**PROFESSIONAL ELECTRONIC PROGRAM**

*Technical Drawing / Autocad 10*

The Subject of Technical Drawing and AutoCAD are provided with the most social methods of visualizing the shapes of objects or different objects of nature. Drawing is done with or without technical drawing tools, with a free hand in sketch form, which serves to make the graphic representation of the item or the natural object quick. If it's done with tools, it looks like a drawing of work. In both cases, we are dealing with the presentation of different objects with the dimensions given to produce or vice versa, when the drawing is made, the student is able to read it, to create the idea and the picture about the object presented. In AutoCAD students learn primarily how to make drawing of different natural objects through the computer in 2D (plan) and 3D (in space). These are accomplished through learning of AutoCAD’s main commands and the visualization of objects in space. These rely on practices that consistently perform different exercises from the simplest to the most difficult from the footage to the summary drawings.

*Economy - Business Introduction 10*

Through this course, students acquire the key knowledge in the field of business starting with the economic roles that each individual plays in everyday life (the role as a consumer, as an employee and as a citizen for the creation of the general good). This course also addresses the most efficient ways to administer lower income and savings with lower risk and higher profitability, protection against insurance against economic losses, how this insurance works and why it is needed.

Students acquire knowledge about the development of foreign and domestic trade, bank functions, inflation, deflation, the economic role of the state and its functions.

*ICT-Computer Application (C ++ Programming, Java) 12, 13*

The course program aims to provide students with basic knowledge in the programming field: in C ++ and Java languages by addressing the basic concepts of programming in them. The C ++ course handles variables and constants, reading and displaying data, classes, functions, standard libraries, and arrays. In the course the course deals with Java programming language. As students become familiar with the Java language syntax and its changes with C ++ language they learn to program in the GUI using the Swing components. At the end of the curriculum year, students should be able to create graphical programs that contain different components such as windows, buttons, check boxes, combo boxes, menus etc. as well as programming games that help develop their skills to build complex algorithms. Pupils are able to complete the knowledge in this field and are further trained in the programming field. The program is supported by modern didactic and modern laboratory materials.
**Digital Systems 11**

Through this program, the student acquires knowledge in the field of digital electronics, on the basis of which all digital techniques are supported for fields such as Information Technology, Telecom and Radio Television. The basics of the Boolean algebra are provided, and the analysis and synthesis of middle and high integrating numerical circuits is passed. In this program the student studies the construction of TTL and CMOS circuits, decoders, encoders, data transformation technology from analog to digital and vice versa. The program contains exercises and laboratory work that influence the acquisition of the subject and form the student professionally. The course is based on didactic material base and modern laboratory equipment. In order that the students benefit from the practical aspect of numerical and analogous systems, they also participate in independent work by practically building the theoretically acquired schemes from the digital systems book.

**Electrotechnics 11**

This course, known as the "Basics of Electrical Circuit Calculation", is one of the basic subjects of IT Training. It aims to embody the basic concepts of electric sizes, the main laws that operate in electrical circuits, the behavior of these circles under the action of an incoming size, as well as the interaction of the elements of the circuit. The program addresses basic circuits for continuous current and sine wave current, how circles circulate to these currents, physical occurrences that arise in the relationship of these sources with electronic circuit elements, active resistances and reactive resistances, coils, and condensers. The program contains a cycle of exercises where practical habits are created and the theoretically treated phenomena are verified. The course is based on a cycle of laboratory work where students are enabled to recognize and use electronic measuring devices to experiment and to visualize the phenomena occurring in these circles.

**Electronics 11, 12**

This program recognizes students with the elements of electronics that participate in the construction of all electronic devices. The course aims to provide basic knowledge in the analysis of circular diode and bipolar transistors (BJT), the use of BJT as low and high frequency amplifiers, functioning of FET circuits, MOS transistor and JFET, FET low frequency amplifier analysis, FET high frequency model, etc. Topics are accompanied by exercises and laboratory work that help in the acquisition of the subject and the scientific and professional training of students. The course is based on didactic material base and modern laboratory equipment.
**Telecommunication 12, 13**

The program aims to provide students with basic knowledge on telecommunication networks and services offered by communication systems. It specifically addresses the structure of communication systems, the importance of standardization and protocols in the communication process, the processing of analogue and digital signal processing. This program also addresses the basic modulation techniques that enable the transmission of telephone conversations to the digitized network, key communication technologies and differences between them and key applications implemented in computer systems. The program aims to provide basic knowledge and for NGN (new generation networks) systems, voice transmission in VOI data networks, TV broadcasts with IPTV technology. Topics are accompanied by practical and laboratory demonstrations.

**Computer Networking 13**

The course aims to provide students with basic knowledge of computer network management, communication on computer systems, and services provided by computer networks. The course deals with technologies applied to networks such as Ethernet, wireless networks, routers, and communication media used in them. Students are also familiar with the main equipment used in computer systems, their configurations, analysis and network performance study. They work intently on basic networking software (Finisar Surveyo, Net Challenge, Cisco Packet Tracer) in order to learn computer software simulations in these programs and then apply them virtually through Cisco network devices. Basic knowledge on the security of communication systems will also be gained.

**Computer Architecture 12**

The course studies the architecture of computer systems that are today the foundation of the most advanced applications in the field of electronics, in the field of information and communication technology, for robotic and medical systems. Rapid development and extensive application of electronic systems creates a constant demand for skilled professionals in the programming and use of computerized systems. Students are equipped with knowledge that enables them to adapt quickly to computer systems processors and applications supported on them. The course aims to elaborate hardware architecture and processor software. Description of the architecture and analysis of the processor structure clarifies the connection of the components and the action of each of them. Assembly language programming completes the basic knowledge of using the most familiar x86 family processor systems.
**Electronic Measurement 13**

The subject studies the construction and use of electronic measuring devices for measuring various electronic and non-electronic sizes. The course enables students to use metering devices to experiment, maintain, and prophylactic electronic devices. Students learn different sensors to measure and maintain equipment of various fields such as medical, construction, mechanical, automotive, etc., where electronic measuring devices are widely used.

**Principle Database 13**

In this subject students get the concepts needed for a good understanding of database design. The course recognizes them with the database environment, typical users, and DBMS architecture concepts. Then the course program recognizes them by modeling the data, the conceptual schema by focusing on the relational model and the E-R diagram. Students are also familiar with the Relational Model (RDBMS), integrity constraints, and update actions. During the course development a detailed description and knowledge of the SQL language is done. In particular, the emphasis in this subject is on educating students for a better design and use of the database. During the course development, general and applied knowledge is also provided on one or two database management technologies with the aim of applying the theoretical knowledge acquired.

**Professional Practice 12, 13**

The internship program, through the connection of theory to practice, enables students to professionally maintain and use electronic equipment in areas such as Information Technology, Telecom and Robotics. The practice is conducted in the school labs, which are equipped with tools, experimental electronic material base, modern measuring devices and equipment of the above mentioned fields. Students build blocks of electronic schemes, which they control through measuring devices and repairing them if the blocks have flaws. The program also handles the electronics field devices to program and use them. The practice continues with the configuration, management and monitoring of computer systems (such as Windows / Linux / UNIX servers), computer networks and database networks. In addition, pupils participate in various projects in the field of electronics by building different schemes of sensors, amplifiers, Signal Converter, Filters and Generators. Other projects where students participate are in the field of robotics where the student reaches a very high professional level by building robotics from electronics base to advanced robotics.