DESCRIPTION OF THE COURSE

Name of the course: **Business Ethics**	Code: BpIM07.1	Semester: 5
Type of teaching: Lectures(L) Seminars (S)	Hours per semester: L – 30hours S – 15 hours	Number of credits: **4**

LECTURER(S):

Assoc. Prof. Atanaska tenewa, PhD tel.: 965 XXXX, e-mail: atanaska_teneva@abv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory elective course from the curriculum for training students for Bachelor's degree, specialty "Industrial Management", Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: At the end of the course the students will develop their ethical sensitivity; will acquire skills for recognizing, analyzing and choosing behavior in conflict and risk situations in the field of business by applying appropriate ethical approaches; will be able to highlight and analyze ethical aspects in management. The course acquaints students with competing concepts in business ethics, with generally accepted ethical standards in business practice and their applicability. Combines moral philosophy with conceptual elements of economic analysis and public policies at three possible levels of ethical analysis: individual behavior and ethical problems in communication; the intermediate level of the business organization itself as a main subject of economic activity; the institutional and socio-cultural level of ethical rules and norms.

DESCRIPTION OF THE COURSE: The main topics concern: factors for the emergence of business ethics and stages in its institutionalization; basic ethical categories, principles and concepts; those for the social responsibility of business; ethical infrastructure in the business organization; standard for ethical business leadership; professional ethics; moral development of the individual and the organization; analysis of ethical dilemmas; ethical marketing; consumerism, etc.

PREREQUISITES: Philosophy, Psychology, Ethics, Organizational Behavior, Business Communications, Marketing.

TEACHING METHODS: Lectures with multimedia presentations and discussions, seminars with defense of personal research tasks, summary and commentary on authentic texts.

METHOD OF ASSESSMENT: Two one-hour written current assessments in the middle and end of the semester (40% in total), participation in seminars (15%), individual topic with a presentation (25%), presentation of good business practices (10%).

INSTRUCTION LANGUAGE: Bulgarian/English

BIBLIOGRAPHY: 1. Dramalieva, V. 2014. Business ethics and corporate social responsibility in modern business management. Sofia: Publishing Complex - UNWE; 2. Kaftan VV, Chernyshova LI.2019. Business ethics. GrifGrif; 3. Sotirova, D. 2014, Business Ethics, Faber; 4. Teneva, At. 2017, Applied Ethics; 5. OC Ferrell O.C., D.E. Harrison, L. Ferrell, J.F. Hair, 2019, Business ethics, corporate social responsibility, and brand attitudes: An exploratory study; 6. Ghillyer A., 2012. Business ethics

DESCRIPTION OF THE COURSE

Name of the course: **Business communications**	Code: **BpIM07.2**	Semester: 5
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 30 hours S – 20 hours	Number of credits: 4

LECTURER(S):
Assoc. Prof. Toni Mihova, PhD (FME), tel: 032 659 714, e-mail: expert2009@abv.bg
Assist. Prof. Elena Zlatanova-Pazheva, PhD (FME), tel.: 032 659 712,
e-mail: elyzlatanova@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Elective subject from the curriculum for training of students to obtain Bachelor's degree, specialty Industrial Management, Professional orientation 5.13 General Engineering.

AIMS AND OBJECTIVES OF THE COURSE: At the end of the course the students are expected to know the methods of communication and to use them to effectively submit messages and information through various channels.

DESCRIPTION OF THE COURSE: The scope of the course is the essence of the science of communication. Communication as a process is considered in detail. The phases for the course of the communication are traced. Communication models are studied. Detailed attention is paid to the types of communication. The oral business communication section focuses on building the skill of creating and presenting a presentation. The ways for acquiring and improving the presentation skills and speaking in front of an audience are considered in detail. In the part for written business communication its main characteristics and functions are considered. Attention is paid to the types of business correspondence and the basic rules in its preparation. Communication skills are presented in the context of the need to acquire effective speaking, listening, writing and reading, as well as the ability to effectively send accurate messages and provide feedback. Interpersonal communication in the organization and daily communication is considered. The different roles in communication have been studied, as well as the problems that may arise during this process. Ways to improve communication skills are discussed.

PREREQUISITES: Marketing, Economic theories, Fundamentals of management.

TEACHING METHODS: Lectures using presentations, discussions with the active participation of students after preliminary preparation. Seminar exercises - discussion of cases.

