

Course: Engines			Course designation: OMV115
Semester:	Lectures + exercises + seminar:	Total:	ECTS credits:
3	3 + 1 + 0	60	6

Course objective:

Gaining basic knowledge of the theory and construction of internal combustion engines.

Course contents:

Introductory and basic definitions. Historical development. General structure of engines. Basic definitions of engines. Engine properties. Classification of engines. Definition of a modern engine. Theory of engines. Thermodynamic cycles in engines: Otto, Diesel, Sabathe cycles. Actual engine operating cycles. Principle and actual operating cycle of four-stroke Otto and Diesel engines. Combustion in Otto and Diesel engines. Principle and actual operating cycle in two-stroke Otto and Diesel engines. Distribution scheme in four- and two-stroke engines. Engine features. Definitions. Indicator diagrams. Work, specific work of a cycle and indicated mean pressure. Calculation of indicated and effective power of four-stroke Otto and Diesel engines. Measuring of engine effective power. Diagrams of engine features. Degrees of engine usefulness. Thermal balance of engines. Engine structure. Basic parts of an engine. Piston mechanism. Distribution mechanism. Systems in Otto and Diesel engines: fuel system, ignition system in Otto engines, lubrication system, cooling system, starting system, exhaust system. Engine precharging - compression engines. Basic concepts of multicomcombustible engines and gas turbines.

Course: Vehicle Maintenance I			Course designation: OMV121
Semester:	Lectures + exercises + seminar:	Semester:	ECTS credits:
5	3 + 2 + 0	75	5

Course objective:

Familiarisation with basic concepts and advanced technologies of vehicle maintenance, with a special focus on diagnostics and usage of electronic testing devices, and procedures of maintaining engine components and devices.

Course contents:

Theoretical basis of maintenance. Procedures for maintaining engine major parts and devices: checks and technical diagnostics, assembling and disassembling, detecting component faults, replacement of assemblies and parts, adjustment of movable and immovable engine parts, fuel and air intake devices, cooling devices, lubrication devices, ignition devices, electronic and electric devices and engine fittings. Measures of technical protection.

Course: Vehicle Maintenance II			Course designation: OMV123
Semester:	Lectures + exercises + seminar:	Semester:	ECTS credits:
6	2 + 3 + 0	75	5

Course objective:

Familiarisation with advanced technologies of motor vehicle maintenance, with a special focus on diagnostics and usage of electronic testing devices, and procedures of maintaining engine components.

Course contents:

Procedures of motor vehicle maintenance: motor vehicle inspections, technical diagnostics, disassembling and assembling procedures, components fault-finding, replacement of assemblies and parts, adjustment of: coupling, transmission gear, driving and differential distributors, transmission and driving shafts, bridge actuators, suspension and wheels. Diagnostics and maintenance of steering and braking systems. Diagnostics and maintenance of electric and electronic devices and equipment of motor vehicles. Maintenance of special components and devices of motor vehicles. Procedures of protection and storage of motor vehicles. Technical protection measures.

Course: Management and Entrepreneurship			Course designation: ZAJ125
Semester:	Lectures + exercises + seminar:	Total:	ECTS credits:
4	2 + 2 + 0	60	4

Course objective:

Acquiring the knowledge and skills that will allow the students to successfully start and implement their own entrepreneurial and other projects, and to manage the business by the principles of economic and social responsibility as a future employee or entrepreneur.

Course contents:

Definition of management and basic management functions with a focus on planning (strategy, vision, mission, SWOT analysis, PESTLE analysis), human resources management, leadership and control (application of individual indices, absolute and relative change rates). Measures of business success. Corporate social responsibility. Entrepreneurship. Start-up companies. Marketing strategies (generic strategies) and competitive advantage. Entrepreneurial project (purpose, structure of the project and presentation).

Course: English I			Course designation: OMV105
Semester:	Lectures + exercises + seminar:	Total:	ECTS credits:



1	1 + 1 + 0	30	2
Course objective: Acquiring technical terminology and upgrading communication in English, with basic knowledge of vocabulary and grammar needed. Development of language skills, i.e. reading, listening, speaking and writing, in the professional context. Smooth and precise exchange of information within contexts related to various aspects of motor vehicle maintenance, use of technical handbooks and dictionaries.			
Course contents: Grammar and language: Basic tenses, plural, comparison of adjectives. Professional topics: motor vehicle parts, systems (parts and function), tools, engine.			

Course: English II			Course designation: OMV113
Semester:	Lectures + exercises + seminar:	Total:	ECTS credits:
2	1 + 1 + 0	30	2
Course objective: Revision of English grammar with the aim of its successful use in understanding written and spoken language, upgrading technical terminology, smooth and precise exchange of information within contexts related to various aspects of motor vehicle maintenance, use of technical handbooks and dictionaries.			
Course contents: Grammar and language: Basic tenses and their forms, use of the passive to describe processes, use of adjectives to describe physical properties, position, shapes and dimensions. Professional topics: maintenance, motor vehicle parts and systems.			

Course: English III			Course designation: OMV120
Semester:	Lectures + exercises + seminar:	Total:	ECTS credits:
3	1 + 1 + 0	30	2
Course objective: Upgrading technical terminology, smooth and precise exchange of information within contexts related to various aspects of motor vehicle maintenance, use of technical handbooks and dictionaries.			
Course contents: Use of English to describe malfunctions and propose potential solutions, motor vehicle safety, occupational health and safety, Guidelines for preparing presentations. Presentation methods. Holding meetings.			