**DESCRIPTION OF THE COURSE**

<table>
<thead>
<tr>
<th>Name of course</th>
<th>Code: BTTM48</th>
<th>Semester: 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economics of transport</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Method of teaching:
- Lectures and laboratory work

Lessons per week:
- L – 2 hours; LW – 1 hour

Number of credits: 5

**LECTURER:**
- Assoc. Prof. Ph.D Tz.Laleva (FM), tel.: 965-3413, email: laleva@tu-sofia.bg
- Assoc. Prof. Ph.D. I.Iliev FM), tel.: 965-3191, email: ivil@tu-sofia.bg

Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Compulsory (optional) for the students degree course in “Transport Technology and Management” of the Faculty of Transport at the TU – Sofia, educational-qualification “bachelor”.

**AIMS AND OBJECTIVES OF THE COURSE:** The aim of the economics education is the students to receive a fundamental knowledge in the theory of micro and macroeconomics, allowing them as experts engineers to implement their skills better in the market economy, knowing the laws and objective laws as well as the rules of the economics game, so that they could realize their skills as specialists in Transport Machinery and Technologies.

**DESCRIPTION OF THE COURSE:** This is a basic economics course, which is being studied at all of the universities in Western Europe. It reveals the principles, the objective laws and functioning mechanisms of the markets for goods, services, labour and capitals. The economic part of the body politic as an economic subject is being derived. In this reference the tax system of the economy is being analyzed. The course introduces a macroeconomic model of a stable and dynamic development. It pays attention to the monetary-bank system, including the functioning of the monetary council as an instrument for financial discipline. It examines the macroeconomic policy, regarding the unemployment, inflation, economic integration, and so on.

**PREREQUISITES:** A knowledge in economics is required.

**TEACHING METHODS:** Lectures, tutorials, group seminars or workshop, laboratory work, course work tests, projects, other methods.

**METHOD OF ASSESSMENT:** Two one-hour assessments at mid and end of semester (80%), laboratory work (20%). The exam includes individual tasks, consisting of theoretical questions, tests and problems.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:**
**DESCRIPTION OF THE COURSE**

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM49</th>
<th>Semester: 7</th>
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</thead>
<tbody>
<tr>
<td>Technology of Loading-Unloading Processes</td>
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</table>

<table>
<thead>
<tr>
<th>Type of teaching:</th>
<th>Lessons per week:</th>
<th>Number of credits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures and laboratory work, Semester projekt</td>
<td>L – 3 hours; LW – 2 hours</td>
<td>6</td>
</tr>
</tbody>
</table>

**LECTURER:**
Assoc. Prof. D. Ditchev, Ph.D. (FT), тел. 965 2771, e-mail: ditchev@tu-sofia.bg
Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Compulsory for the students specialty “Transport Technology and Management” BEng programme of the Faculty of Transport.

**AIMS AND OBJECTIVES OF THE COURSE:** To receive the knowledge and skills necessary for the individual theoretical and practical problem-solving regarding the development and integration of loading-unloading and storage processes and manipulation technology, as well as an introduction to the technical devices, necessary for their execution. The Semester project allows the students to individually apply the acquired skills and knowledge for the solving of technical and technological problems regarding the transport-manipulation systems.

**DESCRIPTION OF THE COURSE:** The course “Technology of Loading-Unloading Processes” provides expansive practical and theoretical knowledge on the essence, intricacies and construction of the contemporary and perspective transport-manipulation systems and the technologies that help their functioning; the loading-unloading machines and technical devices necessary for the execution of mechanic and automated manipulation processes and technologies for loading and affixing of loads in transport vehicles.


**TEACHING METHODS:** Lectures presented using multimedia and visual materials, labs with lab reports and course work with final presentation.

**METHOD OF ASSESSMENT:** Four tests throughout the two semesters (20%), labs with lab reports (50 %), final exam at the end of the semester V (30 %). The completion of a Semester Project and a graded presentation at the end of semester IV.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:**
DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM50</th>
<th>Semester: 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Modes Relationships</td>
<td>\n</td>
<td>Type of teaching:</td>
</tr>
<tr>
<td>Lectures and laboratory work</td>
<td>L – 3 h; LW – 1 h</td>
<td>5</td>
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</tbody>
</table>

LECTURER:
Assoc. Prof. Ph.D. Ivan Penkov (TF), tel. 965 2308, Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory for the students’ speciality "Technology and Management of Transport" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to make students familiar with discovery, modelling and management of the basic features, parameters and processes which determine the transport modes relationships.

DESCRIPTION OF THE COURSE: The course includes general description of basic features of the technological, organisational, managerial and technical relationships between different transport modes. A significant part is devoted to the grounds of areas and borders of use of the different kinds of transport in cargo and passenger’s transportations.

PREREQUISITES: High enough level of knowledge in technology and organization of vehicle transportation, transport systems and traffic flow theory and logistics.

TEACHING METHODS: Lectures, laboratory works. During the laboratory works students define the parameters which characterize the area of usage of the different types of transport in cargo and passenger transportation. They also get knowledge in the area of modeling and optimizing processes in the transport system.

METHOD OF ASSESSMENT: Write examination.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM51</th>
<th>Semester: 7</th>
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</thead>
<tbody>
<tr>
<td>Isothermal Transport</td>
<td></td>
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</tbody>
</table>

Type of teaching: Lectures and Laboratory work
Lessons per week: L – 2 hours; LW – 1 hour
Number of credits: 4

LECTURER:
Assoc. prof. Borislav Damianov, M.Sc., Ph.D. (FT), tel.: 9652773, 9653771, email: bdamian@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory course for full time and part time students enrolled in the specialty “Technology and Management of the Transport” in pursuit for their Bachelor’s degree.

AIMS AND OBJECTIVES OF THE COURSE: The content of the course is designed according the schedules and programs from the previous engineering courses as well as the courses that are going to be scheduled in the future semesters.

DESCRIPTION OF THE COURSE: The course “Isothermal transport” is designed especially for the students enrolled in the specialty “Technology and Management of the Transport”. The object is the Isothermal Transport for both motor and railway machinaries. Theoretical basics, structure, principles of the operational exploitation and installation of the isothermal cars and wagons are the main outlines of the course. Other key parts are the air conditional systems used today in the cars and railway wagons.

PREREQUISITES: Basic knowledge of fundamental and special courses from curriculum of the specialty “Technology and Management of the Transport”.

TEACHING METHODS: Lectures are given with the aid of supporting materials, posters, slides and multimedia. The Laboratory exercises follow the laboratory manual. Students are required to make a laboratory work reports, checked and marked by the lecturer.

METHODS OF ASSESSMENT: The examination consist of three tests throughout the semester. The final grade is formed on the average of these tests.

INSTRUCTION LANGUAGE: Bulgarian.

BIBLIOGRAPHY:
1. Осадчук Г.И., Е.С.Фарафонов. Холодильное оборудование вагонов и кондиционирование воздуха. Транспорт, М., 1974.
2. Зворыкин М.Л., Б.М.Черкез. Кондиционирование воздуха в пассажирских вагонах. Транспорт., М., 1977.
7. Яковлев И.Н., Шаповаленко М.М. Изотермический подвижной состав. М., Транспорт, 1977.
DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM52</th>
<th>Semester: 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machines for construction and repair of transport infrastructure</td>
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<td></td>
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Type of teaching: Lectures and Laboratory work

<table>
<thead>
<tr>
<th>Hours per week:</th>
<th>Credits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>L – 2 hours, LW – 1 hours</td>
<td>4</td>
</tr>
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</table>

LECTURER:
Assoc. Prof. Ph.D. Oleg Markov Krastev (FT), tel.: 9653769; e-mail: okrastev@tu-sofia.bg, Technical University – Sofia.

COURSE STATUS IN THE CURRICULUM: Compulsory course for regular and extramural students of the specialty “Transport technology and management”, Faculty of Transport, TU Sofia, educational and qualification degree Bachelor.

AIMS AND OBJECTIVES OF THE COURSE: The aim of the course is acquaint students with structure, typical constructive realizations and exploitation of special transport machines for repairs and also to have knowledge and habits of exploitation of these machines.

DESCRIPTION OF THE COURSE: The course acquaints students with structure, constructive characteristics and exploitation of special transport machines for maintenance and repairs of railway tracks and catenaries and also automobile roads. In course are examined the specific peculiarity of work and constructive realizations of different types machines and theirs aggregates.

PREREQUISITES: Basic knowledge of fundamental and special courses from curriculum of the specialty “Transport technology and management”.

TEACHING METHOD: Lectures given with the aid of supporting materials, posters, slides and multimedia. Laboratory work, carried out as per the laboratory manual and laboratory work reports, prepared by the students and checked by the lecturer.