METHOD OF ASSESSMENT: The method of assessment is through final assessment

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:

1. Navarro, D., Dictionary of Body Language, East-West, 2019
2. Dobreva, E., Theses on the theory of mass communication, Shumen University, 2013
3. Penevska, V., Basic communication skills, Grail, 2016
4. Boykov, V., Boykov, D., Oral and written business communication, Orpheus Lyre Academy, 2015
5. Borisova, L., Vedar, J., Written and oral communications, Sofia, International Business School, 2011
6. Dimov, P., Web Copywriting, 2011, http://www.postvai.com/
7. Bernays, E., Formation of public opinion, ed. East-West, 2020

8. Eftimova, A., Media Language and Style: Theory and Contemporary Practices, ed. "St. Kliment Ohridski", 2014
9. Sharenska, E., Rizova, M., Business Communications, ed. Martilen, 2015
10. Aleksieva, S., Business Communications, NBU, 2011
11. Sabeva, J., Non-verbal communication in business communication, "St. Kliment Ohridski", 2020
12. Raykov, Z., Creative Communication, ed. Darmon, 2010
13. Stoykov, L., Facebook communication, ed. Alma Communication, 2012
14. Kamenova, D., Mediation and non-verbal communication, ed. Labor, 2021
15. Kulkarni, A., Contemporary communication without words, ed. Edict, 2015
16. Kaftandjiev, H., Mythological archetypes in communications, "St. Kliment Ohridski", 2015
17. Oswald, I., Communication - Every Word Hides Power, ed. Bard, 2013
18. Lones, L., The Art of Conversation, ed. Hermes, 2016
19. Lones, L., How to Communicate in the Workplace, ed. Hermes, 2019
20. Hristova, E., Communications in the organization in the 21st century, ed. Roy Communication, 2012
21. Janner, G., The Art of Talking, ed. Locus, 2019
22. Carnegie, D., The Art of Speaking to Others, ed. East-West, 2011.

DESCRIPTION OF THE COURSE

Name of the course: **Economics of Industrial Enterprise**	Code: **BpIM08**	Semester: **5**
Type of Teaching: Lectures(L) Laboratory work (LW) Course work (CW)	Hours per semester: L – 30hours LW – 30 hours	Number of credits: **6**

LECTURERS:

Assoc. Prof. PhD Vladimir Ivanov", tel.: 032/659715; e-mail: vivanov@tu-plovdiv.bg

COURSE STATUS IN THE CURRICULUM:

Compulsory for full-time Industrial Management students in the Faculty of Mechanical Engineering, Bachelor's Degree.

AIMS AND OBJECTIVES OF THE COURSE:

Furthering of studies and practical interpretation of basic economic categories and their expression, interrelation and management in the company.

DESCRIPTION OF THE COURSE:

Main topics: Introduction into the Economy of the Company; Business environment of the company; Functioning and management of the company; Fixed capital; Assets; Premises and equipment; Staff; Expenditure and cost; Pricing; Sales; Revenues of the company; Efficiency of production activities; Investment and finance of the company; Financial planning.

PREREQUISITES: Basic concepts in Mathematics, Industrial Legislation and Economics

TEACHING METHODS:

Lectures and laboratory work. A multimedia beamer is used in lectures; computers, calculators and written assignments – in laboratory works. Course work description preparation and defence.

METHOD OF ASSESSMENT:

Examination assessment in the form of a written test and practical problems solving, course work. Weighing in the final grade as it follows: 50% from the final test result and 35% from the completion of the practical tasks, course work – 15%..

INSTRUCTION LANGUAGE: Bulgarian.

BIBLIOGRAPHY:

1. Записки от лекции по икономика на предприятието – Иванов Владимир, Пловдив, 2021
2. Икономика на предприятието, Георгиев Иван, Щерев Николай, Благоев Димитър, София, УНСС, 2017
3. Икономика на предприятието, Варамезов Любчо, Найденов Сертей и др., изд. Фабер, В. Търново, 2015
4. Икономика на предприятието, Благоев Благо, Шинева Румяна и др., Изд. „Наука и икономика", Ик. университет – Варна, 2010
5. Търговски закон -2021 г.
6. Закон за счетоводство – 2016 г.
7. Закон за ДДС – 2021 г.
8. Закон за корпоративното подоходно облагане - 2021 г.

DESCRIPTION OF THE COURSE

Name of the course: **Quality Management**	Code: **BpIM09**	Semester: **5**
Type of teaching: Lectures (L) Seminars (S)	Hours per semester: L – 30 hours S – 15 hours	Number of credits: **4**

LECTURER(S):
Assoc.orof. Toni Mihova tel: 659 714 e-mail: mihova@tu-plovdiv.bg As. Eng.Konstantin Chukalov, PhD (FME), tel.: 659 618, e-mail: chukalov@tu-[;pvdov.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curriculum for education of students learning Bachelor's degree, specialty Industrial Management, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: At the end of the course the students are expected to have theoretical knowledge and practical skills must have theoretical knowledge of techniques and methods and practical skills for building, implementing and maintaining quality management systems

DESCRIPTION OF THE COURSE: The main topics concern: Quality definitions and stages of development. Approaches; Quality analysis and management tools. Seven classic and managerial tools. Complex methods. QFD, FTA, FMEA, DRBVM, SPS, etc.; Techniques and methods for quality assurance of services; Product safety requirements. Conformity assessment. Old, New and Global Approaches; Standardization - Basic concepts. Scope. Goals. Principles. Introduction to the standards ISO 9000, ISO 9001, ISO 9004, ISO 19011, etc . Quality management systems - basic requirements. Audit of management systems. Certification and accreditation; Total quality management - nature and approaches. Economic problems of the quality. Types of quality costs and approaches for their optimization of quality costs.

PREREQUISITES: Fundamentals of Management .

