DESCRIPTION OF THE COURSE

Name of the course: **Mathematics I**	Code: **MAT12**	Semester: **1**
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 30 hours S – 30 hours	Number of credits: **7**

LECTURER(S):
Assoc. Prof. Lyudmila Filipova, PhD (FME), tel.: 032 659 681, e-mail: liudmila_filipova@abv.bg
Assist. Prof. Radka Koleva, PhD (FME), tel.: 032 659 681, e-mail: rkoleva@tu-plovdiv.bg
Assist. Iva Naidevova (FME), tel.: 032 659 679, e-mail: iva.naydenova@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curricula for training of students to obtain Bachelor's degree, specialties Industrial Management, Graphic Design and Printing, Professional orientation 5.13 General engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: Familiarization the students with basic parts of the Linear algebra, Analytic geometry, Mathematical analysis and neighbour mathematical disciplines necessary for application disciplines.

DESCRIPTION OF THE COURSE: Main topics: *Linear algebra* – polynomials, zeros of polynomials, division of polynomials, partial fraction decomposition; determinants, application of determinants; Matrices, Rank of Matrix, Inverse Matrix, Matrix equations, Systems of linear equations; *Analytic geometry* – Coordinate systems; Vectors, Scalar Product of two Vectors, Cross Product of two Vectors, Vector Triple Product, Equation of a Plane, Equations of Lines in the Coordinate Plane, Equations of a Line in Space, Intersection of a Line and Plane; Curves of Second Degree, Conic Sections, General Concepts of Surfaces and Surface of the second order.

PREREQUISITES: Very good training in mathematics from secondary school.

TEACHING METHODS: Lectures and Seminars.

METHOD OF ASSESSMENT: Written examination with more weight skills to solve problems.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Апостолова М., Лекции по линейна алгебра и аналитична геометрия, София 1993, 2. Доневски Б., Петров Л., Бижев Г., Линейна алгебра и аналитична геометрия, ТУ–София, 1997, 3. Топенчаров В. и колектив Сборник от задачи по висша математика, части I и II, Техника, 1977, 4. Маринов М. и колектив, Задачи за упражнения по висша математика, части I и II, 2006, 5. Каранджулов Л., Маринов М., Славкова М., Кратък справочник по висша математика, 2007.

DESCRIPTION OF THE COURSE

Name of the course: **Physics**	Code: **PHY01**	Semester: **1**
Type of teaching: Lectures (L) Laboratory work (LW) Seminars (S)	Hours per semester: L – 45 hours S – 15 hours LW – 30 hours	Number of credits: **7**

LECTURER(S):
Asst.prof. Georgi Dobrev , PhD (FME), tel.: 0886346154, e-mail: dobrevbg@tu-plovdiv.bg
Assoc. Prof. Zara Kasapeteva (FME), tel.: 032659973, e-mail: zarra_andreeva@abv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory from curricula for training of students to obtain Bachelor's degree, specialty "Mechanical Equipment and Technologies", "Mechanical and Instrument Engineering", "Mechatronics", Professional orientation 5.1 Mechanical Engineering, "Transport Equipment and Technologies", "Aviation Equipment and Technologies", Professional orientation 5.5 Transport, Shipping and Aviation, "Industrial Management", "Graphic Design and Printing", Professional orientation 5.13 General engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: The aim of the course of Physics is to acquaint the students with the physical phenomena and processes, the methods of their studying and the possibilities for their technical application. The obtained theoretical knowledge and practical skills are a prerequisite for development and formation of independent thinking and ability to solve a variety of real physical problems.

DESCRIPTION OF THE COURSE: The topics, included in the course of Physics comprise basic physical laws and values, describing the most general properties of matter from the point of view of classical mechanics. The content of the course is organized in the following chapters: Mechanics, Molecular physics, Thermodynamics, Electrostatics, Electric current, Electromagnetism, Vibrations, Waves in an elastic medium, Acoustics, Geometric and wave optics, Quantum properties of matter, Atomic physics. The main physical laws are considered by means of using classical models, allowing for accurate description of real processes. Computer technique along with information technologies are used where needed in combination with appropriate measurement devices. The use of the international measurement system SI is indispensable and compulsory part of the course. The basic knowledge given by this course is further needed both for the specialized courses and for the professional preparation of the students.

