

Auto-Mechanical Branch

1. Technical Drawing / AutoCAD 10

The subject of Technical Drawing and AutoCAD is given with the most social methods of imagining the shapes of objects or various objects of nature. Drawing is done with or without technical drawing tools, with free hand in the form of sketch, which serves to make a graphic representation of the natural object. It takes the form of drawing. In both cases, we are dealing with the presentation of different objects with given dimensions ready to be produced or vice versa, when the drawing is done, the student should be able to read it, to create the idea and imagination about the object presented. In AutoCAD students learn mainly how it is possible to realize the drawing of various natural objects through the computer in 2D (in plan) and 3D (in space). These are accomplished through learning the AutoCAD commands as well imagining objects in space. These are based on practices where different exercises are constantly done from the simplest to the most difficult as from the pictures to the summary drawings etc.

2. Economy - Introduction to Business 10

Through this course students are provided with basic knowledge in the field of business starting with economic roles that each individual plays in daily life (role as a consumer, as an employee and as a citizen for the creation of the good of general). This course also addresses the most effective ways to manage revenue and risk savings as low as possible and profit as high as possible, insurance protection against losses economic, how this insurance works and why it is needed. Students get knowledge about the development of foreign and domestic trade, the functions of banks, inflation, deflation, the economic role of the state and its functions

3. ICT-Computer application 12, 13

Computer applications 12

In this curriculum students learn two computer programs: Rhino AutoCAD and 3D-Max. Program Rhinocerotis (usually abbreviated Rhino, or Rhino3D) is a 3D graphic computer program that comes with to help students to make various drawings with the help of computer, computer-Aided (CAD). Rhinocerotis geometry is based on the NURBS mathematical model, which focuses on the production and mathematically accurate representation of curves and surfaces realized with freeform on the computer. Rhinocerotis software is used in computer processes - computer Aided Design (CAD), in production of objects with the help of CAD-CAM program, production of fast 3D prototypes in industrial drawings including architectural drawings, industrial design (e.g., automotive design, aquatic designs), design of the product (e.g., jewelry design), as well as for multimedia and graphic design. The 3D-Max program is a tool of powerful 3D modeling. Through this program students will learn the basic concepts which allow designers and planners communicate complex 3D concepts. By means of specialized commands of the program students will learn to model organic shapes and simulate film displacements. Will learn to import models into other applications such as AutoCAD and export them to 3D-Max.

Computer applications 13

In this curriculum students learn the Sketchup computer program. Sketchup program is a tool of powerful 3D modeling. Through this program students will learn the basic concepts which allow designers and planners communicate complex 3D concepts. By means of specialized commands of the program students will learn to model organic shapes and simulate film displacements. Will learn to import templates from other applications and export SketchUp templates to other 2D, 3D (like AutoCAD, 3D-Max etc.) as well as in movie applications. Mechanical technology 12, 13

4. Technical mechanics 11

Elements of Mechanics in the 11th grade provide students with knowledge of the basic laws of mechanics, treat the calculation of car details as well as the types of connections in them: a) non-disassembled connections; b) removable connections. Also familiar with friction transmission, belt drive, chain saw, sprocket etc. At the end of the program students are able to understand the working principle and operation of each type the mechanism used today in various fields.

5. Elements of Electrical Engineering 11

Electronics is one of the building blocks of the automotive industry. We study the concepts based on electrical quantities, laws operating in electrical circuits, elements of electric current circuits continuous and sinusoidal alternatives. Basic concepts of magnetic field as well as laws of magnetic induction. Based on them, the working principles of electric cars, motors, generators and transformers are treated. Further knowledge of electronic elements such as diodes, transistors and thyristors as an integral part of circuits are treated electronic steering and control in automobiles. The last chapter deals with the basic elements of digital technology, the transition of a number from a numbering system to a next, the construction of logic gates and their use, logic schemes. As well as other elements, such as memories, registers, counters, converters, etc. To make the phenomena clearer, projects have been introduced, which also help in cooperation between students, in research and selection of materials, etc.

6. Mechanical technology 12.13

Mechanical technology 12

Familiarity with mechanical technology and its role in the economy of a country, areas of mechanical and industrial production processes, connection of natural resources of raw materials and other materials of use industrial and agricultural, knowledge on the classification of metals, classification of processing methods materials in the mechanical industry, etc. Knowledge of how minerals should be exploited, the essence of metallurgical processes, knowledge of cast iron production and steel, where it is based, the essence of metallurgical processes of steel production, features of steel production in converters, connecting elements and how they affect, etc. Familiarity with the separation of metallic materials depending on their different properties, physical and chemical properties, mechanical properties and technological properties, study and evaluation of mechanical and technological properties by of different evidence, different types of evidence used, etc. Familiarity with the use of metallic materials and the change of their properties depending on the change of chemical composition, how the process of transition of metals from liquid to solid state is performed or crystalline, influencing elements, temperature and cooling rate, change of crystal lattices, points critical of carbon-iron diagram, change of

properties of metallic materials as a result of processing thermal conductivity in them, what is baking and normalization, what is cementation, nitrogen, defects of various that may occur, etc.

