |
| 26 | Elective Subject | | | | 4 | | | | | | 30 | 30 | 1 |
| 26a | Specialized Sport Activities, part 4 | | | | 4 | | | | | | 30 | 30 | 1 |
| 26b | Sports Management, part 2 | | | | 4 | | | | | | 30 | 30 | 1 |
| 27 | Special Practice | | | | 4 | | | | | | 30 | 30 | 1 |
| | **Total for the 4 semester:** | **3** | **2** | | **2** | **135** | | **135** | | **270** | **540** | **810** | **30** |
| 28 | Electronic Systems in Automobiles | 5 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 29 | Internal Combustion Engine Fundamentals, part 2 | 5 | | | | 30 | | | 15 | 45 | 115 | 160 | 6 |
| 30 | Mechanisms and Systems in Internal Combustion Engines | 5 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 31 | Combined and Alternative Engines | | 5 | | | 30 | | 15 | 15 | 60 | 100 | 160 | 6 |
| 32 | Machine Elements, project | | | 5 | | | | | 30 | 30 | 30 | 60 | 2 |
| 33 | Technical Safety | | | | 5 | 15 | | 15 | | 30 | 90 | 120 | 4 |
| | **Total for the 5 semester:** | **3** | **1** | **1** | **1** | **135** | | **90** | **60** | **285** | **535** | **820** | **30** |
| 34 | Design Methods of Internal Combustion Engines | | 6 | | | 30 | 15 | | | 45 | 90 | 135 | 5 |
| 35 | Design Methods of Internal Combustion Engines, project] | | | 6 | | | | | 30 | 30 | 30 | 60 | 2 |
| 36 | Maintenance of Transport Vehicles | 6 | | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 37 | Testing of Internal Combustion Engines | 6 | | | | 30 | | 30 | | 60 | 75 | 135 | 5 |
| 38 | Gasoline Fuel Sytems | 6 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 39 | LPG and CNG Fuel Systems | | 6 | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 40 | Specialized Practice | | | | 6 | | | | | | 60 | 60 | 2 |
| | **Total for the 6 semester:** | **3** | **2** | **1** | **1** | **150** | **15** | **90** | **30** | **285** | **535** | **820** | **30** |
| 41 | Repair of Transport Vehicles | 7 | | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 42 | Diesel Fuel Sytems | 7 | | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 43 | CAD Systems in Transport Engineering | | 7 | | | 15 | | 45 | | 60 | 100 | 160 | 6 |
| 44 | Vibration Problems in Automobiles | | 7 | | | 30 | | 15 | | 45 | 90 | 135 | 5 |
| 45 | Design of Transport Vehicles | 7 | | | | 30 | | 30 | | 60 | 130 | 190 | 7 |
| 46 | Design of Transport Vehicles, project | | | 7 | | | | | 30 | 30 | 30 | 60 | 2 |
| | **Total for the 7 semester:** | **3** | **2** | **1** | | **135** | | **120** | **30** | **285** | **530** | **815** | **30** |
| 47 | Economics | | | | 8 | 30 | 30 | | | 60 | 75 | 135 | 5 |
| 48 | Automotive Torsional Vibrations | 8 | | | | 30 | | 15 | | 45 | 145 | 190 | 7 |
| 49 | Automotive Torsional Vibrations, project | | | 8 | | | | | 30 | 30 | 30 | 60 | 2 |
| 50 | Ecology of Transport Vehicles | 8 | | | | 30 | | 30 | | 60 | 100 | 160 | 6 |
| 51 | CAD Systems in Automotive Engineering | 8 | | | | 30 | | 30 | | 60 | 130 | 190 | 7 |
| | **Total for the 8 semester:** | **3** | | **1** | **1** | **120** | **30** | **75** | **30** | **255** | **480** | **735** | **27** |
| | **Total for all corses of education:** | **23** | **13** | **4** | **11** | **1065** | **120** | **810** | **210** | **2205** | **4220** | **6425** | **237** |

**Facultative subjects**

| No | Subject Name | Types of term control | | | | Semester auditorium load incl: | | | | | 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 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| 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 | | |
| | | | |
| | | | |
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**Accepted from AU with**

Protocol No 22 / 22.06.2017

Modified with Protocols No 32 / 29.06.2018

**Valid from the 2017 / 2018 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 TET:
/ Assoc. Prof. PhD Ivanov Z. /

Dean of Faculty FMET:
/ Assoc. Prof. PhD Antonov G. /

*03.09.2019*