PREREQUISITES: Prerequisites for successful mastering the material in the course of Physics - are good knowledge of the material in Physics and Mathematics form secondary school and certain elements from the courses in Mathematics (Calculus).

TEACHING METHODS: Lectures for acquaintance with the theoretical material, laboratory work for obtaining practical skills, as well as for systematization and processing of the measurement results. The seminary exercises help to apply theoretical knowledge to solve specific tasks (only for students majoring in Mechatronics).

METHOD OF ASSESSMENT: Written examination (test), complex assessment made up of 80% from the test result and 20% from the performance during laboratory work and seminar exercises.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. И.П. Илиев. Физика (I и II част). Издателство „Екс-прес“, 2018; 2. И.П. Илиев. 144 решени задачи по физика. Издателство „Екс-прес“, 2018; 3. Савалев И.В “Курс по обща физика” I,II,III т. изд. “Наука”, Москва 1973 г.; 4. С.Йорданов, Физика 1. ЕКС-ПРЕС,2006; 5. И.Вълков, Физика в “Задачи I”, “Макрос” Пловдив, 2012; 6. И.Вълков, Е.Георджева и др. “Лабораторен практикум по физика “ЕКС-Прес”, Габрово, 2010; 7. Д.Христозов и др., Лабораторен практикум по физика, изд. Наука и изкуство, 1990; 8. Т.Трофимова. Курс по физика. Изд. На СУ“Кл.Охридски” 1995; 9. М.Максимов. Основи на физиката. Част 1,2 София 2000; 10.С.Дамянов. Сборник от задачи по физика.Изд.“Наука и изкуство“ София 1987; 11. Савалев И.В “Курс по обща физика” I,II,III т. изд. “Наука”, Москва 1973 г.; 12. С.Йорданов, Физика 1. ЕКС-ПРЕС,2006; 13. И.Вълков, Физика в “Задачи I”, “Макрос” Пловдив, 2012; 14. Д.Христозов и др., Лабораторен практикум по физика, изд. Наука и изкуство, 1990; 15. Н.Илков, С.Николов, Физика част 1, София, 2003.

DESCRIPTION OF THE COURSE

Name of the course: **Chemistry**	Code: **CHE01**	Semester: **1**
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 30 hours LW – 15 hours	Number of credits: **5**

LECTURER(S):
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Assist. Prof. Ivalina Petrova, PhD (FME), tel.: 032 659 671, e-mail: ivalinapetrova@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory from curricula for training of students to obtain Bachelor's degree, specialty "Mechanical Equipment and Technologies", "Mechanical and Instrument Engineering", "Mechatronics", Professional orientation 5.1 Mechanical Engineering, "Transport Equipment and Technologies", "Aviation Equipment and Technologies", Professional orientation 5.5 Transport, Shipping and Aviation, "Industrial Management", "Graphic Design and Printing", Professional orientation 5.13 General engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: To give basic knowledge about construction materials - metals, their alloys, polymers and other composites, by showing the relationship between the chemical composition, structure and properties. To study general regularities in the electrochemical and chemical conduct of metals in relation to the corrosion problem and its resolve. To provide theoretical and technological knowledge of basic chemical and electrochemical processes used in aircraft industry.

DESCRIPTION OF THE COURSE: The main chemical and physical properties of metals are discussed. Theoretical knowledge of electrochemical systems – electrode, electrolytic cell and galvanic cell are given. Students learn the theory of electrode potential and electrolysis processes, the kinetics of electrode reactions, and electrode over potential. Presented are the modern electrochemical sources of electric power (primary cells, batteries and fuel cells). An essential part of the course focuses on the mechanisms of corrosion processes and factors affecting their conduct, and the main methods and technologies for corrosion protection. This includes the basic knowledge of polymers - polymerization and polycondensation products, elastomers and inorganic polymers. The chemical composition, structure and properties of composite materials based on them – plastics, rubber composites, technical ceramics and cermets are studied.

PREREQUISITES: The knowledge of chemistry from the secondary school.

TEACHING METHODS: Lectures and laboratory works with protocols..