Mechanical technology 13

This course serves to create students' professional knowledge and skills according to national and international professional standards, with the aim of preparing them for the labor market. Technology Mechanical helps students to establish a concrete and direct relationship with character as well as to go deeper into the nature of the professions that this subject "touches", such as profession of Mechatronics, Metalworker, Car Mechanic, Steering Machine Operator CNC computer, Heating and Air Conditioning Installer, Auto Mechanic and Auto Electrician. Mechanical Technology itself is relatively related to the form and manner of production of the material by starting from the raw material. The production and processing of materials are very important and also give it more value knowledge acquired by the student in the professional field.

7. Heating, cooling and ventilation systems 12, 13

This course is a complex of disciplines that deals with the study of refrigeration and heating plants used in daily life. Utilizing the properties of cooling gases, it is possible to achieve artificial cooling. This has found a wide use in almost all industries such as: mechanical, chemical, food and for use housewife etc. Every day more and more cooling techniques are being used to meet the growing needs of society. As a subject it is developed in 12th and 13th grades. In the 12th grade students get knowledge about: the basics of cooling where include gases, heat transfer, cooling circuits and their constituent elements. Accompanied by this knowledge with relevant software. In the 13th grade students gain knowledge about different elements of service and repair of cooling systems such as: evacuation of cooling systems, loading of cooling systems, air conditioning systems, ventilation system etc. These are associated with relevant schemes and software.

8. Construction, description and service of automobiles 11, 12, 13

Through this specialty course, students gain complete and in-depth knowledge of the different types of internal combustion engines such as: carburetor, injection and diesel without exception and engines of the future and turbocharged engines. Also gain complete knowledge of the construction and operation of mechanisms and systems of the engine, power transmission and its moving parts. For all these mechanisms and systems, are given detailed knowledge of the ways of controlling their normal operation in motors, according to most methods sophisticated electronics used today in modern vehicles. The course provides complete knowledge about service-repair of the aggregates of a vehicle, of the engine mechanisms and its systems anticipating all necessary registrations and controls. Through this knowledge students are introduced to work tools, equipment and measuring and diagnostic instruments that can be used in a modern service. Students during the 12th year are also introduced to electric and hybrid cars, their constructive side, the way of operation and the services it performs in them.

9. Control and diagnostics of automobiles 13

The construction of this subject includes the specialty of automobile transport, for the fact that it requires an accurate knowledge of the construction and operation of today's modern vehicles and complete knowledge of service and repair required of them. The aim of the course is for the student to become a specialist by finding and interpreting all types of defects that occur in the vehicle in its electrical and

electronic parts. The course aims to teach them the student or specialist use all the measuring and testing apparatus needed to solve the main problems of automobile diagnostics. The course provides for the use of special apparatus for certain problems and diagnostic programs such as: gas analyzer, the computer through which becomes an accurate analysis to derive the true diagnosis of defects appearing.

10. Knowledge of air transport 11, 12

Through this course students are provided with knowledge in: Aeronautics and Aerodynamics. They also get knowledge for the aircraft, the birth of air transport, the legal and organizational infrastructure in air transport as well as trends current developments in air transport. The 11th year deals with topics that synthetically include the essence and achievements of the Air Transport industry globally as well as the current challenges of this very dynamic activity of humanity. The basic principles of aerodynamics are also given, on the basis of which it was possible to discover the mechanism of creating the lifting force, etc. In the 13th year we are given the legal and organizational infrastructure of air transport, international conventions, services and phenomena of air transport development as well as its strategic objectives and future.

11. Service administration structure

Through this course we are given the way of managing a service, using the professional skills acquired in various professional subjects in the field of automotive. The course specifies that, to be a good service manager you must have the right skills on service and repair of engines, various automobile systems. Through this course we are also shown how to organize, organization chart and management of a service authorized, knowledge is obtained regarding other necessary departments in a service and cooperation I close between them.

12. Professional practice 12, 13

Professional practice (Turner-Adjuster and Auto-Mechanics) 12

The construction of this course includes the main goals of the automotive transport specialty because it requires an accurate knowledge of the construction and operation of today's vehicles and complete knowledge of the service and the repair required of them. The main aim of the course is to prepare the student as a specialist in the field of service and repair of automobiles, acquire basic knowledge about metal cutting machines (turners) and adjuster. In metal cutting machines it is intended that the student is well acquainted with turning machines, their construction and the types of work done with them. In adjustment it is intended that the student knows and uses the instruments gauges, adjustment tools and the types of simple work done with them.

Professional practice 13

In the 13th grade, students will form practical habits in terms of automobile service and repair. This focuses on the engine power transmission systems on the wheels active, in the steering systems, in the braking and stability control systems of the vehicle during its movement. These are realized through the practice that students develop in various car repair firms. Students are trained in generic, motor, electro-auto, electronic repairs and diagnostic automobiles.