METHOD OF ASSESSMENT: Three tests during the semester (10 %), laboratory works (10 %) and written exam at the end of 7th semester (80 %).

INSTRUCTION LANGUAGE: Bulgarian language.

**DESCRIPTION OF THE COURSE**

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Modeling and Optimization of the Transport Processes</th>
<th>Code: BTTM53</th>
<th>Semester: 7</th>
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<tr>
<td>Type of teaching:</td>
<td>Lectures, laboratory work, Course work</td>
<td>Lessons per week: L – 2 hours; LW – 2 hours</td>
<td>Number of credits: 6</td>
</tr>
</tbody>
</table>

**LECTURER:**
Assoc. Prof. D. Ditchev, Ph.D. (FT), тел.: 965 2771, e-mail: ditchev@tu-sofia.bg
Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Compulsory for the students specialty “Transport Technology and Management” BEng programme of the Faculty of Transport.

**AIMS AND OBJECTIVES OF THE COURSE:** Presents the specialized methods and devices for the research, modelling and optimization of transport processes.

**DESCRIPTION OF THE COURSE:** Specific themes on the analysis of the transport processes’ condition and dynamic, methods for the optimization of distribution and movement of transport flows, the optimization of the operational activity of transport subsystems and the development of the transport technical structure are included in the course. The study of these issues is a necessary part of a professional engineering education, since it provides knowledge and skills necessary for the solution of complicated problems on the management of transportation systems and for the better understanding of transportation efficiency. The Course work allows the students to individually apply the acquired knowledge and skills in solving technical and technological problems regarding transport processes.

**PREREQUISITES:** The subject “Modeling and Optimization of the Transport Processes” utilizes knowledge covered in “Mathematics”, “Informatics,” “Transport Systems,” and others.

**TEACHING METHODS:** Lectures presented using multimedia and visual materials, labs with lab reports and course work with final presentation.

**METHOD OF ASSESSMENT:** Two tests throughout the semester (8 %), labs with lab reports (32 %), final exam (30 %) and course work (30 %).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:**
4. Петров Д.П., Контейнери и контейнеризация. С., Техника, 1980.
CHARACTERISTICS OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM54</th>
<th>Semester: 6</th>
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<tbody>
<tr>
<td>Sport</td>
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<table>
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<tr>
<th>Type of teaching:</th>
<th>Lessons per week:</th>
<th>Number of credits:</th>
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<tbody>
<tr>
<td>Tutorials</td>
<td>T – 3 hours</td>
<td>0</td>
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</tbody>
</table>

TEACHERS:
Prof. Ivan Jordanov Bozov, Senior Lecturer Ivan Petrov Venkov; Senior Lecturer Valeri Georgiev Peltekov, Senior Lecturer Rositsa Yanakieva Kovachki; Senior Lecturer Rumyana Nikolova Vetova, Senior Lecturer Ivan Stoyanov Ivanov; Senior Lecturer Konstantin Petrov Konstantinov; Senior Lecturer Emil Slavi Kolchev, Senior Lecturer Alexander Alexandrov Alexandrov; Senior Lecturer Asya Krasiteva Tsarova - Vassileva; Lecturer Krassimira Stoyanova Ivanova; Lecturer Todor Stefanov Ivanov, Lecturer Georgi Dimitrov Palazov, Senior Lecturer Sonia Danailova Simova-Paspalanova; Senior Lecturer Rumyana Georgieva Tasheva, Senior Lecturer Mariana Vladimirova Andreeva, Senior Lecturer Ivan Dimitrov Stefanov, Senior Lecturer Plamen Antonov Antonov, Senior Lecturer Petar Stefanov Nikolov, Senior Lecturer Velizar Vaskov Lozanov, Senior Lecturer Ivan Georgiev Ivanov; Senior Lecturer Georgi Nikolov Stoychev, Senior Lecturer Georgi Petrov Vassilev, Senior Lecturer Kapka Konstantinova Vassileva, Senior Lecturer Petya Yordanova Arbova; Lecturer Milena Milkova Lazarova; Lecturer Valentine Valentinov Velev, Lecturer Dimitar Ivanov Dimov

Technical University - Sofia,
DFVS, Section of Individual Sports and Games Sports and Section of Water and mountain sports

COURSE STATUS IN THE CURRICULUM: Facultative discipline for students of specialty “Technology and Management of Transport” of Faculty of Transport of TU-Sofia required for obtaining a Bachelor’s Degree.

AIMS AND OBJECTIVES OF THE COURSE: The purpose of teaching physical education is through the methods and means of physical education to increase physical activity of students. Additional sporting skills of the respective sport aim to create lasting habits for individual classes in physical education. Talented athletes to protect their honor and prestige to TU-Sofia in sports competitions.

DESCRIPTION OF THE COURSE: Students are trained with a flexible modular system, tailored to their abilities and desire, the choice of sport. Programs allow to improve the skills of secondary and primary education in selected sports. Students receive a thorough knowledge of the sport. Sports Complex TU possible to conduct many types of sports. Along with sports practiced outside the sports complex, students learn and improve in 20 different sports.

TEACHING METHODS: In structuring the curriculum using practical communicative approach consistent with the functional and physical abilities of students. The modular principle enables learning sporting skills in this sport.

METHOD OF ASSESSMENT: Carry out tests of physical ability. Tests for motor skills and habits in different sports.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: Methodological manuals and regulations in selected sports.
DESCRIPTION OF THE COURSE

Name of the Course: Systems for Control of Locomotives
Code: BTTM55
Semester: 7

Type of teaching: Lectures and Laboratory work
Hours per week: L – 3 hours, LW – 2 hours
Credits: 0

LECTURERS:
Assoc. Prof. Ph.D. Kiril Hristov Velkov, M.Sc. – tel.:9653411; e-mail: khvel@tu-sofia.bg,
Assoc. Prof. Ph.D. Oleg Markov Krastev, – tel.:9653769; e-mail: okrastev@tu-sofia.bg,
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Facultative subject for students of the specialty “Transport Machinery and Technologies” and “Technology and Transport Management”, Faculty of Transport, TU Sofia, educational and qualification degree – Bachelor.

AIMS AND OBJECTIVES OF THE COURSE: The aim of the course is acquaint students with structure typical constructive realizations of systems for control of the locomotives and theirs practical applications. Students could make quick diagnose of various failures in these types systems.

DESCRIPTION OF THE COURSE: The course acquaints students with constructive characteristics of systems for control of the locomotives. In course are examined typical for railway transport electrical apparatuses and machines.

PREREQUISITES: Basic knowledge of fundamental and special courses from curriculum of the specialty “Technology and Transport Management”.

TEACHING METHOD: Lectures given with the aid of supporting materials, posters, slides and multimedia. Laboratory work, carried out as per the laboratory manual and laboratory work reports, prepared by the students and checked by the lecturer.

METHOD OF ASSESSMENT: Written exam at the end of 7th semester.

INSTRUCTION LANGUAGE: Bulgarian language.

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>Code: BTTM56</th>
<th>Semester: 7</th>
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</thead>
<tbody>
<tr>
<td>Technical Service of Locomotives</td>
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</tbody>
</table>

Type of teaching:
Lectures and Laboratory work

Hours per week:
L – 2 hours, LW – 2 hours

Credits: 0

LECTURERS:
Assoc. Prof. Ph.D. Kiril Velkov, – tel.:9653411; e-mail: khvel@tu-sofia.bg,
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Facultative subject for students of the specialty “Transport Machinery and Technologies” and “Technology and Transport Management”, Faculty of Transport, TU Sofia, educational and qualification degree – Bachelor.

AIMS AND OBJECTIVES OF THE COURSE: The aim of the course is acquaint students with basic principles and structure of working in Bulgarian State Railways. Students have a chance to receive a qualification “Locomotive Driver (Engineer)” or “Mechanic on technical exploitation of wagons” after successful passed practical exams.

DESCRIPTION OF THE COURSE: The course acquaints students with norms for technical exploitation, signalization and blockings in railway transport. There are studied exploitation and repair activities in locomotive’s and wagon’s depots.

PREREQUISITES: Basic knowledge of fundamental and special courses from curriculum of the specialties “Transport Machinery and Technologies” and “Technology and Transport Management”.

TEACHING METHOD: Lectures given with the aid of supporting materials, posters, slides and multimedia. Laboratory work, carried out as per the laboratory manual and laboratory work reports, prepared by the students and checked by the lecturer.

METHOD OF ASSESSMENT: Written exam at the end of 7th semester.

INSTRUCTION LANGUAGE: Bulgarian language.

DESCRIPTION OF THE COURSE

Name of the course: Organization and management of motor transport undertaking
Code: BTTM57
Semester: 8

Type of teaching: Lectures, laboratory work and course project
Lessons per week: L – 2 h; LW – 2 h
Number of credits: 4

LECTURER:
Assoc. Prof. Ph.D. Emil Madjarski (TF), tel.965 2308, email: majarski@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory for the students’ speciality “Technology and Management of Transport” at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to make the students familiar to possible organisational and managerial approaches for maintenance and storage of vehicles in the automotive workshops, garages, etc.