METHOD OF ASSESSMENT: Written exam.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. Демирев А. Практикум по химия. УИ П. Хилендарски, Пловдив, 2014; 2. Бетова И., И. Попова. Химия.ТУ - София, София, 2010; 3. Панайотов И., С. Факиров. Химия и физика на полимерите. УИ Св. Климент Охридски, София, 2005; 4. Райчев Р. Корозия и защита на материалите. Нови знания, София, 2000; 5. Петров Х., М. Енчева. Химия. Техника, София, 1994; 6. Ненов И. Теоретична електрохимия. Техника, София, 1991; 7. Ганчева Т., Е. Добрева., И. Яначкова. Ръководство за лабораторни упражнения по химия. Наука и изкуство, София, 1990; 8. Велева М., П. Копчев, К. Обрешков. Химия. Наука и изкуство, София, 1987; 9. Ганчева Т. Структура и свойства на конструкционите полимерни материали. Техника, София, 1982.

DESCRIPTION OF THE COURSE

Name of the course: **Information and Communication Technologies**	Code: **CCE23**	Semester: **1**
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Course work (CW)	Hours per semester: L – 30 hours S – 0 hours LW – 45 hours	Number of credits: **8**

LECTURER(S):

Assoc. Prof. Eng. Dilyana Budakova, PhD (FEA), tel.: 965 0895587539, e-mail: dilyana_budakova@tu-plovdiv.bg; dilyana_budakova@yahoo.com

Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curriculum for training of students to obtain Bachelor's degree, specialty Graphic Design and Printing orientation, Professional orientation 5.13 General engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: The aim of the course is to acquaint students with the approaches, methods and technical means for analysis, design and programming of software applications for solving a wide range of practical tasks; to get acquainted with a systematic approach in the development and analysis of information and communication systems; to be able to use modern information and communication technologies, to use technologies in programming and to solve problems with the means of algorithmic language for high level programming.

DESCRIPTION OF THE COURSE: The main topics concern: Elements of the general theory of systems. System approach in the construction of information systems. Introduction to information and communication systems. Life cycle and information systems development cycle. Data analysis and modeling. Choice of hardware and software. Project management. Cost-benefit analysis. Network schedules and Gantt diagrams. System design phase. Design of the output, input and interface of the system. Introduction to computer technology. Computer systems software. Algorithm. Presentation and storage of information in the computer, coding of information, symbolic and numerical data, number systems. Structural programming. Programming technology. Procedural language programming. Introduction to the programming language C. Elementary input-output operations. Basic management structures. Modularity in programming. Compound data types. Relationship between arrays and pointers, etc.

PREREQUISITES: Knowledge of mathematics.

TEACHING METHODS: Lectures, using slides, case studies, laboratory, work in teams, protocols.

METHOD OF ASSESSMENT: Two one-hour assessments at mid and end of semester (62%), laboratories (18%), course work (20).

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. K.E. Kendall, J.E. Kendal, Systems Analysis and Design, 8th ed., Prentice-Hall, 2011; 2. E. M. Awad, System Analysis and Design, Galgotia, 2010; 3. Б. Кернинган, Д. Ритчи, Програмен език C, Prentice Hall, 2002. 4. Хърбърт Шилдт, Практически самоучител, Най-успешният и доказан метод за научаване на C, Софтпрес, 2001.

COURSE DESCRIPTION

Course Title: **Foreign Language I**	Code: **LNG01**	Semester: **1**
Type of Teaching: **seminars**	Contact hours per semester: **S – 30 hours**	Number of credits: **2**

LECTURERS:	**Telephone:**	**E-mail:**
Sen. Lect. Penka Taneva – Kafelova (FME, English)	0888465545	tanneva@gmail.com
Sen. Lect. Konstantina Nyagolova (FME, English)	0887276513	konstantinanik@yahoo.com
Sen. Lect. Nadya Popova (FME, English)	659 707	popovanadia@yahoo.com
Sen. Lect. Anet Arabadjieva (FME, English)	0892231353	anet2003@abv.bg
Lect. Nadezhda Geshanova (FME, English)	0889314932	geshanova@tu-plovdiv.bg
Lect. Dr Daniela Valeva (FME, English)	0897899039	daniela.valeva89@gmail.com

COURSE STATUS IN THE CURRICULUM: Compulsory course in the curriculum of the ***Bachelor Degree Programme in Communication Design and Printing Technologies***, Professional qualification 5.13 General Engineering, Professional field 5 Technical Sciences.

