

Dette er en oversettelse av den fastsatte læreplanteksten. Læreplanen er fastsatt på Bokmål

Laid down as a regulation by the Norwegian Directorate for Education and Training on 14 December 2007 as delegated in a letter of 26 September 2005 from the Ministry of Education and Research pursuant to the Act of 17 July 1998 no. 61 relating to primary and secondary education (Education Act) Section 3-4 first paragraph.

Valid from 01.08.2008

Valid to 31.07.2023



Utdanningsdirektoratet

Purpose

Motor vehicle mechanic, heavy-duty vehicles shall contribute to developing competence in troubleshooting, repairing and servicing heavy-duty vehicles. Heavy-duty vehicles play a central role in today's society for transporting people, animals and goods. The subject shall promote traffic and operational safety for motor vehicles. Furthermore, the subject shall help the trade satisfy the increasing requirements to efficiency and stricter requirements to reduce environmental emissions.

Learning in the subject shall help the apprentice develop competence in troubleshooting, repairs and maintenance. Furthermore, learning in the subject shall lay the foundation for professional insight and development and the ability to make independent assessments, to cooperate and improve communication skills.

Learning in the subject shall organise practical work tasks in areas of mechanics and electrical and electronic systems. The use of digital equipment shall be included in learning. Furthermore, learning shall contribute to develop the individual's professional pride and respect for people, the environment, equipment and costs. Learning in the subject shall emphasise rules for environment, health and safety.

Training completed and passed in the subject will lead to a Trade Certificate. The professional title is Automobile Mechanic for Heavy-duty Vehicles.

Structure

Motor vehicle mechanic, heavy-duty vehicles consists of four main subject areas. The main subject areas complement each other, and should be viewed in relation to one another.

Overview of the main subject areas:

Year level	Main subject areas			
Vg3 / In-service training at a training establishment	Understanding systems and troubleshooting	Service and maintenance	Repairs and assembly	Communication and quality

Main subject areas

The main subject area covers the structure, functions and troubleshooting of mechanical, electrical and electronic systems. Furthermore, the main subject area covers the use of digital equipment and literature in troubleshooting and diagnostic testing.

The main subject area covers service and maintenance based on current rules and regulations for vehicles. Selection and use of tools, equipment and measuring instruments is included in the main subject area. Furthermore, it covers the use of documentation for planning, execution and quality assurance.

The main subject area covers repairs to motor vehicle systems and mounting equipment on the vehicles. The main subject area covers work on the mechanical, hydraulic, compressed air, electrical and electronic systems.

The main subject area covers communicating with customers, colleagues and collaborators. Furthermore, the main subject area concerns digital communication tools, and important aspects of environment, health and safety and quality systems. Understanding costs is included in the main subject area.

Basic skills

Basic skills are integrated into the competence aims for this course in areas where they contribute to the development of and are a part of the basic subject competence. In Motor vehicle mechanic, heavy-duty vehicles, basic skills are understood as follows:

Being able to express oneself orally and in writing in Motor vehicle mechanic, heavy-duty vehicles involves communicating with customers, colleagues and collaborators about professional solutions and about the quality of work. It also involves documentation of work done.

Being able to read in Motor vehicle mechanic, heavy-duty vehicles involves gathering information and understanding and using instruction manuals and documents in various languages.

Numeracy in Motor vehicle mechanic, heavy-duty vehicles involves calculating and converting forces, electric sizes and make-up torques.

Digital literacy in Motor vehicle mechanic, heavy-duty vehicles involves using digital and searchable documents, legislation and regulations, and technical data. Furthermore, it involves the use of digital aids and instruments for troubleshooting, diagnosing, repairing and documentation.

Competence aims

Understanding systems and troubleshooting

The aims of the training are to enable the apprentice to

- plan work related to troubleshooting procedures
- find and using technical information in various languages
- perform pressure and leak tests on lubricant and cooling systems
- perform and interpret wear indications in engines with the help of measuring tools
- explain the basic principles of combustion and energy applied to engine systems
- troubleshoot components in fuel and injection systems
- troubleshoot electronic engine control systems
- explain how turbo, compressor and intercooler systems work
- perform emissions tests, interpret the results and explain how exhaust gas cleaning systems work
- interpret symbols and circuit diagrams for work tasks
- measure electric sizes and interpret the results from troubleshooting and diagnoses
- troubleshoot electric and electronic components
- troubleshoot charging and starting units and explain how these work
- explain how the different components of the comfort and air conditioner systems work
- explain how digital control systems work
- troubleshoot mechanical compressed air brakes and auxiliary brake systems
- troubleshoot hydraulic systems
- perform brake tests based on state regulations, and interpret the test results
- troubleshoot couplings and tripping devices
- troubleshoot gear systems and transmission mechanisms in gear drives
- troubleshoot spring suspension systems and explain how these work
- troubleshoot and adjust steering devices
- explain the use of material qualities in vehicle bodies, frames and surface mountings
- explain systems for active and passive security

Service and maintenance

The aims of the training are to enable the apprentice to

- plan and perform work based on job descriptions, safety regulations and manufacturer instructions
- use tools, equipment and measuring instruments correctly to fulfil work assignments
- perform control checks and adjust lighting systems based on current rules
- select and use motor vehicle oils, lubricants and liquids
- select tyres and rims according to requirement and technical data for the vehicle
- select and use the product data sheets and EHS data sheets to fulfil work tasks
- do source separation and handle special waste according to company internal control systems
- perform emissions tests and interpret emissions values in line with current regulations

Repairs and assembly

The aims of the training are to enable the apprentice to

- plan and organise repair jobs based on troubleshooting and diagnosis
- replace and adjust register transfers on engines
- dismantle, repair and mount engine components
- perform repairs on couplings and gear systems
- perform repairs on u-joints, drive shafts, differentials and bearings
- perform hot work and fix high-pressure, diesel and compressed air systems based on safety regulations and procedures
- replace and repair components in the wheel suspension and steering devices
- perform axel and wheel gauging, and carry out the necessary adjustments
- dismantle, mount and adapt vehicle body parts and equipment
- explain the construction of vehicle frames and bodies
- replace and repair components in braking systems
- repair spring suspension systems
- repair and mount lighting equipment

Communication and quality

The aims of the training are to enable the apprentice to

- perform work based on current rules and regulations for environment, health and safety
- communicate with customers about the job, and deal with them according to the company's guidelines for customer service
- perform quality control checks, prepare documentation and evaluate own work
- use laws, regulations and procedures at work
- prepare professional solutions in collaboration with colleagues and other collaborators
- describe the structure and organisation of the trade, and also for the company you work for
- explain what influences costs and efficiency in workshop operations
- use digital workshop information systems
- give an account of the company's quality assurance systems

Assessment

Vg3 Motor vehicle mechanic, heavy-duty vehicles

Provisions for final assessment:

Main subject areas	Provision
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Understanding systems and troubleshooting	All apprentices shall sit for a Trade Examination, which is normally carried out over a period of three working days.
Service and maintenance	
Repairs and assembly	
Communication and quality	

The provisions for assessment are stipulated in the regulations of the Norwegian Education Act.