DESCRIPTION OF THE COURSE: The course includes methodological, technological and organisational topics of planning, organisational and managerial activities of auto-transport enterprise. Basic methods for determination of the production programme, technological equipment and number of employed persons are given.

PREREQUISITES: High enough level of knowledge in Internal Combustion Engines and Transport Machinery Design and Maintenance is required.

TEACHING METHODS: Lectures, laboratory works, course project. During the laboratory works students develop different variants of working regimes, plans, technological equipment and personnel. The project covers the resolution of several successive stages of technological design of road service with a choice of technological solutions and necessary equipment.

METHOD OF ASSESSMENT: Written exam at the end of 8th semester.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name or the course:</th>
<th>Code: BTTM58</th>
<th>Semester: 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trading exploitation of transport</td>
<td>Lessons per week: L-3 hours; LW-2 hours</td>
<td>Number of credits: 4</td>
</tr>
</tbody>
</table>

LECTURER:
Assoc. Prof. Ph.D. Svetla Stoilova (FT), Tel.:9653922; E-mail: stoilova@tu-sofia.bg
Technical University of Sofia,

COURSE STATUS IN THE CURRICULUM: Compulsory course for students for full- and part-time training, specialty Technology and Organization of Transport of Faculty of Transport at Technical University – Sofia, educational and qualification degree Bachelor.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to make the students well grounded in basic topics of theory of operation using in the trading exploitation of transport.

DESCRIPTION OF THE COURSE: The course gives the students the basic elements of the organization trading exploitation the railway and automotive transport. They studied problems of regulations, normative papers, interaction between private and government firms, necessary document for internal and international transport.

PREREQUISITES: Basic knowledges in Organization and Traffic Control in railway transport, Technology and organization of auto transport, Economics

TEACHING METHODS: Lectures given with the aid of supporting materials, posters, slides. Laboratory work, carried out as per the laboratory work reports, prepared by the students and checked by the lecturer.

METHOD OF ASSESSMENT: Written exam at the end of 8th semester.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

Name of the course: Marketing and Management in Transport
Code: BTMT59
Semester: 8

Type of teaching:
Lectures and course work
Lessons per week:
L – 2 h; LW – 0 h
Number of credits: 3

LECTURER:
Assoc. Prof. Ph.D. V. Kirov (TF) – tel. 965 3931; email: vkirov@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory for the students’ speciality "Technology and Management of Transport" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: The course aims to teach the basics of market research and related management decisions in the transportation business.

DESCRIPTION OF THE COURSE: The main elements of marketing tools - product, pricing, marketing and promotion, and their specific in market cars, spare parts and accessories, workshop and garage equipment technology and maintenance services, as well as in transport activity. Formulated conditions for the effectiveness of the activities of companies and provides methodological foundations for the development of business plans. Perform segmentation and comparative feasibility analysis of cars and sales in various classes. Analyse the status and trends of the Bulgarian and global automotive markets. Give basic concepts in management and decision management solutions.

PREREQUISITES: Basic knowledge of transport economics and theory of market economy.

TEACHING METHODS: Lectures and course work. The course work includes technical and economic comparative analysis of automobiles, market research and identification of analogues of competitors, choice of criteria, selection of data, preparation of feasibility comparative analysis in tabular form conclusions.

METHOD OF ASSESSMENT: Written exam at the end of 8th semester.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTMT60.1</th>
<th>Semester: 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and repair of Internal Combustion Engines</td>
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<table>
<thead>
<tr>
<th>Type of teaching:</th>
<th>Lessons per week:</th>
<th>Number of credits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures and laboratory work</td>
<td>L – 2 h; LW – 2 h</td>
<td>3</td>
</tr>
</tbody>
</table>

LECTURER:
Assoc. Prof. Ph.D. Eng. Evgeni Dimitrov (FT), tel: 965 3583; email: etzd@tu-sofia.bg, Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Selective course for students of specialty, “Technology and Transport Management” of Department of Transport on Technical University – Sofia, Bachelor degree.

AIMS AND OBJECTIVES OF THE COURSE: Mastering the main points of maintenance and repair of internal combustion engines associated with the most efficient and modern methods and tools for maintenance and repair them and restore their parts after prolonged use.

DESCRIPTION OF THE COURSE: Students get acquainted with the main points concerning the organization and management of the process of preservation and restoration of the efficiency of internal combustion engine. Students learn the technology and technical equipment maintenance and repair of internal combustion engine as a whole and its elements.

PREREQUISITES: The course is based on knowledge acquired in the following disciplines: “Heat Transfer”, “Strength of Materials”, “Technology of Materials”, “Internal Combustion Engines” and etc.

TEACHING METHODS: Lectures, delivered with the aid of visual materials, slides, panels, transparencies. Laboratory exercises for which students make reports, checked by the teacher.

METHOD OF ASSESSMENT: Written examination at the end of the semester.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTMT60.2</th>
<th>Semester: 8</th>
</tr>
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<tbody>
<tr>
<td><strong>Lectures and laboratory work</strong></td>
<td>Lessons per week: L- 2 hours; LW- 2 hours</td>
<td>Number of credits: 3</td>
</tr>
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</table>

**LECTURER:**
Assoc. Prof. Ph.D. Lilo Petkov Kunchev (FT), tel. 965 21 06, email lkunchev@tu-sofia.bg
Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:**
Obligatory for the students’ specialty "Technology and Management of Transport" at the Faculty of Transport, bachelor level of degree.

**AIMS AND OBJECTIVES OF THE COURSE:**
The purpose of education "Vehicle regulation and testing” is to deepen students' knowledge in the field of methods, resources and regulations for testing of automotive engineering. They allow them to quickly and competently address issues related to planning and implementation of engineering experiment in the conduct of testing both the nodes and mechanisms automotive engineering and automotive engineering as a whole.

**DESCRIPTION OF THE COURSE:**
Deals with issues directly related to the functional properties of the car and its units, and those affecting its structural reliability. Students learn the planning and delivery of engineering experiment for testing automotive engineering as well as regulations relating to production, reconstruction and validation of automotive equipment in Bulgaria and the European Community.

**PREREQUISITES:**
Basic knowledge in “Mathematics”, “Metrology and Measuring Equipment”, “Internal Combustion Engines”, "Theory of cars” and “Construction of vehicles”.

**TEACHING METHODS:**
The laboratory exercises consolidate and expand the acquired theoretical knowledge in lectures. In laboratory classes students are introduced to methods for analysis of operational characteristics of automotive equipment and its units and mechanisms, principles of operation of specialized instrumentation, and practical skills for analyzing data from the experiment.

**METHOD OF ASSESSMENT:**
Written exam 2 hour at the end of 8 semester - (80 %), laboratories and course work - (20%).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:** Цимбалин В. и др., Испытания автомобилей, Машиностроение, 1978 г.
DESCRIPTION OF THE COURSE

Name of the course: Logistics and Logistics Technics  
Code: BTTM60.3
Semester: 8

Type of teaching: Lectures, Laboratory work
Lessons per week: L – 2 hours; LW – 2 hours
Number of credits: 3

LECTURER: Assoc. Prof. eng. lilo Kunchev (TF), tel: 965 2106, e-mail lkunchev@tu-sofia.bg, Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Elective discipline in for the full –time students in specialty “Technology and Management of Transport” in the Faculty of Transport – TU – Sofia for the educational qualification “bachelor”.

AIMS AND OBJECTIVES OF THE COURSE: The aim of the “Logistics and Logistics Technics” course is to extend the knowledgments of the students in the in the field about the Fork Lift Trucks, tendency in the development of their specific systems and systems set in motion. That will be useful for them to solve the questions quickly and competently concerning with the peculiarities and different kind Fork Lift Trucks and their technical characteristics, pull – speed and break properties. Gives knowledge’s in the design, organization and management of logistics systems

DESCRIPTION OF THE COURSE: The subjects are related with the construction, Exploitation properties and design of the Fork Lift Trucks. The discipline creates the abilities to analyze the construction and their sizing. The attention is paid on the systems set in motion and of the rests systems, which are different from the traditionally automotive techniques.

The main principles, methods and technologies of transport logistics and operation, logistic equipment; technology for cargo handling, planning, organization and management of the supply chain, development of logistics strategies and technologies, management of stocks. Students are also international standards used worldwide to determine the supply conditions in international and domestic

PREREQUISITES: It is necessary the main knowledgments; about Mechanics, Chemistry, Electrotechnics and Electronics, Internal Combustion Engine, Automotive Machinery.