TEACHING METHODS: Lectures using laptop and multimedia projector. Conducting seminars working in teams to solve problems, cases and presentations on pre-set topics.

METHOD OF ASSESSMENT: Two test assessments at the middle and end of semester (100%),.

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. Brüggemann, H., P.Bremer,Grundlagen Qualitätsmanagement: Von den Werkzeugen über Methoden zum TQM, Hanser, 2020, ISBN 978-3658287795, 2. Herrmann, J. P.Fritz, Qualitätsmanagement - Lehrbuch für Studium und Praxis, Hanser, 2016, ISBN 978-3446440432 ; 3. Nikolova, I. Quality Management – Theorie and Praxis, King, 2019, ISBN 978-954-9518-99-3; 4. Sommerhoff, B., QM im Wandel.Personenzentriertes Innovations- und Qualitätsmanagement, Hanser, 2021, ISBN 978-3-446-45573-3; 5. Weidnee, E. Qualitätsmanagement: - Kompaktes Wissen - Konkrete Umsetzung - Praktische Arbeitshilfen, Hanser, 2020, ISBN 978-3446462120.

DESCRIPTION OF THE COURSE

Name of the course: **Accounting**	Code: **BpIM10**	Semester: **5**
Type of Teaching: Lectures(L) Laboratory work (LW)	Hours per semester: L – 30hours LW – 20 hours	Number of credits: **4**

LECTURERS:

Assoc. Prof. PhD Vladimir Ivanov", tel.: 032/659715; e-mail: vivanov@tu-plovdiv.bg

COURSE STATUS IN THE CURRICULUM:

Compulsory for full-time Industrial Management students in the Faculty of Mechanical Engineering, Bachelor's Degree.

AIMS AND OBJECTIVES OF THE COURSE:

Students acquire knowledge and skills in the role of accountancy for efficient day-to-day economic and investment activity.

DESCRIPTION OF THE COURSE:

Main topics: The Nature of Financial Accounting; the Balance Sheet; the main balance sheet transactions; system of accounts; the double-entry accounting systems; chart of accounts; reporting of long-lived asset and depreciation, current assets, current liabilities, stockholders equity, sales and cost of goods sold, profit and taxes; preparation of final financial statements.

PREREQUISITES: Basic concepts in Mathematics and Company Economics.

TEACHING METHODS:

Lectures and laboratory work. A multimedia beamer is used in lectures; computers, calculators and written assignments – in laboratory works.

METHOD OF ASSESSMENT:

Examination assessment in the form of a written test and practical problems solving. Weighing in the final grade as it follows: 60% from the final test result and 40% from the completion of the practical tasks.

INSTRUCTION LANGUAGE: Bulgarian.

BIBLIOGRAPHY:

1. Счетоводство на предприятието – Иванов Владимир, Пловдив, Интелексперт-94, 2016
2. Основи на счетоводството – Петров Любен, С., Мартилен, 2020
3. Обща теория на счетоводството – Петров Любен, С., Мартилен, 2016
4. Финансово счетоводство – Генов Слави, изд. Геа-Принт, Варна 2016
5. Закон за счетоводство – 2016 г.
6. Закон за ДДС – 2021 г.
7. Закон за корпоративното подоходно облагане - 2021 г.

DESCRIPTION OF THE COURSE

Name of the course: **Industrial Engineering**	Code: **BpIM11**	Semester: **5**
Type of teaching: Lectures (L) Laboratory work (LW))	Hours per semester: L – 30 hours LW – 30 hours	Number of credits: 5
Course project (CP)	Code: **BpIM13**	Number of credits: **3**

LECTURER(S):
Prof. Valentina Nikolova-Alexieva, PhD, tel.: 0885 69 66 69, email: valentina_nikolova@abv.bg
Assist. Prof. Eng. Tanya Gigova, PhD (FME), tel.: 659 717, e-mail: gigova@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory subject from the curriculum for training of students to obtain Bachelor's degree, specialty Industrial Management, Professional orientation 5.13 General Engineering.

AIMS AND OBJECTIVES OF THE COURSE: Students broaden, enhance and further their knowledge on the theoretical bases of engineering, deal with specific management issues in engineering investment process, engineering activities and design solutions in the industrial enterprise, and acquire personal practical skills for defining and solving various engineering issues.

DESCRIPTION OF THE COURSE: The main topics concern: Introduction into Industrial Engineering; Engineering Tools, Engineering process and activities in the production and implementation of new products, Investment process. System engineering in the industrial enterprise. Resource engineering. Production infrastructure engineering. Interior construction of industrial enterprises. Labour organization design, etc.

PREREQUISITES: Basic knowledge of Economics, Humanities, Mathematics, Engineering, as well as of technical and technological subjects.

TEACHING METHODS: Audio-, video- and multimedia-aided lectures and lab work. Active teaching methods.

METHOD OF ASSESSMENT: Written exam with tests (80 %), laboratory works (20%).