COURSE OBJECTIVES: The course is targeted at further developing of students' language knowledge and practical skills in their specific professional field.

COURSE DESCRIPTION: The course is taught at language levels determined through placement tests, based on the principal foreign language studied at secondary school. No absolute beginner groups are formed. The course focuses on the further development of the four language skills in the domain of the students' major subject *Communication Design and Printing Technologies.*

PREREQUISITES: The minimum of language knowledge and skills acquired at secondary school.

TEACHING METHODS: Seminars targeted at further development of the four language skills through individual and team work using audio and video, as well as multimedia.

METHOD OF ASSESSMENT: Evaluation is based on continuous assessment and students get a grade at the end of the semester.

LANGUAGE OF INSTRUCTION: English

LITERATURE RECOMMENDED:

1. Intelligent Business 1, 2, 3, 4, Irene Barall, Nikolas Barall, Pearson
2. ProFile1 Pre-intermediate, Jon Naunton, Oxford University Press
3. ProFile2 Intermediate, Jon Naunton, Oxford University Press
4. Technical English, Pearson Longman

DESCRIPTION OF THE COURSE

Name of the course: **Sport**	Code: **SPR01**	Semester: **1**
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Self-Study (SS)	Hours per semester: L – 0 hours S – 0 hours SS – 30 hours	Number of credits: 1

LECTURER(S):
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Sen. Lect. Daniel Vladimdirov, PhD (FEA), tel.: 032 659 646, e-mail: danielv@tu-plovdiv.bg
Sen. Lect. Krassimir Djaldeti, PhD (FEA), tel.: 032 659 648, e-mail: krsj@tu-plovdiv.bg
Lect. Petar Doganov, PhD (FEA), tel.: 032 659 648, e-mail: pdoganov@tu-plovdiv.bg
Lect. Boris Spasov (FEA), tel.: 032 659 647, e-mail: boris_spassov@tu-plovdiv.bg
Technical University of Sofia-Branch Plovdiv
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curriculum / curricula for training of students to obtain Bachelor's degree, specialty „Industrial Engineering“, „Design and printed communications“, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: Targeted at further developing of students' physical activities, skills and hygiene habits through effective methods of physical education, improving their mental and physical performance.

DESCRIPTION OF THE COURSE: The knowledge and skills in Physical Education and Sports develop a wide range of motor skills and habits, help the hardening of the body and contribute to the moral development of students. The enhancement of physical skills is carried out through: 1. General Physical Preparedness (GPP) – in these seminars the students develop a wide range of motor skill and habits; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavourable environmental factors; develop their physical qualities and experience. 2. Sports-Specific Physical Preparedness (SPP) – students improve their sport skills and habits in a specific sport and gain experience through participation in competitions; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavourable environmental factors; develop their physical qualities and experience.

PREREQUISITES: The curricula presume the minimum of knowledge and skills acquired at secondary school.

TEACHING METHODS: Seminars in accordance with the curriculum in PE and Sport.

METHOD OF ASSESSMENT: Evaluation is based on functional tests at the end of semester. Lecturer's signature is required at the end of semester and "Pass grade".

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Владимиров В. Туризъм и ориентиране. Методическо ръководство за студентите от ТУ София, филиал Пловдив. Издателство на ТУ - София. 2010.

COURSE DESCRIPTION

Name of the course: **Introduction into the course**	Code: **FaBpIM01**	Semester: **1**
Type of teaching: Lectures (L)	Hours per semester: L – 15 hours	Number of credits: **1**

LECTURER:

Assoc. Prof. PhD Vladimir Ivanov", tel.: 032 659715; e-mail: vivanov@tu-plovdiv.bg,
Technical University - Sofia, Branch Plovdiv

COURSE STATUS IN THE CURRICULUM: Optional module for the students majoring in Industrial Management at the Faculty of Mechanical Engineering.