TEACHING METHODS: Lectures, tutorials, group seminars or workshop, laboratory work, other methods. The course project contains motivation and choice o the technical characteristic, calculation of the pull – speed and break properties of the Fork Lift Trucks and Logistics and, kinematics and stress design of the specific element. The students extend their knowledgments in the laboratory work and the lectures simultaneously. It can be analyzed some parameters and constructions of the Fork Lift Trucks. The experiments are conformable with the standard methods for the evaluation of the parameters of the Fork Lift Trucks.

METHOD OF ASSESSMENT: Two one-hour assessments at mid and end of semester (80%), laboratories (20%).

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course: Logistics and Strategies in Transportation</th>
<th>Code: BTTM 60.4</th>
<th>Semester: 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of teaching: Lectures and Laboratory work,</td>
<td>Lessons per week: L – 2 hours; LW – 2 hours</td>
<td>Number of credits: 3</td>
</tr>
</tbody>
</table>

LECTURER:
Assoc. Prof. D. Ditchev, PhD (FT), тел.: 965 2771, e-mail: ditchev@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Optional course for the student specialty “Transport Technology and Management” BEng programme of the Faculty of Transport.

AIMS AND OBJECTIVES OF THE COURSE: To receive the knowledge and skills necessary for the individual theoretical and practical problem-solving regarding the development, evaluation and integration of logistic chains for the provision of transport services for the shipping of loads by transport companies.

DESCRIPTION OF THE COURSE: Main topics: Major principles and objects of logistics management; Major logistics operations and functions; Elements and classification of logistics systems; Main logistics technologies; Information supply for logistics management; Logistics management in securing material resources; Logistics management of production processes and distribution; Logistics management of reserves and storage; The transportation firm as an object of management; Types of strategies for the development of the transportation firm; Activity planning of the transportation firm; Strategic analysis and strategy choices; Implementation, evaluation and correction of the strategic plan.


TEACHING METHODS: Lectures presented using multimedia and visual materials; course includes labs with lab reports

METHOD OF ASSESSMENT: Two tests throughout the semester (20%), labs with lab reports (30%), final exam (50%).

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name or the course:</th>
<th>Transportation logistics management and freight forwarding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code:</td>
<td>BTTM60.5</td>
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<tr>
<td>Semester:</td>
<td>8</td>
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<tr>
<td>Type of teaching:</td>
<td>Lectures and laboratory work</td>
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<tr>
<td>Lessons per week:</td>
<td>L-2 hours; LW-2 hours</td>
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<td>Number of credits:</td>
<td>3</td>
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</tbody>
</table>

LECTURER:
Assoc. Prof. Ph.D. Svetla Stoilova (FT), Tel.:9653922; E-mail: stoilova@tu-sofia.bg
Technical University of Sofia,

COURSE STATUS IN THE CURRICULUM: Compulsory course for students specialty Transport Technology and Management of Transport of Faculty of Transport at Technical University – Sofia, educational and qualification degree Bachelor.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to make the students well grounded in basic topics of theory of operation using in the trading exploitation of transport.

DESCRIPTION OF THE COURSE: The course gives the students the basic elements of the organization trading exploitation the railway and automotive transport. They studied problems of regulations, normative papers, interaction between private and government firms, necessary document for internal and international transport.

PREREQUISITES: Basic knowledges in Organization and Traffic Control in railway transport, Technology and organization of auto transport, Economics

TEACHING METHODS: Lectures given with the aid of supporting materials, posters, slides. Laboratory work, carried out as per the laboratory work reports, prepared by the students and checked by the lecturer.

METHOD OF ASSESSMENT: Written exam at the end of 8th semester.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM60.6</th>
<th>Semester: 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractive and Brake Security Of The Trains</td>
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<table>
<thead>
<tr>
<th>Type of teaching:</th>
<th>Hours per week:</th>
<th>Credits:</th>
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<tr>
<td>Lectures and Laboratory work</td>
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<td>3</td>
</tr>
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</table>

**LECTURER:**
Assoc. Prof. Ph.D. Kiril Hristov Velkov (FT), tel.: 965 34 11; e-mail: khvel@tu-sofia.bg, Technical University – Sofia

**COURSE STATUS IN THE CURRICULUM:** Elective course for regular and extramural students of the specialty “Transport technology and management”, Faculty of Transport, TU Sofia, educational and qualification degree Bachelor.

**AIMS AND OBJECTIVES OF THE COURS:** The aim of this subject is students receive knowledge about main points in the area of the control of the train movement, design features and theoretical basis of the brake equipment and the brake technologies.

**DESCRIPTION OF THE COURSE:** This course is dedicated to the basic methods for the calculation the resistance of the train movement, calculation dependence between the speed of the movement and the distance, ways of calculating the brake distances etc. Students develop their skills to make appropriate choice of the technologies and equipment for the train controlling by usage of that knowledge.

**PREREQUISITES:** Basic knowledge of fundamental and special courses from curriculum of the specialty “Transport technology and management”.

**TEACHING METHOD:** Lectures given with the aid of supporting materials, posters, slides and multimedia. Laboratory work, carried out as per the laboratory manual and laboratory work reports, prepared by the students and checked by the lecturer.

**METHOD OF ASSESSMENT:** The assessment is formed by two written tests done during the term – 80% and with enters tests of the labs – 20%.

**INSTRUCTION LANGUAGE:** Bulgarian language.

**BIBLIOGRAPHY:**
2. Ненов Н. Движение на влаковете и оптимални режими на управление. София, ВТУ, 2008.
3. Тонев, С. Основи на теорията, изчисленията и експлоатацията на спирачните системи на подвижния железопътен състав. С., ВТУ, 1993.
4. Розенфельд, В. Е., И. П. Исаев, Н. Н. Сидеров. Теория электрической тяги. М., Транспорт, 1983.
DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course: Auto technical expertise</th>
<th>Code: BTMT60.7</th>
<th>Semester: 8</th>
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<tr>
<td>Type of teaching: Lectures and Laboratory work</td>
<td>Lessons per week: L – 2 h; LW – 2 h</td>
<td>Number of credits: 3</td>
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</tbody>
</table>

LECTURER:
Assoc. Prof. Angel Angelov, Ph.D., tel.: 965 2584, email: apet@abv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Optional for the students’ speciality "Transport Technology and Management" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: The purpose of education "Auto technical expertise" is for the students to acquire knowledge to draw conclusions about technical expertise by applying modern approaches, methods and methodologies for engineering analysis of traffic accidents, insurance and other events.

DESCRIPTION OF THE COURSE: Students learn modern methods for expert analysis and conclusions of the working as experts in: criminal investigation, court cases of serious accidents and sharing of property, cars, etc. and experts scoreboard, damage and residual value of vehicles for insurance companies, road transport companies, auto transportation companies and companies selling cars and service facilities. Students acquainted with the basic legal principles governing the activities of auto experts. Students are acquainted with modern methods of the crime scene, the cars and testing process of an accident occurring and the technical possibilities of its prevention.

PREREQUISITES: Basic knowledge in mathematics, physics, mechanics, internal combustion engines, automotive equipment, technology and organization of transport, traffic safety and more.

TEACHING METHODS: Lectures exported using visual aids, slides, tables, slides and video. Laboratory work performed under guidance and protocols produced by the students and checked by the teacher.

METHOD OF ASSESSMENT: Written exam at the end of 8th semester.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course: Transportation Systems</th>
<th>Code: BTTM60.8</th>
<th>Semester: 8</th>
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<tbody>
<tr>
<td>Type of teaching: Lectures and laboratory work</td>
<td>Lessons per week: L – 2 h; LW – 2 h</td>
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</table>

LECTURER:
Assoc. Prof. Ph.D. Ivan Penkov (TF), tel. 965 2308, Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Optional for the students’ speciality "Transport Technology and Management" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: The course aims to acquaint students with the peculiarities of the transport system and the basic characteristics of modes defining the possibilities for coordination and interaction between them.

DESCRIPTION OF THE COURSE: The course included an examination of technical, organizational and technological features of the modes and the efficiency of transport systems, the role of transport in the stock management of production systems, elements of the transport process, characterizing transport systems for freight and passenger, principles for determining the basic operating parameters of modes and more.

PREREQUISITES: Basic knowledge of organization and management of the transport process.

TEACHING METHODS: Lectures and laboratory exercises. Laboratory classes are conducted by the laboratory group performs the task set by the assistant and run it under his direction. Task consists of presenting concrete solutions on the relevant topics. Decisions are justified by the necessary calculations in accordance with the requirements and specificity of transport systems.

METHOD OF ASSESSMENT: Write examination.