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Enimanev K. Organization and Management of Industrial Production: Production Management and Engineering. Primax, Ruse, 2018, ISBN 978-619-7242-49-2; 2. Kumar K. Industrial Engineering and Management, Pearson, India, 2015 ISBN 9332559012, 9789332559011; 3. Dakov I. Organization of production and operating systems: organization of production. Technical University of Sofia, Sofia, 2014, ISBN 978-619-167-137-3; 4. Lefterofa T. Guide to Discipline Exercises "Engineering II (Industrial Engineering)", Softtrade, Sofia, 2010, ISBN 978-954-334-085-9; 5. Gigova T. Methodology for business processes reengineering, Imeon, Plovdiv, ISBN 978-619-7570-00-7; 6. The Public Procurement Act; 7. Ordinance on tenders and competitions..

DESCRIPTION OF THE COURSE

Name of the course: **Strategic Management**	Code: **BpIM12**	Semester: 5
Type of teaching: Lectures(L) Seminars (S)	Hours per semester: L – 30 hours S – 20 hours	Number of credits: 4

LECTURER(S):

Professor Ivan Ivanov, PhD – guest lecturer
Chief Assistant Professor Georgi Georgiev, PhD tel. 659706, email: georgi@tu-plovdiv.bg,
Technical University of Sofia

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

AIMS AND OBJECTIVES OF THE COURSE: Upon completion students will have basic knowledge and skills for carrying out strategic goal setting, analysis and choice in fast-changing business environment.

DESCRIPTION OF THE COURSE: Within the Strategic Management course the main topics discussed are: Introduction in Strategic management – evolution of the strategic managerial thought and practice; The strategic management process - rational model and its main stages; Strategic goal-setting – organizational mission and vision; Strategic analysis – analyzing the external and internal organizational environment, methods and tools, SWOT analysis; Strategic choice – essence of the organizational strategy, types of organizational strategies, models of organizational strategies, criteria for strategic choice; Strategy implementation – action plan, resource planning and organizational support; Strategic control – essence and methods for strategic control; Strategic management and the new challenges – globalization as a strategic factor, sustainable development as a strategic development concept, the turbulent business environment.

PREREQUISITES: Economic Theories and Basics of Management

TEACHING METHODS: Lectures with slides and topic discussions; Seminars with tests, business games and group case study discussions.

METHOD OF ASSESSMENT: Final result from one mid-term control test (20%) and a Final written exam (80%)

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1.Димитър Каменов „Стратегическо бизнес планиране” изд. ИИОМ„ОКОМ”, София 2008 г.; 2.Кирил Тодоров, „Стратегическо управление в малките и средните фирми” изд. Сиела, София 2001 г.; 3. Цвета Зафирова, „Стратегическо управление” изд. „Наука и икономика”, Варна 2007 г.; 4. Михаил Михайлов, Стратегическо управление на туризма, Издателство: Нов български университет, ISBN 9789545358777, 2015 г. 5. Маргарита Панова, Тодор Панов, Стратегическо управление на публичния сектор, Университетско издателство „Св. Климент Охридски“, ISBN: 978-954-07-4243-4, 2017г.; 6. Ерик Фламхолц и Ивон Рандъл, Болки на растежа. Изграждане на устойчиви успешни организации, Издателска къща МаК, ISBN 9789548585385, 2017 г.; 7. Джоан Магрета, Как да разбираме Майкъл Портър, Класика и Стил, ISBN 9789543271085, 2017; 8. Gerry Johnson, Patrick Regner, Richard Whittington, Kevan Scholes, Duncan Angwin, Exploring Strategy, Pearson Education, 2017 г.

DESCRIPTION OF THE COURSE

Name of the course: **Sport**	Code: **FaSPR05**	Semester: 5
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):
Assoc. Prof. Valentin Vladimirov, PhD (FEA), tel.: 032 659 646, e-mail: valdesv@tu-plovdiv.bg
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

COURSE STATUS IN THE CURRICULUM: Facultative subject from the curriculum 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.

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

Course Title: **English for specific purposes**	Code: **FaBpIM02**	Semester: **5**
Type of Teaching: **Seminars (S)**	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)	032 659 707	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: Optional course in the curriculum of the ***Bachelor Degree Programme in Industrial Management,*** 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 compulsory foreign language course taken in Year 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 *Industrial Management*.

PREREQUISITES: Completed compulsory foreign language course **LNG01** and **LNG02** in Year 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 course.

LANGUAGE OF INSTRUCTION: English

LITERATURE RECOMMENDED:

1. Intelligent Business English, Pearson Longman
2. Developing Business Contacts, Oxford University Press
3. Negotiating, (Longman Business English Skills S.), Longman
4. Telephoning (Longman Business English Skills S.), Longman
5. Presenting facts and figures, (Longman Business English Skills S.), Longman

DESCRIPTION OF THE COURSE

Name of the course: **Human Resources Management (HRM)**	Code: **BpIM14**	Semester: **6**
Type of teaching: Lectures(L) Laboratory work (LW)/Seminars (S) Course work (CW)	Hours per semester: L – 30hours S –0 hours LW – 15 hours	Number of credits: **5**

LECTURER(S):
Assoc. Prof. Toni Mihova, PhD (FME), tel.: 0893 69 06 55, e-mail: mihova@tu-plovdiv.bg
Assist. Prof. Eng. Tanya Gigova, PhD (FME), tel.: 659 717, e-mail: gigova@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: The course "Human resources management" is included as mandatory for Bachelor degree students in Industrial Management at the Faculty of Mechanical Engineering, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: Students need to learn and deepen their knowledge of the theoretical foundations of "Human resources management" (HRM), to master the specific problems in the field of organization and management of human resources and to acquire practical skills and habits of independent work with them.