AIMS AND OBJECTIVES OF THE COURSE: The course is targeted at introducing the students to the structure of the syllabi for Bachelor's Degree; to the horizontal and vertical interrelation among the courses therein; as well as supplying answers to some practical issues of their training.

DESCRIPTION OF THE COURSE: The course introduces students to the history of the Technical University, the goal and the philosophy of their major subject. Students' rights and obligations during their university studies are clarified in detail. Teaching methods and the contents of the syllabus for Bachelor Degree in Industrial Management are presented.

PREREQUISITES: None.

TEACHING METHODS: : Lectures.

METHOD OF ASSESSMENT: Continuous assessment.

INSTRUCTION LANGUAGE: Bulgarian.

BIBLIOGRAPHY: none

DESCRIPTION OF THE COURSE

Name of the course: **Mathematics II**	Code: **MAT22**	Semester: **2**
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 30 hours S – 30 hours	Number of credits: **6**

LECTURER(S):
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Assist. Prof. Radka Koleva, PhD (FME), tel.: 032 659 681, e-mail: rkoleva@tu-plovdiv.bg
Technical University of Sofia, Branch Plovdiv
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curricula for training of students to obtain Bachelor's degree, specialties Industrial Management, Graphic Design and Printing, Professional orientation 5.13 General engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: Familiarization the students with basic parts of the mathematical analysis and neighbour mathematical disciplines necessary for application disciplines.

DESCRIPTION OF THE COURSE: Main topics: Numerical Sequences, Limits of Numerical Sequences, Limits and Continuity of Functions, Derivative of a Function of a Real Variable, Differential of a Function of One Variable; Indefinite integral; Definite integral and Applications; Ordinary differential equations; Functions of two and more variables – partial derivatives, Local Extrema of multivariable Functions.

PREREQUISITES: Very good training in Mathematics I (MAT12).

TEACHING METHODS: Lectures and Seminars.

METHOD OF ASSESSMENT: Written examination.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. Колектив на ИПМИ, Висша математика, части II и III, Техника, 1986; 2. Колектив на ИПМИ, Избрани глави от математиката, Модули I – V, Печатна база ТУ–София, 1993; 3. Колектив на ИПМИ, Сборник от задачи по висша математика, части II и III, Техника, 1979; 4. Дойчинов Д., Математически анализ, София, 1994; 5. Топенчаров В. и колектив, Сборник от задачи по висша математика, части I и II, Техника, 1977; 6. Маринов М. и колектив, Задачи по висша математика, части I и II, 2006; 7. Каранджулов Л. И., М. Маринов, М. Славкова, Кратък справочник по висша математика, 2007.

DESCRIPTION OF THE COURSE

Name of the course: **Engineering Graphics**	Code: **ENG02**	Semester: **2**
Type of teaching: Lectures (L) Laboratory work (LW) Course work (CW)	Hours per semester: L – 30 hours LW – 45 hours	Number of credits: **6**

LECTURER(S):
Assoc. Prof. Eng. Milcho Tashev, PhD (MIE), tel.: 659 660, e-mail: m_tashev@abv.bg
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Assist. Prof. Eng. Adelina Vasileva, PhD (MIE), tel.: 659 590, e-mail: adelina.bogoeva@abv.bg
Assist. Prof. Eng. Kristina Petkova, (MIE), tel.: 659 590, e-mail: k.petkova@tu-plovdiv.bg
Technical University of Sofia, branch Plovdiv

COURSE STATUS IN THE CURRICULUM: Compulsory facultative subject from the curriculum for training of students to obtain Bachelor's degree, specialty Graphic Design and Printing, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: The Engineering Graphics course aims to develop students' trimetric thinking and technical culture. It provides the necessary minimum of knowledge for constructing and reading images in technical drawings, reading a drawing of the general appearance of an assembled unit in order to detail, develop and design working design documentation and knowledge of the basic standardized elements. The student acquires knowledge and skills by making constructive drawings and text documents of the product in compliance with all important requirements of the standards in this field, necessary for the next disciplines in engineering training.