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Subject name:</th>
<th>Code: BTTM60.9</th>
<th>Semester: 8</th>
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<tr>
<td>Finite Element Method</td>
<td>Lessons per week: L - 2 hours; LW - 2 hours</td>
<td>Number of credits: 3</td>
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LECTURER:
Assoc. Prof. Dr. Georgi Stoychev – tel. 965 2296, e-mail: gstoje@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Obligatory subject for the bachelor degree students in the Transport Technology and Management course at the Faculty of transport.

AIMS AND OBJECTIVES OF THE COURSE: To give knowledge about theory and application of Finite Element Method for structural analysis. To gain experience in using finite element software for solutions of static and dynamic problems.


PREREQUISITES: Mathematics; Physics; Mechanics I, II; Strength of materials I, II.

TEACHING METHODS: Lectures, using slides and laboratory work.

METHOD OF ASSESSMENT: Four written theoretical tests (50%) and four laboratory tests (50%).

INSTRUCTION LANGUAGE: Bulgarian.

Name of the course: Technical Acoustics in Transport  
Code: BTTM 60.10  
Semester: 8  
Type of teaching: Lectures and Laboratory work  
Lessons per week: L – 2 hours, LW – 2 hours  
Number of credits: 3

LECTURER:
Assoc. Prof. Dr I. Kralov (FT), tel.: 965 2053, e-mail: kralov@tu-sofia.bg 
Technical University – Sofia

COURSE STATUS IN THE CURRICULUM: Eligible discipline for the students specialty Transport Technology and Management, BEng program of the Faculty of Transport.

AIMS AND OBJECTIVES OF THE COURSE: The aim is students to have common the knowledge about main terms, principles and methods of the noise excitation, radiation and measurement resulting in noise reduction and assuring a healthy environment. Finishing this course students will be able to solve some problems of the noise reduction and noise insulation in transport machines and flows.

DESCRIPTION OF THE COURSE: The course includes the main chapters of the technical acoustics. The main terms, principles and methods of the noise excitation, radiation and measurement will be presented. The main sources of the noise in transport machines and transport flows will be analyzed as well as their influence upon the people. Some special principles of noise redaction and noise insulation will be treated.

PREREQUISITES: Basic knowledge in Mechanics, Calculus and Physics is necessary.

TEACHING METHODS: Lectures and Laboratory works.

METHODS OF ASSESSMENT: Test in the exam sessions.

TEACHING LANGUAGE: Bulgarian.

DESCRIPTION OF THE COURSE

Name of the course: Alternative Internal Combustion Engine
Code: BTTT61.1
Semester: 8

Type of teaching: Lectures and laboratory work
Lessons per week: L – 2 h; LW – 2 h
Number of credits: 3

LECTURER:
Assoc. Prof. Ph.D. Eng. Teodosi Evtimov (FT), tel: 965 3429; email: tevtimov@tu-sofia.bg, Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Optional for the students, speciality " Transport Technology and Management" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to enlarge the knowledge of the students about different types of Internal Combustion Engines and oil products, alternative fuel and lubricate oil.

DESCRIPTION OF THE COURSE: The course includes Oil, oil products, alternative fuel and lubricate oil. Special questions on fuel equipment of Internal Combustion Engine are included. A special attention to fuel cell, engines with exchange geometrical parameters, two stroke engine, ecological and adiabatic engines, super charge engines as engines for racing cars. Pay attention to gas turbine, Wancel and Stirling engines.

PREREQUISITES: High enough level of knowledge in Mechanics, Internal Combustion Engines and Thermodynamic is required.

TEACHING METHODS: Lectures and laboratory works. During the laboratory works, students do measuring and investigate different types of Internal Combustion Engines.

METHOD OF ASSESSMENT: Written examination during the semester.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. Маслинков, Ст. и кол. Теория на двигателите с вътрешно горене. Техника, София, 1994 г.
2. Бояджиев К. и кол. Автотракторни двигатели. Техника, София, 1990 г.
3. Евтимов Т. Ръководство за лабораторни упражнения по автотракторни и карни двигатели. ТУ, София, 1992 г.
5. Архангелски В. и кол. Автомобилни двигатели. Машиностроеие, Москва, 1967 г.
## DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>CAD in automotive design</th>
<th>Code: BTTMT61.2</th>
<th>Semester: 8</th>
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<td>Type of teaching:</td>
<td>Lectures and laboratory work, course work</td>
<td>Lessons per week: L- 2 hours; LW- 2 hours</td>
<td>Number of credits: 3</td>
</tr>
</tbody>
</table>

### LECTURER:

Assoc. Prof. Ph.D. Lilo Kunchev (FT). tel. 965 21 06, email lkunchev@tu-sofia.bg
Technical University of Sofia

### COURSE STATUS IN THE CURRICULUM:

Obligatory for the students’ specialty "Transport Technology and Management" at the Faculty of Transport, bachelor level of degree.

### AIMS AND OBJECTIVES OF THE COURSE:

The purpose of teaching "CAD in automotive design is for the students to learn innovative algorithms for the construction work of elements and nodes imposed by modern CAD systems. The students acquire practical skills for working with CAD.

### DESCRIPTION OF THE COURSE:

The course is a general engineering directly related to the profile of students future professionals .. The principles of working with CAD systems are widely used in engineering practice. Analyze innovative approaches in designing new products. The laboratory exercises are mastered practical work with CAD to create 3-D models and working drawings of components and assemblies and rotors. In coursework students build self 3-D model of the car unit and its animation tracking its proper functioning.

### PREREQUISITES:


### TEACHING METHODS:

Lectures delivered with visual materials, boards and slides. Laboratory work with protocols produced from the students and checked from lecturer. Laboratory classes are held in room equipped with computers. Coursework provides self-training of students using their computer.

### METHOD OF ASSESSMENT:

Written exam 2 hour at the end of 8 semester - (80 %), laboratories - (20%).

### INSTRUCTION LANGUAGE:

bulgarian
DESCRIPTION OF THE COURSE

| Name of the course: Algorithm for management of electronic systems of the car | Code: BTMT61.3 | Semester: 8 |
| Type of teaching: Lectures and laboratory work, course work | Lessons per week: L- 2 hours; LW- 2 hours | Number of credits: 3 |

LECTURER:
Assoc. Prof. Ph.D. Lilo Petkov Kunchev (FT) – tel. 965 21 06, email lkunchev@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Obligatory for the students’ specialty "Technology and Management of Transport" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: The object of the course "Algorithm for management of electronic systems of the car" is to introduce students to basic methods and tools for monitoring information in the sensors used by the car's systems and subsequent control of its implementing mechanisms.

DESCRIPTION OF THE COURSE: The course offers methods for managing these systems and how to build a virtual on-board computer of the car. Additional studies the methods and means to link different types sensor and actuators with the multifunction device. To realize the virtual control of the executive systems of the car, students get acquainted with the most commonly used programming language "G", working in an environment of software "LabView". To implement different versions of virtual instruments for monitoring, processing and analysis of different types sensor and actuators. The proposed discipline and has practical application related to building students' knowledge and skills in the use of systems for monitoring information from sensors and control actuators in the car.

PREREQUISITES: Basic knowledge in “Electronics and Electrical Engineering”, “Internal Combustion Engines”, “Automotive Machinery” is necessary.

TEACHING METHODS: Lectures exported with the help of visual materials, multimedia, posters and slides. Laboratory protocols, prepared by the students and checked by the teacher. The laboratory exercises consolidate and expand the acquired theoretical knowledge in lectures to students as a computer and analog - digital converter is realized recording information from sensors and control actuators. Simple to implement programs for recording and processing of signals specific to the vehicle sensors.

METHOD OF ASSESSMENT: Written exam 2 hour at the end of 8 semester - (80 %), laboratories - (20%).

INSTRUCTION LANGUAGE: Bulgarian

**DESCRIPTION OF THE COURSE**

<table>
<thead>
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<th>Name of the course:</th>
<th>Code: BTTM61.4</th>
<th>Semester: 8</th>
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<tr>
<td>Intermodal Transport</td>
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<table>
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<tr>
<th>Type of teaching:</th>
<th>Lessons per week:</th>
<th>Number of credits:</th>
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<tbody>
<tr>
<td>Lectures and laboratory work</td>
<td>L – 2 hours; LW – 2 hours</td>
<td>3</td>
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</table>

**LECTURER:**
Assoc. Prof. D. Ditchev, PhD (FT), тел.: 965 2771, e-mail: ditchev@tu-sofia.bg
Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Optional subjects for the students specialty “Transport Technology and Management” BEng programme of the Faculty of Transport.

**AIMS AND OBJECTIVES OF THE COURSE:** To receive the knowledge and skills necessary for the individual theoretical and practical problem-solving as related to the development and integration of the methods and technical devices involved in the creation and functioning of intermodal transportation.

**DESCRIPTION OF THE COURSE:** The course “Intermodal transport” provides detailed theoretical and practical knowledge regarding: the essence, intricacies and functioning of intermodal transportation systems and of the technologies that support their work; the approach towards normalization of the system functions and the usage of the technical complex.