DESCRIPTION OF THE COURSE: The Main topics: Introduction to the course HRM, Planning and organization of human resources, Analysis and planning of labor, Personnel selection and recruitment, Labor performance assessment, Training and development, Determination of salaries, Providing healthy and safe working conditions.

PREREQUISITES: Management, Sociology, Economics, Organizational behavior.

TEACHING METHODS: Lectures with presentations, discussions with active participation of students after preparation. Laboratory work – with course assignments, comprising description and defence..

METHOD OF ASSESSMENT: Final assessment, resulting in a mark, consisting of two components: exam's test with a weight of 0,50 and assessment of the performance during the laboratory work with a factor of 0,50..

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:1. Mihova, T., Human resources management. Theory and practice, Imeon, Plovdiv, 2018; 2. Kolchagova B., Human resources management Softrade, 2015; 3.New Bulgarian University, Human resources management; 4. Milanova, A., and al, Management of human capital in business environment AE "Prof. M.Drinov"; 5. Shopov,D., D. Kamenov, M. Atanasova, G. Evgeniev, Y. Bliznakov, How to manage human resources in an enterprise + CD, Labour and law, 2013; 6. Shopov D., M. Atanasova, Human resources management, Trakia - M, S, 2009; 7. Mihova, T.,Daylianova, Hr., Gigova, T., Handbook in human resources management,Imeon, Plovdiv, 2018..

DESCRIPTION OF THE COURSE

Name of the course: **Management of safety and reliability of industrial systems**	Code: **BpIM15**	Semester: 6
Type of teaching: Lectures(L) Laboratory work (LW)	Hours per semester: L – 20hours LW – 20 hours	Number of credits: **4**

LECTURER(S):
Assist. Prof. Eng. Ilko Tarpov, PhD (FEA), tel.: 032 659 512, e-mail: i_tarpov@tu-sofia.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory / elective / compulsory elective / facultative subject from the curriculum / curricula for training of students to obtainBachelor's degree, specialty Industrial Engineering, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: At the end of the course students should be able to apply the safety management methodology of the applied technical solutions for the implementation of safe and healthy working conditions, as well as the reliability of industrial systems. To get acquainted with standardized and put into practice permissible values and parameters of harmful and dangerous effects, methods for their control and means of protection.

DESCRIPTION OF THE COURSE: The main topics concern Normative documents related to ensuring safe and healthy working conditions. Governing bodies for safety and health at work. Types of briefings. Technical measures to ensure electrical safety. Protection against direct and indirect contact. Microclimate and factors of the working environment. Dangerous and harmful production factors. Electric and magnetic fields. Basic terms and definitions in the theory of reliability. Classification of failures. Reliability and quality. Reliability indicators. Random events and quantities in the theory of reliability, etc.

PREREQUISITES: The course of lectures and exercises is based on the knowledge of students in Physics, Mathematics, Theoretical Electrical Engineering.

TEACHING METHODS: Lectures, using slides, case studies, laboratory and course work, work in teams, protocols and course work description preparation and defence.

METHOD OF ASSESSMENT: Two one-hour assessments at mid and end of semester (70%), laboratories (30%).

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Генчев М. Кирчев В., Техническа безопасност и екозащита, ISBN 978-954-2937-08-1 , ТУ София, филиал Пловдив, 2011; 2. Вълчев М. Охрана на труда. С. Техника 1990; 3. Анев Т. и колектив. Вредни въздействия на електричеството и защита от тях С. Техника, 1987.

DESCRIPTION OF THE COURSE

Name of the course: **Commercial and competition law**	Code: **BpIM16**	Semester: **6**
Type of teaching: Lectures(L) Seminars (S) Course Work (CW)	Hours per semester: L – 30hours S – 15 hours	Number of credits: **4**

LECTURER(S):

Assoc. Prof. Eng. Ivan Shopov, PhD (FMU), tel.: 0895587547,, e-mail:ivan_chopov@abv.bg
Assist. Boicho Bochev, PhD (FMU), tel.: 0895587460, e-mail: brp.p@abv.bg
Technical University of Sofia, branch Plovdiv

COURSE STATUS IN THE CURRICULUM: Compulsory from the curricula for training students for "Bachelor's Degree", specialty "Industrial Management", professional direction 5.13 General Engineering, District 5. Technical sciences.

AIMS AND OBJECTIVES OF THE COURSE: Upon completion of the course, students must be able to apply their knowledge of commercial law to choose an appropriate form of entrepreneurship, proper categorization of sales assistants in the company and related job descriptions, purpose-based use of the commercial register, in accordance with the COMMERCIAL procedures for registration and management of the company, proper conduct in the conduct of commercial transactions, control of the work of service lawyers, protection from unfair competition.