DESCRIPTION OF THE COURSE: The main topics concern: Basic positions of the graphical representation of geometric objects on a plane. Types of design. Monge design. Representation of a point, line and plane. Mutual position of geometric objects. Transformation of projections. Depiction of lines, surfaces and bodies. Plain sections. Intersection of surfaces and bodies. Axonometric design. Standardization of graphic information. Technical drawings. The theory and practice of Engineering Graphics are considered. The principles and methods of geometric and functional sizing of the products are considered. Reading a drawing of the general appearance of an assembled unit for the purpose of detailing and specification. Students will acquire skills for developing a set of working documentation, as well as for the implementation of the basic documents of a set of project documentation. More in-depth skills are created for the application of the current CAD systems in the automated execution of a detailed and assembled drawing of a set of documentation.

PREREQUISITES Knowledge and methods are used in the discipline "Mathematics" on the basis of which methods are developed for solving problems in the field of applied geometry and engineering graphics.

TEACHING METHODS: Lectures, using slides, case studies, laboratory and course work in the field of applied geometry are solved.

METHOD OF ASSESSMENT: Current assessment of course work.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Сандалски Б., П. Горанов, Г. Динев, И. Николова Основи на конструирането и CAD, София, СОФТТРЕЙД, 2008; 2. Туджаров Б., Е. Тодорова, Д.

Колева, М. Янчева “Ръководство за упражнения и курсова работа по Основи на конструирането и CAD I, София, СОФТТРЕЙД, 2008.

DESCRIPTION OF THE COURSE

Name of the course: **Technical Mechanics**	Code: **MEC12**	Semester: **2**
Type of teaching: Lectures (L) Seminars (S) Laboratory Work (LW)	Hours per semester: L – 45 hours S – 15 hours LW- 15 hours	Number of credits:**7**

LECTURER(S):

Associate Prof. Eng. Deyan Jelev, PhD (FME), tel.: 032 659 634
Chief Assist. Prof. Eng. Raycho Raychev, PhD (FME), tel.: 0895581138,
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Chief Assist. Prof. Eng. Chavdar Pashinski, PhD (FME), tel.: 0878302513,
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Technical University of Sofia, Branch Plovdiv

COURSE STATUS IN THE CURRICULUM: Compulsory facultative subject from the curriculum for training students for Bachelor's degree, specialties " Industrial Management " and "Design and printed communications ", professional field 5.1 Mechanical Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: The course builds engineering and technical culture in students and develops knowledge and skills for independent work and engineering assessment of various types of technical problems. The exercises expand the practical knowledge and skills in the studied discipline.

DESCRIPTION OF THE COURSE: The Main topics concern: Basic concepts and objects; Forces and actions with them; kinematics of particles, mechanical system and ideal rigid body; Geometric characteristics of bodies; Determination of internal forces and sizing of bodies. Machine dynamics..

PREREQUISITES: Mathematics, Physics, Technical documentation.

TEACHING METHODS: Lectures, using slides. Laboratory exercises are performed in a computer class using specialized software. The seminar exercises are presented in a classic version.

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

BIBLIOGRAPHY:

1. Ts. Nedev, V. Galabov, A. Lilov and A. Andonov, „Mechanical Engineering“, Softtrade 2002
2. V. Galabov, R. Dolchinkov and N. Nikolov, „Mechanical Engineering“, Irita, 2005.
3. I. Ivanov, „Technical Mechanics“, Hristo G. Danov, 1974.

DESCRIPTION OF THE COURSE

Name of the course: **Basics of Electrical Engineering and Electronics**	Code: **EEA27**	Semester: 2
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Course work (CW)	Hours per semester: L – 30 hours S –0 hours LW – 30 hours	Number of credits: **6**

LECTURER(S):
Assoc. Prof. Eng. Vasil Spasov, PhD (FEA), tel.: 032 659-535, e-mail: vasilspasov@tu-plovdiv.bg
Assoc. Prof. Eng. Anton Lechkov, PhD (FEA), tel.: 032 659766, e-mail: lechkov@tu-plovdiv.bg
Assist. Prof. Eng. Nikolay Paunkov, PhD (FEA), tel.: 032 659-535, e-mail: nick123@tu-plovdiv.bg
Assist. Prof. Eng. Vasilina Zlatanova, PhD (FEA), tel.: 032 659-535, e-mail: v_zlatanowa@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curricula for training of students to obtain Bachelor's degree, specialties Industrial Management and Design and Printing Communications, Professional orientation 5.13 General Engineering, Field 5. Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: To yield the students the necessary minimum of theoretical and practical knowledge and skills in Electrical Engineering and Electronics.