**PREREQUISITES:** The course “Intermodal transport” uses the knowledge acquired until Semester VIII in the fundamental, engineering and specialized disciplines like “Mathematics”, “Mechanics”, “Strength of Materials”, “Transport Machinery”, ” Technique and technology of loading-unloading processes”, ”Organization and Traffic Control in Transport”, “Modeling and optimization of the transport processes” and others.

**TEACHING METHODS:** Lectures presented using multimedia and visual materials, labs with lab reports.

**METHOD OF ASSESSMENT:** Two tests throughout the semester (20 %), labs with lab reports (30 %), final exam (50 %).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:**
1. Закон за автомобилните превози, ДВ, бр. 102. 2006.
2. Закон за железнодоръчния транспорт, ДВ, бр. 108. 2006.
5. Intermodal transport in Europe, European Intermodal Association (EIA), Brussels, 2005.
DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course: Discrete Event rail systems</th>
<th>Code: BTTM61.5</th>
<th>Semester: 8</th>
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<tr>
<td>Type of teaching: Lectures and laboratory work</td>
<td>Lessons per week: L – 2 hour; LW – 2 hours</td>
<td>Number of credits: 3</td>
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</table>

LECTURER:
Assoc. Prof. D. Ditchev, PhD (FT), тел.: 965 2771, e-mail: ditchev@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Optional for the student’s specialty Technology and Management of Transport at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to make the students familiar to elements of railway systems, their properties and characteristics.

DESCRIPTION OF THE COURSE: The main topics concern: Discrete events, which are key events in railway systems. Discusses the classification, prediction and optimization of railway systems; studied the organization of railway systems, their decomposition and interconnection. Students get acquainted with recent research on the presentation of the railway network and its components by event rail systems; the possibilities for the algorithm of railway systems. Along with the discrete events are studied and indicators by which to recommend the most appropriate measures to assess the reliability of railway systems. They know the parameters of discrete event rail systems can be chosen and optimal performance of the railway network.

PREREQUISITES: High enough level of knowledge in structure of railways and urban rail transport – underground railways, tramways, Concept of traffic and traffic capacity of railroads, Technical and economic grounds of transport projects.

TEACHING METHODS: Lectures, case studies, laboratory with protocols

METHOD OF ASSESSMENT: Two assessments at mid and the end of semester (70%), laboratories (30%).

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>NAME OF THE COURSE</th>
<th>CODE</th>
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<tbody>
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<td>High-speed and Specific Rail transport</td>
<td>BTTM61.6</td>
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<table>
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<tr>
<th>TYPE OF TEACHING</th>
<th>HOURS PER WEEK</th>
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<td>Lectures and Laboratory work</td>
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LECTURER:
Assoc. Prof. Ph.D. Oleg Markov Krastev (FT), tel.: 9653769; e-mail: okrastev@tu-sofia.bg, Technical University – Sofia.

COURSE STATUS IN THE CURRICULUM: Elective course for regular and extramural students of the specialty “Transport technology and management”, Faculty of Transport, TU Sofia, educational and qualification degree Bachelor.

AIMS AND OBJECTIVES OF THE COURSE: The aim of this course is to give the students knowledge about design and specific design features of the High-speed and Specific rail transport. This course is dedicated to the specific features of operating and design solutions of the different types of rolling stocks as high-speed rolling stock, equipments for magnetic levitation and rolling stock with linear electric motors. That subject also includes specific features of the funiculars, specific types of the urban transport and catenary in condition of high-speed rail transport. Brake equipment for these types of rolling stocks and European rules and technical specifications also described in this course.

PREREQUISITES: Basic knowledge of fundamental and special courses from curriculum of the specialty “Transport technology and management”.

TEACHING METHOD: Lectures given with the aid of supporting materials, posters, slides and multimedia. Laboratory work, carried out as per the laboratory manual and laboratory work reports, prepared by the students and checked by the lecturer.

METHOD OF ASSESSMENT: The assessment is formed by two written tests done during the term – 80% and with enters tests of the labs – 20%.

INSTRUCTION LANGUAGE: Bulgarian language.

**DESCRIPTION OF THE COURSE**

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM61.7</th>
<th>Semester: 8</th>
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<tbody>
<tr>
<td>Electronic control systems in automotive engineering</td>
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<tr>
<th>Type of teaching:</th>
<th>Lessons per week:</th>
<th>Number of credits:</th>
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<tbody>
<tr>
<td>Lectures and laboratory work</td>
<td>L – 2 h; LW – 2 h</td>
<td>3</td>
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**LECTURER:**
Assoc. Prof.Dr B Traykov, tel. (FT), тел.: 965 3565, e-mail: btraykov@tu-sofia.bg  
Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Optional for the students' specialty "Technology and Management of Transport " at the Faculty of Transport, bachelor level of degree

**AIMS AND OBJECTIVES OF THE COURSE:** The course “Modern electrical system of transport technique” is aimed to make students familiar with principals, algorithms and structures of the electronic devices and systems used in modern automobiles and with methods and means for maintenance and diagnostics.

**DESCRIPTION OF THE COURSE:** The main topics concerns: Circuit diagram of the vehicle electrical equipment, Electromagnetic compatibility and interference suppration, Requirements, design and chemical processes of lead-acid batteries, Charging and discharging characteristics, Requirements, design and characteristics of the alternators with electromagnetic excitation, Windingless alternators and alternators with permanent magnet excitation, Requirements and principles of voltage regulation, Output characteristic of the alternator working with voltage regulator, Energy balance in vehicle power supply, Electric starting motor, design and characteristics, Preheating devices, Combustion engine ignition requirements. Coil ignition system. Basic equation and characteristics. Ignition timing and adjustment, Distributorless ignition systems, Breakless triggering devices, Lighting systems, requirements, arrangements and design, Lighs and lamps, requirements, arrangements and design. Parameters and circuit diagrams, Instruments and dashboard displays, Vehicle Electronic management systems.

**PREREQUISITES:** Physics, Internal Combustion Engines, Electrical Engineering and Electronics.

**TEACHING METHODS:** Lectures and laboratory works, work in teams, protocols preparation and defense.

**METHOD OF ASSESSMENT:** Continuous assessment.

**INSTRUCTION LANGUAGE:** Bulgarian

Name of the course: Corporate communication. Public relations

Code: BTTM61.8

Semester: 8

Type of teaching: Lectures and seminars work

Lessons per week: L – 2 hours, SW – 1 hour

Number of credits: 3

LECTURER:
Assoc. Prof. Dr. Dimitar Cheneshev (FM) - tel.: 9652180, email: dcheneshev@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Corporate Communications. Public Relations is a liberal study for the students of specialty “Technology and Management of Transports” of the Faculty of Transport, Bachelors Degree.

AIMS AND OBJECTIVES OF THE COURSE: Corporate Communications. Public Relations is aimed to give knowledge on the main problems of corporate communication and PR, their influence on the strategic management of the organization and formation of positive attitude of the target audiences towards the organization’s mission.

DESCRIPTION OF THE COURSE: The course contents are aimed to the nature and importance of the corporate communication and the PR. The main problems are focused on the analysis of the nature and functions of the corporate and business communication, that successfully incorporate the strategic goals of the organization. The accent is on the PR with a view to creation of positive public image of the organization.

PREREQUISITES: Management, Marketing.

TEACHING METHOdos: Lectures are supported by multimedia, class discussions.

METHOD OF ASSESSMENT: Current assessment in the end of semester two class works – 40% each, students’ performance during the semester – 20%.

INSTRUCTION LANGUAGE: Bulgarian.

CHARACTERISTICS OF THE COURSE

<table>
<thead>
<tr>
<th>Title of Course:</th>
<th>Code: BTTM61.9</th>
<th>Semester: 8</th>
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</thead>
<tbody>
<tr>
<td><strong>Computer simulation the dynamic of ground vehicles</strong></td>
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<tr>
<th>Type of teaching:</th>
<th>Hours per week:</th>
<th>Number of credits:</th>
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<tbody>
<tr>
<td><strong>Lectures, laboratory exercises.</strong></td>
<td>L – 2 hours, Lab – 2 hours</td>
<td>3</td>
</tr>
</tbody>
</table>

**SPEAKER:**
Prof. Dr. Konstantin Arnaudov (TF), tel: 9652234, email: askaro@tu-sofia.bg
Technical University – Sofia

**COURSE STATUS IN THE CURRICULUM:** Optional course (from list № 2) the degree Bachelor's degree in Technology and Management of Transports, Department of Transportation.

**OBJECTIVES OF THE COURSE:** The aim of the course is to provide students with the necessary basis in the field of computer modeling of the dynamics of vehicles, allowing them to solve specific problems of practice.