DESCRIPTION OF THE COURSE: Main topics: Concept, substance, subject matter, sources of commercial law, commercial law entities, commercial enterprise, commercial representation, types of traders, sole trader, collecting company, limited partnership and one with shares, Ltd., joint-stock company, transformation of companies, commercial collateral, commercial transactions, insolvency, protection of competition.

PREREQUISITES: Information and Communication Technologies, Internet Technologies, Manufacturing Technologies, Economic Technologies, Basics of Management, Industrial Legislation, Manufacturing Engineering

TEACHING METHODS: Lectures using slides, seminar exercises with discussions, practical examples and case resolution.

METHOD OF ASSESSMENT: Two one-hour written current assessments in the middle and end of the semester (62% in total), participation in seminars (38%)

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:1. Course in commercial law, Alexander Ivanov, ed. Ciela, ISBN: 978-954-28-1310-1; 2. Textbook of Commercial Law, Ognyan Gerdjikov, ed. Labor and Law, ISBN: 978-954-608-286-2; 3. Commercial Law, Emil Zlatarev, Veselin Hristoforov, ed. Ciela, ISBN: 9546493724

DESCRIPTION OF THE COURSE

Name of the course: **Production management**	Code: **BpIM17**	Semester: 6
Type of teaching: Lectures (L) Laboratory work (LW))	Hours per semester: L – 30 hours LW – 30 hours	Number of credits: 5
Course project (CP)	Code: **BpIM20**	Number of credits: 3

LECTURER:

Assist. Prof. Nikolay Katrandzhiev, PhD - telephone: 659 715,
email:nkatrandzhiev@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory course in the curriculum of the Bachelor Degree Programme in Industrial Management., Professional qualification 5.13 General Engineering, Professional field 5 Technical Sciences..

AIMS AND OBJECTIVES OF THE COURSE: The course introduces the students to the theory and practice of production management as a functional area in the management of business enterprise. After completing this course, the students will be able to: a) acquire understanding of the functions of production management in the context of business enterprise; b) develop skills in solving production management problems.

DESCRIPTION OF THE COURSE: Topics discussed in this course include: product strategy; process strategy and capacity planning; location and layout strategies; facility layout; supply-chain management (SCM); material requirement planning (MRP); review of quantitative methods aggregate planning; scheduling and controlling production activities; just-in-time systems**,** process design, employing KANBAN; quality management systems – fundamentals and vocabulary; reliability and maintenance.

PREREQUISITES: Economics of Industrial Enterprises, Fundamentals of Management, Strategic Management, Manufacturing Engineering, Industrial Engineering, *Marketing*, Manufacturing Engineering – project, Information and Communucation Technologies, Internet Technologies.

TEACHING METHODS: Lectures with multi-media presentations, case studies, laboratory work - teamwork.

METHOD OF ASSESSMENT: Two one-hour written current assessments in the middle and end of the semester (30% in total),, laboratories (20%), exam test (50%).

INSTRUCTION LANGUAGE: Bulgarian/English

BIBLIOGRAPHY: 1. Цветков Г., Производствен Мениджмънт, София, Люрен, 1996 год. 2. Цветков Г. Алвасов Б., Оперативно управление на машиностроителното производство, Записки от лекции, София, ВМЕИ, 1987 год. 3. Krajewski and Ritzman, Operations Management (Strategy and Analysis), AWP Company, 1993. Chase and Aquilano, Produktion and Operation..

DESCRIPTION OF THE COURSE

Name of the course: **Marketing Management**	Code: **BpIM18**	Semester: **6**
Type of teaching: Lectures(L) Laboratory work (LW) Course work (CW)	Hours per semester: L – 30hours LW – 15 hours	Number of credits: **5**

LECTURER(S):

Assist. Prof. Nikolay Katrandzhiev, PhD - telephone: 659 715,
email:nkatrandzhiev@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Compulsory course in the curriculum of the Bachelor Degree Programme in Industrial Management., Professional qualification 5.13 General Engineering, Professional field 5 Technical Sciences..

AIMS AND OBJECTIVES OF THE COURSE: At the end of the course the students are expected to be able to apply the methodology for modelling and simulation of continuous, discrete time as well as discrete-event systems, to have basic knowledge on simulation software (MATLAB, SIMULINK, GPSS, PSpice) and use it in solving of engineering problems, analysis and validation of the results.

DESCRIPTION OF THE COURSE: The main topics concern: System models - physical similarity and analogy principles; Model transformation and reduction; Constructing and using complex models; Simulation modelling - modelling of time, Monte Carlo simulation, verification and validation of models, model analysis, design of simulation experiments; Continuous processes simulation- numerical integration methods, accuracy and stability of the solution, aliasing effect; Computer simulation of large circuits and systems - sparse matrix approach, modified nodal approach, structural graphs, sparse matrices, assessment of effectiveness; Building blocks and subsystems, links and interfaces, input and output, types of analyses (analogue, discrete, analogue-discrete, mixed-mode, synchronous and asynchronous digital simulation); Simulation of discrete-event systems and queuing systems; Software tools and languages-MATLAB, GPSS, PSpice, etc.

PREREQUISITES: Economics of Industrial Enterprises, Fundamentals of Management, Strategic Management, Manufacturing Engineering, Industrial Engineering, Marketing, Finance, Information and Communucation Technologies, Internet Technologies..

TEACHING METHODS: Lectures, using slides, case studies, laboratory and course work,.

METHOD OF ASSESSMENT:A one-hour written test in the middle of the semester (10%), laboratories (20%), course work - two off assignments (20%), exam test (50%).

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Велев Мл., Маркетингови комуникации, ИК “Софтрейд”, С., 1998., 2. Котлар Ф., Управление на маркетинга. Анализ, планиране, реализация и контрол., “Графема”, 1996., 3. Кузманов Г., Маркетинг,изд. EVIC, 2002., 4. Buell V., Marketing Management – a strategic Planning Approash, McGraw-Hill, Inc., 1984., 5. Dalrimple D., Parsons L., Marketing Management. Strategi and Cases, John Wiley & Sons, 1983....

DESCRIPTION OF THE COURSE

Name of the course: **Computer systems in industrial management**	Code: **BpIM19.**1	Semester: **6**
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 30 hours LW – 20 hours	Number of credits: 4

LECTURER(S):
Assoc. Prof. Eng. Atanas Kostadinov, PhD (FEA) tel.: 659 726, e-mail: kostadat@tu-plovdiv.bg
Technical University of Sofia Plovdiv branch

COURSE STATUS IN THE CURRICULUM: Elective subject from the curriculum for training of students to obtain Bachelor's degree, specialty Industrial management, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: Upon completion of the course, students must acquire knowledge related to computer systems used in industrial management. They will be introduced in more detail to the hardware and software parts of computers. In addition, based on the acquired skills, students will: - Can use various software tools needed for the work of the manager of an industrial company; - Know the current trends in computer systems applicable in industrial production; - Use the acquired knowledge in their future professional activity.

DESCRIPTION OF THE COURSE: The main topics concern: Basic terms in the field of computer systems. Types of computer systems used in industrial management; Basic components of a computer system; Microprocessors - types, structure and action; Hierarchy of memory in the computer system. Organization of main memory; External (secondary) memories. Virtual memory; Peripheral devices. Input devices; Peripheral devices. Output devices; Software - system and application; Operating Systems. Functions and types. User interface; Industry 4.0 - basic information; Computer networks. Parallel and distributed data processing; Industrial Internet of Things (IIOT); Self-diagnostics of personal computers (POST - Power-on self-test).

PREREQUISITES: Information and Communication Technologies, Electrical Engineering and Electronics, Internet Technologies.

TEACHING METHODS: Lectures using a computer and multimedia projector together with laboratory exercises requiring preparation of reports.

METHOD OF ASSESSMENT: One one-hour written test in the middle of the semester (10%), two-hour written exam in the exam session of the semester (80%) and assessment of laboratory exercises (10%).

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY: 1. Borovska P. Computer Systems (in Bulgarian), Sofia, Ciela, 2012, ISBN 978-954-28-0409-3; 2. Petrov A., Stoyanova S. Computer Systems (in Bulgarian), Plovdiv, Koala Press, 2011, ISBN 978-9549455-60-1; 3. Bryant R., O'Hallaron D. Computer Systems: A Programmer's Perspective, 3rd Edition, Pearson, 2016, ISBN 978-013-409-266-9.

DESCRIPTION OF THE COURSE

Name of the course: **Expert systems**	Code: **BpIM19.2**	Semester: **6**
Type of teaching: Lectures (L) Laboratory work (LW)	Hours per semester: L – 30 hours LW – 20 hours	Number of credits: **4**

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: Eelective subject from the curriculum for training of students to obtain Bachelor's degree, specialty Industrial Management, 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 design and stages of development of expert systems; the characteristic features of the expert systems, the architectural solutions and the main components of the expert system; building the user interface; knowledge representation models in Expert Systems; the method of logical inference for drawing a conclusion from prerequisites; systems of inference and proof rules in Expert Systems; programs that perform logical inference.

DESCRIPTION OF THE COURSE: The main topics concern: Artificial intelligence systems - introduction. Role of artificial intelligence systems in modern society and industry. Core of an artificial intelligence system. Deduction, induction and heuristics. Knowledge and meta-knowledge. Accurate and inaccurate knowledge. Probabilistic knowledge. Models for knowledge representation - logical, frame, production, network. Predicates and predicate calculus. Principle of resolution. Resolution method. Semantic networks. Inference methods in semantic networks. Basic processing cycle in production systems. Inference of frame structures. Expert systems. Definition and main features. Expert system structure. Purpose of the main components. Classification of expert systems. Areas of application of expert systems. Design of expert systems. Project participants. Main stages of development. Explanations in expert systems. Logic programming – Prologue/Visual Prologue. Unification, Visual Studio.NET, C# etc.

PREREQUISITES: Information and communication technologies

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

METHOD OF ASSESSMENT: Two one-hour assessments at mid and end of semester (72%), laboratories (28%).

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. M. R. Tolun, S. Sahin, K. Oztoprak, ***Expert Systems,*** 2016 John Wiley & Sons, Inc. 2. Peter J.F. Lucas & Linda C. van der Gaag, ***Principles of Expert Systems***, Addison-Wesley, 1991. 3. Tan, Wahidin, Khalil, Rauterberg, The application of expert system: A review of research and applications, 2016, ARPN, Journal of Engineering and Applied Sciences. 4. И. Атанасова, Създаване на експертни систем***и***, Университетско издателство „Н. Рилски“,2018.

DESCRIPTION OF THE COURSE

Name of the course: **Information technologies and IoT**	Code: **BpIM19.3**	Semester: **6**
Type of teaching: Lectures (L) Laboratory work (LW)/Seminars (S) Course work (CW)	Hours per semester: L – 30 hours S – 0 hours LW – 20 hours	Number of credits: **4**

LECTURER(S):
assoc. prof. eng. Maria Marinova, PhD (FA), tel.: 659 727, e-mail: m_marinova@tu-plovdiv.bg
Technical University of Sofia

COURSE STATUS IN THE CURRICULUM: Elective subject from the curriculum / curricula for training of students to obtain Bachelor's degree, specialty Industrial Management, Professional orientation 5.13 General Engineering, Field 5 Technical Sciences.

AIMS AND OBJECTIVES OF THE COURSE: At the end of the course, the students are expected to be able to have a deep knowledge of Information systems and the Internet of Things. Students are studying the design and development of various based information systems for data collection and processing in modern automated control systems. The main phases of the development on information systems, work with SQL, different technologies for data collection from automated systems are studied.

DESCRIPTION OF THE COURSE: The main topics concern: The life cycle and information systems development cycle. Preliminary study phase - starting, defining the problem and its scope, feasibility study, final document. System analysis phase. Data collection techniques. Data analysis and modeling. Choice of hardware and software. Preparation and presentation of the final document. Gantt graphs and network charts. Types of databases. Web database architecture. Database access technologies. SQL constructs for data manipulation. Data sources and filling in the databases - protocols for sending data (XML, JSON, EXI, JSON, etc). Encryption of data in DB, AWS in IoT, etc.

PREREQUISITES: Information and Communication Technologies, Internet Technologies.

TEACHING METHODS: Lectures, using slides, case studies, laboratory and course work, work in teams, protocols and course work description preparation and defence.

METHOD OF ASSESSMENT: One assessment at the end of semester (80%), laboratories (20%).

INSTRUCTION LANGUAGE: Bulgarian

BIBLIOGRAPHY:
1. Silberschatz A., Korth H., Database System Concepts, 2019, 2. Pearlson K., Saunders C., et al, Managing and Using Information Systems: A Strategic Approach, 2019, 3. Stair R., Reynolds G., Principles of Information Systems, 2017, 4. Friesen J., Java XML and JSON: Document Processing for Java SE, 2019.

DESCRIPTION OF THE COURSE

Name of the course: **Sport**	Code: **FaSPR06**	Semester: 6
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):
Assoc. Prof. Valentin Vladimirov, PhD (FEA), tel.: 032 659 646, e-mail: valdesv@tu-plovdiv.bg
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

COURSE STATUS IN THE CURRICULUM: Facultative subject from the curriculum 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.

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

Course Title: **English for professional communication**	Code: **FaBpIM03**	Semester: **6**
Type of Teaching: **Seminars (S)**	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: Optional elective course in the curriculum of the Bachelor Degree Programme in Industrial Management**,** Professional qualification 5.13 General Engineering, Professional field 5 Technical Sciences.

COURSE OBJECTIVES: The course is targeted at developing students' foreign language knowledge and practical skills for the purposes of their professional communication. Upon the successful completion of the course students will have acquired language competences for in-company and intercompany communication, e.g. telephoning, e-mailing for business purposes, negotiating, delivering presentations, conflict resolution, teamwork, awareness of cultural differences when working with both partners and customers.

COURSE DESCRIPTION: The course is taught at language levels determined through placement tests, based on the compulsory foreign language course taken in Year 1 at TU – Sofia. No absolute beginner groups are formed. The course focuses on the further development of the four language skills in the context of in-company and intercompany communication.

PREREQUISITES: Completed compulsory foreign language course **LNG01** and **LNG02** in Year 1.

TEACHING METHODS: Lectures and lab exercises targeted at further development of foreign language skills for professional communication through individual presentations and teamwork 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 course.

LANGUAGE OF INSTRUCTION: English

LITERATURE RECOMMENDED:

1. Intelligent Business English, Pearson Longman
2. Developing Business Contacts, Oxford University Press
3. Negotiating, (Longman Business English Skills S.), Longman
4. Telephoning (Longman Business English Skills S.), Longman
5. Presenting facts and figures, (Longman Business English Skills S.), Longman