DESCRIPTION OF THE COURSE: The main topics in module Electrical Engineering concern: Advantages and disadvantages of electric power; sources and electricity production; DC circuits; AC single and three-phase circuits; transformers; three-phase and single-phase induction motors; synchronous generators; DC machines; electrical equipment for measurement, control, monitoring and protection; starting, stopping, reversing and speed control of electric motors; assessment of the economic efficacy of the modes of operation of electrical devices. The main topics in module Electronics concern: PN Junction. Semiconductor Diodes. Bipolar Junction Transistors. Thyristor. FET Transistors. IGBTs. Optoelectronic Devices.

PREREQUISITES: Mechanical Engineering, Mathematics and Physics.

TEACHING METHODS: Lectures and laboratory exercises. The lectures are delivered using multimedia. The exercises are provided with a manual and are conducted in a laboratory with developed models and stands. For every exercise students prepare an individual protocol that is defended before the leading lecturer.

METHOD OF ASSESSMENT: Exam that includes problems and questions from the delivered lectures.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. Цветков Д., Д. Цанов, Л. Павлов. Електротехника и електроника, София, 1997, ISBN 439-03-4805-X; 2. Цветков Д., Д. Цанов, Л. Павлов, П. Ралчева. Основи на електротехниката и електрониката, София, Техника, 1989; 3. Илиев К., В. Спасов. Основи на електротехниката и електрониката, Издателство на ТУ-София, филиал Пловдив, 1997; 4. Кривошиев Г., К. Илиев и др. Ръководство за лабораторни упражнения по електротехника и приложна електроника. С.,Техника, 1989; 5. Масларов И., В. Райдовска. Електротехника и електроника. С., Авангард Прима, 2010, ISBN 978-954-323-782-1. 6. Христов, М.. Полупроводникови елементи, Нови знания, 2007; 7. Дандаров, А. Оптоелектрони пробори и интегрални схеми, ТУ-София, 1991; 8. Thomas L. Floyd, Electronic devices, 1988.

COURSE DESCRIPTION

Course Title: **Foreign Language II**	Code: **LNG02**	Semester: **2**
Type of Teaching: **seminars**	Contact hours per semester: **S – 30 hours**	Number of credits: **2**

LECTURERS:	**Telephone:**	**E-mail:**
Sen. Lect. Penka Taneva – Kafelova (FME, English)	0888465545	tanneva@gmail.com
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Sen. Lect. Anet Arabadjieva (FME, English)	0892231353	anet2003@abv.bg
Lect. Nadezhda Geshanova (FME, English)	0889314932	geshanova@tu-plovdiv.bg
Lect. Dr Daniela Valeva (FME, English)	0897899039	daniela.valeva89@gmail.com

COURSE STATUS IN THE CURRICULUM: Compulsory course in the curriculum of the Bachelor Degree Programme in Communication Design and Printing Technologies, Professional qualification 5.13 General Engineering, Professional field 5 Technical Sciences.

COURSE OBJECTIVES: The course is targeted at further developing students' language knowledge and practical skills in their specific professional field.

COURSE DESCRIPTION: The course is taught at language levels determined through placement tests, based on the compulsory foreign language course taken in Semester 1 at TU – Sofia. No absolute beginner groups are formed. The course focuses on the further development of the four language skills in the domain of the students' major subject *Communication Design and Printing Technologies.*

PREREQUISITES: Completed compulsory foreign language course **LNG01** in Semester 1.

TEACHING METHODS: Seminars targeted at further development of the four language skills through individual and team work using audio and video, as well as multimedia.

METHOD OF ASSESSMENT: Evaluation is based on continuous assessment and students get a grade at the end of the semester.

LANGUAGE OF INSTRUCTION: English

LITERATURE RECOMMENDED:

5. Intelligent Business 1, 2, 3, 4, Irene Barall, Nikolas Barall, Pearson
6. ProFile1 Pre-intermediate, Jon Naunton, Oxford University Press
7. ProFile2 Intermediate, Jon Naunton, Oxford University Press
8. Technical English, Pearson Longman

DESCRIPTION OF THE COURSE

Name of the course **Practicum**	Code: **PRC01**	Semester: **2**
Type of teaching: Lectures, (L) Laboratory work (LW)/Seminars (S)	Hours per semester: L - – 0 hours LW – 0 hours	Number of credits: **2**

LECTURER:

Assoc. Prof. Dr. Angel Poparov (FME), tel: (032) 659 617 poparan@abv.bg;

Asst. Prof. Dr. Sabi Sabev (FME), sabi_sabev@tu-plovdiv.bg;

TU-Sofia, Plovdiv Branch,

COURSE STATUS IN THE CURRICULUM: Compulsory from curricula for training of students to obtain Bachelor's degree, specialty "Mechanical Equipment and Technologies", "Mechanical and Instrument Engineering", "Mechatronics", Professional orientation 5.1 Mechanical Engineering, "Transport Equipment and Technologies", "Aviation Equipment and Technologies", Professional orientation 5.5 Transport, Shipping and Aviation, "Industrial Management", "Graphic Design and Printing", Professional orientation 5.13 General engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: Introducing to students with metal cutting machines, metal cutting tools, devices, metal processing by plastic deformation and welding.

DESCRIPTION OF THE COURSE: Studying provided in the curriculum subjects at the end of the course students will be able to design processes of some of the most complex products in engineering, such as tools.

PREREQUISITES: It is necessary to study in advance or parallel disciplines: Technical Drawing, Material Science and Technology of Materials, Fundamentals of Design and CAD - II.

МЕТОД ЗА ПРЕПОДАВАНЕ: Laboratory work

METHOD OF ASSESSMENT: Oral examination on the subject withdrawn by the student.

INSTRUCTION LANGUAGE: Bulgarian.

BIBLIOGRAPHY: 1. Хаджийски П. Програмиране и настройване на металорежещи машини с ЦПУ, С., ТУ, 2005, Събчев П. М. Металорежещи инструменти, Техника, С., 1982, Палей М. М. Технология производства приспособления, пресформ и щанц. Машиностроение, М., 1971.

DESCRIPTION OF THE COURSE

Name of the course: **Sport**	Code: **SPR02**	Semester: **2**
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Self-Study (SS)	Hours per semester: L – 0 hours S – 0 hours SS – 30 hours	Number of credits: 1

LECTURER(S):
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Lect. Petar Doganov, PhD (FEA), tel.: 032 659 648, e-mail: pdoganov@tu-plovdiv.bg
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Technical University of Sofia-Branch Plovdiv
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curriculum / curricula for training of students to obtain Bachelor's degree, specialty „Industrial Engineering“, „Design and printed communications“, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: Targeted at further developing of students' physical activities, skills and hygiene habits through effective methods of physical education, improving their mental and physical performance.

DESCRIPTION OF THE COURSE: The knowledge and skills in Physical Education and Sports develop a wide range of motor skills and habits, help the hardening of the body and contribute to the moral development of students. The enhancement of physical skills is carried out through: 1. General Physical Preparedness (GPP) – in these seminars the students develop a wide range of motor skill and habits; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavourable environmental factors; develop their physical qualities and experience. 2. Sports-Specific Physical Preparedness (SPP) – students improve their sport skills and habits in a specific sport and gain experience through participation in competitions; work to improve strength, speed, endurance, flexibility, structure and skill; increase resistance to unfavourable environmental factors; develop their physical qualities and experience.

PREREQUISITES: The curricula presume the minimum of knowledge and skills acquired at secondary school.

TEACHING METHODS: Seminars in accordance with the curriculum in PE and Sport.

METHOD OF ASSESSMENT: Evaluation is based on functional tests at the end of semester. Lecturer's signature is required at the end of semester and "Pass grade".

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Владимиров В. Туризъм и ориентиране. Методическо ръководство за студентите от ТУ София, филиал Пловдив. Издателство на ТУ - София. 2010.