**DESCRIPTION OF COURSE:** The course provides students with basic knowledge of approaches to computer modeling of dynamic systems with emphasis for use in vehicles. This implies the analysis of complex systems, representing a combination of engine, transmission, suspension, body of the vehicle, and liaison with the road systems for regulation and management. The analysis is carried out in time and frequency domains.

**PREREQUISITES:** studied courses in Theoretical Mechanics, Measurements and oscillations in the transport techniques, Mathematics.

**METHODS OF TEACHING:** Teaching is through lectures, laboratory work and self.

**METHOD OF ASSESSMENT:** The form of assessment is continuous assessment. The assessment formed the basis of: Test at the end of the course - takes place within three hours with entitlement to the literature 35%; Assessment of the protection of the minutes of laboratory work 35%; Paper-prepared individual assignment - 30%.

**LANGUAGE:** Bulgarian

DESCRIPTION OF THE COURSE

Name of the course: Application of CAD in Transport Techniques
Code: BTTM61.10
Semester: 8

Type of teaching:
Lessons per week: L – 2 hours; LW – 2 hours.

Number of credits: 3

LECTURER:
Assoc. Prof. PhD Lenin Lazov (FT) - tel.: 9652598, e-mail: lazov@tu-sofia.bg
Technical University-Sofia

COURSE STATUS IN THE CURRICULUM: Elective subject for the bachelor degree students in the “Transport Technologies and Management” courses at the Faculty of Transport.

AIMS AND OBJECTIVES OF THE COURSE: The main aim of the course is to make the students familiar with the basic principles of organization of CAD systems and the work with them. Students will also learn how to use such systems in design of elements, assemblies and whole constructions for transport machinery. At the laboratory classes students will work on practical problems with the aid of a CAD system.


PREREQUISITES: Applied geometry and drawing for engineers, Mechanics and Strength of materials, Construction of cars and internal combustion engines.

TEACHING METHODS: Lectures and laboratory classes held in computer rooms.

METHOD OF ASSESSMENT: Semester control – 5 tests. Final exam.

INSTRUCTION LANGUAGE: Bulgarian.

NAME OF THE COURSE:

**Test and Diagnostics of Internal Combustion Engine**

**Code:** BTTM62.1

**Semester:** 8

**Type of teaching:** Lectures and laboratory work

**Lessons per week:** L – 2 h; LW – 2 h

**Number of credits:** 3

**LECTURER:**

Assoc. Prof. Ph.D. Eng. Evgeni Dimitrov (FT), tel: 965 3583; email: etzd@tu-sofia.bg

**Technical University of Sofia**

**COURSE STATUS IN THE CURRICULUM:** Selectable for the students of “Technology and transport management” specialty trained for acquiring the education and qualification degree of Bachelor.

**AIMS AND OBJECTIVES OF THE COURSE:** Mastering of the modern methods and technical means of determining the general technical status of piston internal combustion engines (ICE) and identification of defective components of their mechanisms, systems and assemblies, which cause technical status deterioration.

**DESCRIPTION OF THE COURSE:** The subject acquaints students with the different types of tests of the piston internal combustion engines (ICE), technical equipment, which is necessary for the purpose, experimental data processing, way of plotting characteristic curves and their analysis. The modern methods and technical means of determining the overall technical status of the ICE and of their mechanisms, systems and assemblies are studied, as well as the methods and technical means of location of their defective components – without dismounting. The typical faults of the least reliable components, the limit values of the diagnostic parameters, the diagnostic test optimal program and the role of diagnostics in controlling of ICE technical status and reliability prediction are reviewed.


**TEACHING METHODS:** Lectures, delivered with the aid of visual materials, slides, panels, transparencies. Laboratory exercises for which students make reports, checked by the teacher.

**METHOD OF ASSESSMENT:** Examinations during the semester.

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:**

Name of the course: Modern Systems for Active Safety in Road Vehicles

Code: BTTM62.2

Type of teaching: Lectures, laboratory work and course work

Lessons per week: L – 2 hours; LW – 2 hours

Number of credits: 3

LECTURER:
Assoc. Prof. St. Dimitrov, Ph.D, (FT) tel: 9653953, e-mail: ssdim@tu-sofia.bg, Technical University of Sofi.

COURSE STATUS IN THE CURRICULUM: Optional for the students’ specialty "Technology and Management of Transport" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to enlarge the knowledge of the students about different systems for active safety in road vehicles, their appliance, general arrangement and operation.

DESCRIPTION OF THE COURSE: The course includes general arrangement and operation of systems for active safety in Road Vehicles, which improve some operational characteristics in the fields of braking and traction efficiency, handling and stability, such as: electronic control of hydraulic and pneumatic brake systems, anti-lock brake system (ABS), emergency brake assistant, automatic lock of axle differential, electronic control of four wheel drive, anti-slip regulation (ASR), cruising speed control, self-direct rear axle, electronic stability program (ESP), electronic servo steering and electronic control of four wheel steering.

PREREQUISITES: High enough level of knowledge in Mechanics, Internal Combustion Engines and Automotive Machinery I and II part is required.

TEACHING METHODS: Lectures and laboratory works. During the laboratory works, by computer simulations, students do comparison analysis of some operational characteristics of road vehicles in the field of braking and traction efficiency, handling and stability with and without ABS and ASR.

METHOD OF ASSESSMENT: Written exam at the end of 8th semester.

INSTRUCTION LANGUAGE: Bulgarien

NAME OF THE COURSE: Motorcycles and sports racing cars

LETRURER: Assoc. Prof. Ph.D. Lilo Petkov Kunchev (FT), tel. 965 21 06, email lkunchev@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Obligatory for the students’ specialty "Technology and Management of Transport" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: The aim of education "Motorcycles and sports racing cars" (MSRC) is to deepen students' knowledge in the field of theory and design of sports and racing cars and motorcycles. They allow them to quickly and competently address issues related to the characteristics and types of sports and racing cars, the types of auto racing, the most famous in the world automobile speed runs and their parameters, but also a number of problems related to aerodynamics and aerodynamic devices of sports and racing cars for high speed characteristics of the engine for Sam, the most important electronic stabilizing devices, the application of information technology, new methods and materials design and testing of MSRC.

DESCRIPTION OF THE COURSE: Deals with issues directly related to the theory and design of sports and racing cars, travel and racing motorcycles, karts, bikes and racing them. Analyses the functions of the International Automotive Federation (FIA) and its regulations regarding the rules and technical requirements for vehicles involved in racing.

PREREQUISITES: Basic knowledge in “Internal Combustion Engines”, “Automotive Machinery” is necessary.

TEACHING METHODS: Lectures exported using visual aids, slides, charts and slides. Laboratory protocols, prepared by the students and checked by the teacher. The laboratory exercises consolidate and expand the acquired theoretical knowledge in lectures to students. Perform analysis of certain parameters and design of motorcycles, sports and racing cars. The course topics are illustrated with appropriate video materials for motorcycle and auto racing, construction and testing.

METHOD OF ASSESSMENT: Written exam 2 hour at the end of 8 semester - (80 %), laboratories - (20%).

INSTRUCTION LANGUAGE: bulgarian

BIBLIOGRAPHY: Sports cars and motorcycles, L. Kunchev, D. Kosev; Automobiles, tractors and forklifttrucks, D. Semov, N. Ivanov, D. Lozanov; FIA-Anual
DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM62.4</th>
<th>Semester: 8</th>
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<tbody>
<tr>
<td>Packaging and Containerize</td>
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Type of teaching: Lectures and laboratory work

Lessons per week: L – 2 hours; LW – 2 hours

Number of credits: 3

LECTURER:
Assoc. Prof. D. Ditchev, PhD (FT), тел.: 965 2771, e-mail: ditchev@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Optional course for the student specialty “Transport Technology and Management” BEng programme of the Faculty of Transport.

AIMS AND OBJECTIVES OF THE COURSE: To receive the knowledge and skills necessary for the individual theoretical and practical problem-solving regarding: the development and integration of technology for large-cargo shipment; the testing and technical maintenance of the load-enlargement devices; and the optimization of the load-enlargement parameters. The Labs allow the students to get acquainted with the main types of load-enlargement devices, their qualities and the means of testing them; with the methods of enlarged-loads’ parameter optimization. The Labs will also help students achieve certain important practical skills and habits.

DESCRIPTION OF THE COURSE: The course “Packaging and Containerize” provides detailed theoretical and practical knowledge regarding: the essence, intricacies and functioning of the pallet, packaging and container transport-manipulation systems and of the technologies that support their work; the parameters and methods for testing the pallets; the package-forming devices and containers; the approach towards normalization of the system functions and the use of the technological complex; the intricacies of interaction between the transport-manipulation systems with enlarge loading units.


TEACHING METHODS: Lectures presented using multimedia and visual materials; course includes labs with lab reports.

METHOD OF ASSESSMENT: Two tests throughout the semester (20 %), labs with lab reports (30 %), final exam (50 %).

INSTRUCTION LANGUAGE: Bulgarian

DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>City transport systems</th>
<th>Code: BTTM62.5</th>
<th>Semester: 8</th>
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<tbody>
<tr>
<td>Type of teaching:</td>
<td>Lectures and laboratory work</td>
<td>Lessons per week:</td>
<td>Number of credits: 3</td>
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<tr>
<td></td>
<td></td>
<td>L – 2 hours; LW – 2 hours</td>
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</table>

**LECTURER:**
Assoc. Prof. Ph.D. Svetla Stoilova (FT), tel.: 9653922, email: stoilova@tu-sofia.bg
Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Compulsory course for students specialty Technology and Organization of Transport of Faculty of Transport at Technical University – Sofia, educational and qualification degree Bachelor.

**AIMS AND OBJECTIVES OF THE COURSE:** Aim of the course is to make the students well grounded in basic topics of theory the city transport systems and to give them the knowledge for design and management the passenger transportation.

**DESCRIPTION OF THE COURSE:** In this subject are studded new technologies for organization the passenger transportation with underground railway, tram transport and trolley bus transport. There are studded interaction between this kind of transport and taxi city transport like a united city transport system. In the subject is studded structure and designed the transport maps and the methods for investigation organization of city transport.

**PREREQUISITES:** Mathematics1 , Mathematics 2, Mathematics 3, Transport Systems, Organization and traffic control in rail transport .

**TEACHING METHODS:** Lectures are given with the aid of supporting materials, posters and slides. Laboratory work, carried out as per the laboratory work reports, prepared by the students and checked by the lecturer.

**METHOD OF ASSESSMENT:** Written exam at the end of 8th semester.

**INSTRUCTION LANGUAGE:** Bulgarian

**DESCRIPTION OF THE COURSE**

<table>
<thead>
<tr>
<th>Name of the course:</th>
<th>Code: BTTM62.6</th>
<th>Semester: 8</th>
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<tbody>
<tr>
<td>Simulation research of railway systems</td>
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<table>
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<tr>
<th>Type of teaching:</th>
<th>Lessons per week:</th>
<th>Number of credits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures and laboratory work</td>
<td>L – 2 hour; LW – 2 hours</td>
<td>3</td>
</tr>
</tbody>
</table>

**LECTURER:**
Assoc. Prof. Ph.D. D. Ditchev (FT), тел. 965 2771, e-mail: ditchev@tu-sofia.bg
Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Optional for the student’s specialty Technology and Management of Transport at the Faculty of Transport, bachelor level of degree.

**AIMS AND OBJECTIVES OF THE COURSE:** Aim of the course is to make the students familiar to elements of the simulation study of railway systems.

**DESCRIPTION OF THE COURSE:** The main topics concern: Problems related to methods for simulations of real railway technology operations. Discusses the design, production and decomposition of simulation models; Studied algorithms to create a simulation. Covered are the elements required for the simulations with appropriate software. The possibilities for simulations of various technology and technical operation in railways. Along with the simulations are studied and indicators by which to recommend the most appropriate models of railway systems. As is known simulation models can be selected and optimum technology and organization of the railways

**PREREQUISITES:** High enough level of knowledge in structure of railways and urban rail transport – underground railways, tramways, Concept of traffic and traffic capacity of railroads, Technical and economic grounds of transport projects.

**TEACHING METHODS:** Lectures, case studies, laboratory with protocols

**METHOD OF ASSESSMENT:** Two assessments at mid and the end of semester (70%), laboratories (30%).

**INSTRUCTION LANGUAGE:** Bulgarian

**BIBLIOGRAPHY:**
1. Вучков И., С. Стоянов, Математическо моделиране и оптимизация на технологични процеси, Техника, София, 1986 г.
2. Гатев Г. И., Изследване на операциите. Избор на решения при определеност., кн.1, Технически университет - София, 1994 г.
3. Волков И. К., Е. А. Загоруйко, Исследование операций, МГТУ, имени Баумана, Москва 2004 г.
7. Isabelle Thomas, Transporation Networks and the Optimal Location of Human Activities, Cheltenham, UK 2002
DESCRIPTION OF THE COURSE

<table>
<thead>
<tr>
<th>Name of the course: Workshop and Garage Equipment</th>
<th>Code: BTTM62.7</th>
<th>Semester: 8</th>
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<tbody>
<tr>
<td>Type of teaching: Lectures and laboratory work</td>
<td>Lessons per week: L – 2 h; LW – 2 h</td>
<td>Number of credits: 3</td>
</tr>
</tbody>
</table>

LECTURER:
Assoc. Prof. Ph.D. Emil Madjarski (TF), tel.965 2308, email: majarski@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Optional for the students’ speciality "Technology and Management of Transport" at the Faculty of Transport, bachelor level of degree.

AIMS AND OBJECTIVES OF THE COURSE: Aim of the course is to make the students familiar with design specific of the equipment, used for maintenance and repair of vehicles in the automotive workshops, garages, etc.

DESCRIPTION OF THE COURSE: The course includes topics on maintenance and repair of technological equipment used in the process of vehicles exploitation. Different kinds of equipment machinery are classified according their types. On the base of their specific students develop technologies for maintenance and metrological control.

PREREQUISITES: High enough level of knowledge in Internal Combustion Engines and Transport Machinery Design and Maintenance is required.

TEACHING METHODS: Lectures, laboratory works. During the laboratory works students calculate repair complicity of some kinds of equipment and develop technologies for their maintenance. They also learn design specific of some types of equipment in order to achieve practical knowledge and skills.

METHOD OF ASSESSMENT: Written examination.

INSTRUCTION LANGUAGE: Bulgarian

**DESCRIPTION OF THE COURSE**

<table>
<thead>
<tr>
<th>Name of the Course:</th>
<th>Code: BTTM62.8</th>
<th>Semester: 8</th>
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</thead>
<tbody>
<tr>
<td>Methods and tools for monitoring the technical condition of vehicles</td>
<td>Lessons per week: L-2 h, LW-2 h</td>
<td>Number of credits: 3</td>
</tr>
</tbody>
</table>

**LECTURERS:**
- Assoc. Prof. Emil Madjarski, Ph.D.(FT) – tel.:965 2308, email: majarski@tu-sofia.bg
  Technical University of Sofia
- Assoc. Prof. Ph.D. B. Traykov (FT) – tel.965 35-65, e-mail: btraykov@tu-sofia.bg
  Technical University of Sofia

**COURSE STATUS IN THE CURRICULUM:** Optional course for students of the specialty “Technology and Management of Transport” in the Faculty of Transport of Technical University – Sofia for Bachelor of Science degree.

**AIMS AND OBJECTIVES OF THE COURSE:** The objectives of the course is to acquaint the students with the advanced methods and equipment for transport vehicles diagnostics.

**DESCRIPTION OF THE COURSE:** The course acquaints the students with the basic methods and equipment for determining the technical condition of transport vehicles and their units. The typical failures of the basic mechanisms and systems are also studied. The laboratory work gives also practical diagnostic knowledge and skills.

**PREREQUISITES:** Basic knowledge of probability theory and transport vehicle design and construction are required.

**TEACHING METHODS:** Lectures given with the aid of supporting materials, slides, posters. Laboratory work, carried out as per the laboratory manual and laboratory work reports, prepared by the students and checked by the lecturer.

**METHOD OF ASSESSMENT:** Write examination.

**INSTRUCTION LANGUAGE:** Bulgarian.

**BIBLIOGRAPHY:**
DESCRIPTION OF THE COURSE

Name of the course: Steel structures - Eurocode 3

Code: BTTM62.9

Type of teaching: Lections; Laboratory works.

Lessons per week:
L – 2 hours; LW – 2 hour.

Semester: 8

Number of credits: 2

LECTURER:
Assoc. Prof. PhD Lenin Lazov (FT) - tel.: 9652598, e-mail: lazov@tu-sofia.bg
Technical University – Sofia

COURSE STATUS IN THE CURRICULUM: Elective subject for the bachelor degree students in the “Technology and Management of Transport” courses at the Faculty of Transport.

AIMS AND OBJECTIVES OF THE COURSE: To give students the knowledge on general requirements related to the strength and reliability applied in the preparation of assignments for the design, adoption and operation of metal structures for transport systems.


PREREQUISITES: Applied geometry and drawing for engineers, CAD, Materials science, Strength of materials.

TEACHING METHODS: Lectures and laboratory classes held in computer rooms.

METHOD OF ASSESSMENT: Semester control – 5 tests.

INSTRUCTION LANGUAGE: Bulgarian.

BIBLIOGRAPHY: