
	<b>University of Belgrade</b> Technical Faculty in Bor Vojske Jugoslavije 12, 19210 Bor		
	<b>ACCREDITATION OF THE STUDY PROGRAM</b>		
	UNDERGRADUATE ACADEMIC STUDIES	ENGINEERING MANAGEMENT	

# **BOOK OF COURSES**

## **STUDY PROGRAM: ENGINEERING MANAGEMENT**

### **UNDERGRADUATE ACADEMIC STUDIES (1<sup>ST</sup> LEVEL OF THE ACADEMIC STUDIES)**

Bor, 2023.

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## 01. Informatics 1

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course: INFORMATICS 1</b>				
<b>Lecturer/s: Milena M. Gajić</b>				
<b>Status of the course:</b> Compulsory				
<b>ECTS: 4</b>				
<b>Prerequisite:</b> The basic informatics knowledge from the high school				
<b>Course goals:</b> Acquiring basic computer knowledge in information technology				
<b>Learning outcomes:</b> Introduce with the operation of computer systems and their application for data processing basic level				
<p><b>Course description:</b></p> <p>Lectures:</p> <p><i>Numeral systems and number translation:</i> The essence of numeral system, the translation of numbers from one numeral system to another, the conversion from binary to octal and hexadecimal numeral systems, binary arithmetic, basic arithmetic operations in the system with an arbitrary basis.</p> <p><i>Representation of data in computer:</i> BCD data, one's complement, two's complement, complement arithmetic, ASCII codes.</p> <p><i>Boolean and switching algebra:</i> definition of Boolean algebra and basic examples, idempotence law, the law of involution operation of negation, De Morgan's theorem, the law of absorption, the simplification of logic expressions, minimization of logical expressions, Karnaugh maps, switching algebra, analysis and synthesis logic circuits.</p> <p><i>Switching and logic gates:</i> Switching gates, AND, OR and NOT logic gates, examples of logic gates, analysis and synthesis of switching gates.</p> <p>Practice:</p> <p>During the exercises, students do tasks in the field of numerous systems and switching and logic circuits.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <ol style="list-style-type: none"> <li>Đorđević, J., Radivojević, Z., Punt, M., i Stanisavljević, Ž. Osnovi računarske tehnike. Akademska misao, Beograd, 2017.</li> <li>Brodić, D. i Jevtić, M. Zbirka zadataka iz Informatike 1. Tehnički fakultet u Boru, Bor, 2015.</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>Mladenović, I. Informatika 1. Tehnički fakultet u Boru, Bor. 2008.</li> <li>Manojlović, V. Osnovi računarske tehnike, Prvi deo: Podaci i operacije, Akademska misao, Beograd, 2007.</li> <li>Manojlović, V. Osnovi računarske tehnike, Drugi deo: Digitalna logika, Fakultet tehničkih nauka, Kosovska Mitrovica, 2013.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Teaching contains lectures, seminars and exercises, which include work in groups.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	40	
Exercise attendance	5	Oral part of the final exam		
Coloquium exam/s	40	.....		
Term paper	10			

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## 02. Mathematics 1

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course: Mathematics 1</b>				
<b>Lecturer/s:</b> Ivana M. Stanišev				
<b>Status of the course:</b> Compulsory for Mining Engineering, Metallurgical Engineering and Technological Engineering Elective for Engineering Management				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basic high school knowledge in mathematics.				
<b>Course goals:</b> Application of acquired knowledge in the field of content items.				
<b>Learning outcomes:</b> Through the course students should be able to use matrix calculus (determinants) for solving systems of linear equations, solve the problems of minimum and maximum, learn the basic notions of functions of one or two variables and apply that knowledge in the upcoming mathematical courses as well as courses for which we need mathematical tools.				
<p><b>Course description:</b>            Lectures: Introduction: basic notions (sets, relations, algebraic structures, sets of numbers). Matrices (definitions, equality of matrices, addition and multiplication of matrices). Determinants; Matrix inverse. Rank of a matrix. Systems of linear equations (solving the system using Gaussian method of elimination, Cramer's rule and Kronecker-Capelli theorem). Real functions of a real variable (basic notions). Limits of functions; Continuity of functions. Derivative of a function; Differential of a function. Theorems about differentiation; L'Hopital's rule; Taylor's formula. Intervals of monotonicity of a function and local extremums of a function. Intervals of convexity and inflection points. Drawing the graph of a function. Functions of two variables; partial derivatives. Local extremums of functions of two variables.</p> <p>Practice: Calculation exercises</p>				
<p><b>Literature:</b>            Recommended:</p> <ol style="list-style-type: none"> <li>1. M. Janić, Matematika (I i II), TF Bor, 2003.</li> <li>2. M. Janić, Zbirka rešenih zadataka iz Matematike (I i II), TF Bor, 1996</li> <li>3. M. Ušćumlić, P. Miličić, Zbirka zadataka iz više matematike I, Nauka Beograd, 1996.</li> <li>4. S. Vukadinović, D. Sučević, Z. Šami, Matematika II sa zbirkom zadataka, Saobraćajni fakultet, Beograd, 2003.</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>1. B.P. Demidovič, Sbornik zadač i upražnenii po matematičeskomu analizu, Nauka, Moskva, 1997.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type, group, and individual work.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>20</b>	Written part of the final exam	<b>40</b>	
Exercise attendance	/	Oral part of the final exam	/	
Coloquium exam/s	<b>40</b>	.....		
Term paper	/			

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### 03. Mathematics 1 M

<b>Study program:</b> Engineering Management				
<b>Course:</b> Mathematics 1 M				
<b>Lecturer/s:</b> Ivana M. Stanišev				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basic high school knowledge in mathematics.				
<b>Course goals:</b> Introducing students to the basics of linear algebra and mathematical analysis				
<b>Learning outcomes:</b> After the course students should be able to use matrix calculus, calculate the inverse and determinant of a matrix, solve a system of linear equations, as well as analyze and draw the graph of a function.				
<p><b>Course description:</b>            Lectures: Introduction, basic notions (sets, relations, functions, algebraic structures). Polynomials (operations, factorization, zeros). Matrices (basic operations). Determinants. Matrix inverse and matrix equations. Rank of a matrix. Systems of linear equations (Gaussian method of elimination, Cramer's rule and Kronecker-Capelli theorem), homogeneous systems. Real functions of a real variable (basic notions). Limits of functions; Continuity of functions. Differential calculus (derivative and differential of a function, basic theorems, L'Hopital's rule, Taylor's formula). Monotonicity of a function and local extremum. Intervals of convexity and inflection points. Analysis of a function. Drawing the graph of a function. Functions of two variables (basic notions, partial derivatives, local extremum).</p> <p>Practice: Calculation exercises</p>				
<p><b>Literature:</b>            Recommended:            1. M. Janić, Matematika (I i II), TF Bor, 2003.            2. M. Janić, Zbirka rešenih zadataka iz Matematike (I i II), TF Bor, 1996            3. M. Ušćumlić, P. Miličić, Zbirka zadataka iz više matematike I, Nauka Beograd, 1996.</p> <p>Ancillary:            1. B.P. Demidovič, Sbornik zadač i upražnenii po matematičeskomu analizu, Nauka, Moskva, 1997.</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type, group, and individual work.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>20</b>	Written part of the final exam	<b>40</b>	
Exercise attendance	/	Oral part of the final exam	/	
Coloquium exam/s	<b>40</b>	.....		
Term paper	/			

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## 04. Basics of Business Economics

<b>Study program:</b> Engineering Management				
<b>Course:</b> Basics of Business Economics				
<b>Lecturer/s:</b> Aleksandra N. Fedajev				
<b>Status of the course:</b> Compulsory				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basic knowledge of economic disciplines gained in high school				
<b>Course goals:</b> Acquiring the knowledge on the basic concepts of business entities' business economy				
<b>Learning outcomes:</b> Acquiring the necessary knowledge for learning the economic subjects during the higher years of study.				
<p><b>Course description:</b></p> <p>Lectures: The concept of business economics. The goal and subject of studying business economics. Scientific methods for studying business economics. Economic subjects of the business economy in the Republic of Serbia. Business entities (partnership, limited partnership, limited liability company, joint stock company, public enterprises, entrepreneurs). Wider forms of business entities' associations. Types (classification) of business entities. Forms of business entity closure. Investments in reproduction. Business assets (concept and classification). Fixed assets (concept and classification, values of fixed assets, technical structure of fixed assets, technical equipment of labour). Depletion of fixed assets (calculation of depreciation). Fixed assets' capacity. Current assets (concept and classification). Inventories. Liquidity. Investments. Sources of business assets. Operating costs (concept and classification). Costs by nature of expenses. Costs by behaviour in reproduction. Calculation of costs (cost price calculations). Business result (concept, income, expenses, profit-loss). Economic principles of business (concept and definition). Productivity principle. Economics principle. Profitability principle.</p> <p>Practice: Exercising the theoretical and practical examples.</p>				
<p><b>Literature:</b></p> <p>Recommended: N.Gregory Mankiw, Principles of Economics, Harvard University, 2006.</p> <p>Ancillary: David Begg, Damian Ward, Economics for Business, Data Status, 2004.</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: -</b>	<b>Other forms of teaching: -</b>
<b>Teaching methods</b>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>5</b>	Written part of the final exam	<b>20</b>	
Exercise attendance	<b>5</b>	Oral part of the final exam	<b>50</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper				

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## 05. Basics of Sociology

<b>Study program:</b> Engineering Management				
<b>Course:</b> Fundamentals of Sociology				
<b>Lecturer/s:</b> Milovan Vuković				
<b>Status of the course:</b> Compulsory.				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Basic high school knowledge about society				
<b>Course goals:</b> Introducing students to the fundamental sociological concepts and theories, with an emphasis on the phenomena tied to management theory and practice.				
<b>Learning outcomes:</b> Acquiring the necessary knowledge for learning the other social courses (Culture of Communication, Public Relations, Business Ethics, Organizational Behavior etc) within the study.				
<b>Course description:</b>				
Lectures: Introduction to Sociology: origins, definitions, concepts, key sociologists, sociology and other sciences. Science and Scientific Methods: characteristics of scientific knowledge, method, phases of scientific research. Sociological Method: general method and methods of gathering data, survey method, observation, experiment, content analysis, biography, statistical method etc. Sociological theories; classical and contemporary theories, structural, functional and conflictual theoretical perspectives. The Concept of Society: evolution of society, social relations and processes, culture, social groups. Social Structure: family, social stratification, social classes, elitist theories, state and political concepts, old and new social movements. Values Systems: religion, moral, science, philosophy, art, ideology. Work: factors of production, contemporary meanings of work, types of work, organization of work. Contemporary Society, Technologies and Work: sociological views on work, humanisation of work. Society and the Environment: human ecology, social ecology, ecological crisis, sustainable development, ecological awareness .				
Practice: Recognition the theoretical concepts and analysis of practical social issues and problems.				
<b>Literature:</b>				
Recommended:				
1. Vuković, M., Todorović, D. (2020). <i>Fundamentals of Sociology</i> . Niš: Faculty of Science [In Serbian].				
2. Tarner, Dž. (2009) <i>Sociology</i> . Novi Sad: Mediterran Publishing [In Serbian].				
Ancillary:				
1. Hammond, R. J. (2010). <i>Introduction to Sociology</i> .				
2. Barkan, S. E. (2012). <i>Sociology</i> . Creative Commons.				
3. OpenStax College (2013). <i>An Introduction to Sociology</i> .				
<b>Number of classes per week: 4</b>	<b>Lectures: 3</b>	<b>Practical classes: 1</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b>				
Traditional lectures and discussion about social issues related to management theory and practice				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>50</b>	
Exercise attendance	<b>10</b>	Oral part of the final exam		
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 06. Basics of Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> BASICS OF MANAGEMENT				
<b>Lecturer/s:</b> Marija V. Panić				
<b>Status of the course:</b> Compulsory				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Basic knowledge of sociology and economics from high school.				
<b>Course goals:</b> Acquaintance with basic terms and definitions in the field of management science.				
<b>Learning outcomes:</b> The acquired knowledge should serve as a foundation for studying other subjects in the management field.				
<b>Course description:</b> <i>Lectures:</i> Concept and definition of management. Theories of management: classic, behaviorist, and theories of the modern approach. Organizational structure: functional, divisional, matrix, pyramidal. Management processes: planning, organizing, staffing, and controlling. The process and tools of decision-making. Functional areas of management: production management, R&D management, marketing management, financial management, H&R management, project management, technology management, quality management, and strategic management. Ethics. Leadership. Further development of management.				
<b>Literature:</b> Recommended: <ol style="list-style-type: none"> <li>1. Живковић Ж., Јелић М., Поповић Н., Основе менаџмента, друго издање, Бакар, Бор, 2005.</li> <li>2. Robbins S. P., Coulter M., Management, Data Status, Belgrade, 2005.</li> </ol> Ancillary: <ol style="list-style-type: none"> <li>3. Certo S., Modern Management (International Edition), Data Status, Beograd, 2003.</li> <li>4. Cole G., Management Theory and Practice, Middlesax University, 2004.</li> <li>5. Lussier R. N., Management Fundamentals (ISE), Concepts, Applications, Skill Development, Springfield College, 2006.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 0</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b> Classic lectures, case studies, and educational workshops.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam		
Exercise attendance		Oral part of the final exam	<b>60</b>	
Coloquium exam/s	<b>30</b>	.....		
Term paper				

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## 07. English Language 1a

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course: English Language 1a</b>				
<b>Lecturer/s: Sandra Vasković</b>				
<b>Status of the course: Compulsory</b>				
<b>ECTS: 2</b>				
<b>Prerequisite: Basic language user</b>				
<b>Course goals: Developing all language skills; the adoption of grammatical structures, vocabulary, and an emphasis on functional English corresponding to the lower intermediate level (CEFR-A2)</b>				
<b>Learning outcomes: Students can express themselves in writing and orally using simpler language structures and vocabulary needed for everyday communication. Students can understand less complex texts and are able to find the required information in the texts.</b>				
<p><b>Course description:</b>  Lectures:  <b>Topics:</b> Everyday life, Travelling, Parents and teenagers, Fashion, Psychology, etc.  <b>Grammar:</b> Verb tenses (present simple and continuous, past simple and continuous, be going to, present perfect – yet, just, already, will/won't – predictions, decisions, offers, promises), defining relative clauses, indefinite pronouns, quantifiers, comparison of adjectives and adverbs.  <b>Language functions:</b> Practical English (hotel problems, restaurant problems, in a store...)</p> <p>Practice:  Determining and practicing the material covered in lectures using all language skills</p>				
<p><b>Literature:</b>  Recommended:</p> <ol style="list-style-type: none"> <li>Christina Latham-Koenig, Clive Oxeden, Paul Seligson, English File third edition, Student's Book, OUP, Oxford, 2012</li> <li>Tom Hutchinson, Lifelines, Pre-Intermediate, Student's Book, OUP, Oxford, 2009</li> <li>Selection of texts from different sources</li> </ol> <p>Supplementary::</p> <ol style="list-style-type: none"> <li>Slavica Stevanović, English Language 1- Grammar Exercises, Workbook with Key, Technical Faculty in Bor, 2018</li> <li>Raymond Murphy &amp; William R. Smalzer, Basic Grammar in Use, CUP, Cambridge, 2007</li> <li>Selection of exercises from various sources</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 1</b>	<b>Practical classes: 1</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Eclectic				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>5</b>	Written part of the final exam	<b>30</b>	
Exercise attendance	<b>5</b>	Oral part of the final exam	<b>40</b>	
Midterm exam	<b>20</b>			
Term paper				

\*Students can take the oral part of the exam if they have acquired at least 25 points (50%) on the midterm exam and written part of the exam.

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## 08. English Language 1b

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course:</b> English Language 1b				
<b>Lecturer/s:</b> Sandra Vasković				
<b>Status of the course:</b> Compulsory				
<b>ECTS:</b> 2				
<b>Prerequisite:</b> Basic language user				
<b>Course goals:</b> Developing all language skills; the adoption of grammatical structures, vocabulary, and an emphasis on functional English corresponding to the lower intermediate level (CEFR-A2)				
<b>Learning outcomes:</b> Students can express themselves in writing and orally using simpler language structures and vocabulary needed for everyday communication. Students can understand less complex texts and are able to find the required information in the texts.				
<b>Course description:</b> Lectures: <b>Topics:</b> Films, Language, Books, Science, Music, etc. <b>Grammar:</b> uses of infinitive with to, uses of gerund, modal verbs (should, have to, must, might), conditional sentences 1 and 2, passive, present perfect – for and since, present perfect and past simple, past perfect.... <b>Language functions:</b> Practical English (at the pharmacy, getting around, travelling...)				
Practice: Determining and practicing the material covered in lectures using all language skills				
<b>Literature:</b> Recommended: Christina Latham-Koenig, Clive Oxeden, Paul Seligson, English File third edition, Student's Book, OUP, Oxford, 2012 Tom Hutchinson, Lifelines, Pre-Intermediate, Student's Book, OUP, Oxford, 2009 Selection of texts from different sources				
Supplementary: 1. Slavica Stevanović, English Language 1- Grammar Exercises, Workbook with Key, Technical Faculty in Bor, 2018 2. Raymond Murphy & William R. Smalzer, Basic Grammar in Use, CUP, Cambridge, 2007 3. Selection of exercises from various sources				
<b>Number of classes per week</b>	<b>Lectures: 1</b>	<b>Practical classes: 1</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b>				
<b>Eclectic</b>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>5</b>	Written part of the final exam	<b>30</b>	
Exercise attendance	<b>5</b>	Oral part of the final exam	<b>40</b>	
Midterm exam	<b>20</b>			
Term paper				

\*Students can take the oral part of the exam if they have acquired at least 25 points (50%) on the midterm exam and written part of the exam.

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## 09. Informatics 2

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course: Informatics 2</b>				
<b>Lecturer/s:</b> Dragisa M. Stanujkic				
<b>Status of the course:</b> Compulsory				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> The basic informatics knowledge from the high school				
<b>Course goals:</b> An introduction to the C programming language				
<b>Learning outcomes:</b> After completing the course, students will be familiar with advanced methods and techniques of using computers to effectively apply them in a business environment. In addition, students will improve their skills related to the application of Microsoft Access and the C programming language.				
<p><b>Course description:</b></p> <p>Lectures:  <i>Software:</i> Software, concept and role in computer system. Types of software.  <i>Databases:</i> Introduction to relational databases, fields, rows, tables, primary keys, foreign keys.  <i>Microsoft Access:</i> Tables, relations, forms, reports.  <i>Introduction to programming and the C programming language:</i> Basic elements of the C programming language: Keywords, identifiers, data types, operators, input and output commands. Basic program structures: if ... else, for, while, break and continue, switch ... case. Complex (nested) program structures. Functions: "built-in" functions, user-defined functions. Arrays.</p> <p>Practice:  <i>Software:</i> Software, concept and role in computer system. Types of software.  <i>Databases:</i> Introduction to relational databases, fields, rows, tables, primary keys, foreign keys.  <i>Microsoft Access:</i> Tables, relations, forms, reports.  <i>Introduction to programming and the C programming language:</i> Basic elements of the C programming language: Keywords, identifiers, data types, operators, input and output commands. Basic program structures: if ... else, for, while, break and continue, switch ... case. Complex (nested) program structures. Functions: "built-in" functions, user-defined functions. Arrays.</p>				
<p><b>Literature:</b></p> <p>Recommended:            Stankić, R. Poslovna informatika. Ekonomski fakultet, Beograd. 2012.            Kraus L. Programski jezik C sa rešenim zadacima. 9. izdanje, Akademska misao, 2014.</p> <p>Ancillary:            1. Sebesta R.W. Concepts of Programming Languages. 10th ed., Addison-Wesley Publishing Company, 2012.</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: 0</b>
<p><b>Teaching methods</b></p> <p>Teaching contains lectures, seminars and exercises, which include work in groups.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	40	
Exercise attendance	5	Oral part of the final exam		
Coloquium exam/s	40	.....		
Term paper	10			

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## 10. Basics of Market Economics

<b>Study program:</b> Engineering Management				
<b>Course:</b> Basics of Market Economics				
<b>Lecturer/s:</b> Aleksandra N. Fedajev				
<b>Status of the course:</b> Compulsory				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basic high school knowledge in economics and other social sciences.				
<b>Course goals:</b> Acquiring the knowledge in the field of macroeconomics and business principles in market conditions.				
<b>Learning outcomes:</b> Preparation of students for the application of market principles in business operations.				
<p><b>Course description:</b>  Lectures: The concept of market economy. The development of economic thought about the market economy. Basic market categories (commodity production, production forces, production relations, labor, goods, organic composition of capital, money, law of value, monetary indicators, profit, interest, credit, shares, land rents, national product, national income, commodity exchange, consumption, standard of living, needs). The market as a category of commodity economy (commodity economy, market analytical terms, market typology and segmentation). Market categories (demand, supply, prices). Elasticity of supply and demand. Main factors of economic development (natural wealth, population, means of production, factors of production). Socio-economic organization of economic activities - economic sectors (industry, agriculture, construction, transport, trade, tourism). Commodity trade and market, capital market; market activities; market and product quality; quality in the company's market policy. Principles of economic policy; economic policy; tax policy; financing of public expenditure; effective demand; unemployment; boosting production and employment; general government and investment spending; stabilization economic policy. Inflation and stabilization measures (inflation, forms of inflation, causes of inflation, consequences of inflation, inflation, deflation, credit and fiscal functions, anti-inflationary measures). Market development in our country. Marketing orientation of the company (marketing, development and functions of marketing). Profitability in business operations of economic entities.</p> <p>Practice: Exercising of theoretical and practical examples.</p>				
<p><b>Literature:</b>  Recommended:  Patrick Minford and David Peel, Advanced Macroeconomics, Data Status, 2002.</p> <p>Ancillary:  S. G. Marks, W. F. Samuelson, Managerial Economics: 5th (Fifth) Edition, Wiley, John &amp; Sons, Incorporated, 2006</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: -</b>	<b>Other forms of teaching: -</b>
<b>Teaching methods</b>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam		
Exercise attendance	5	Oral part of the final exam	70	
Coloquium exam/s	20	.....		
Term paper				

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## 11. Basics of Organization

<b>Study program:</b> Engineering Management				
<b>Course:</b> Basics of organization				
<b>Lecturer/s:</b> Prof. dr Danijela Voza				
<b>Status of the course:</b> Compulsory for the 1st grade students of Engineering Management				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Basic knowledge in economics, social sciences, and management				
<b>Course goals:</b> The purpose of this course is to acquaint students with various forms of structure and operation of profit-making and non-profit organizations. The main task is a detailed presentation of organizational internal and external environment and specific factors that influence its functioning.				
<b>Learning outcomes:</b> This course examines the nature and forms of organizations, as well as their role in the functioning individuals and society as a whole. After listening to lectures and completing exercises, students will be able to: 1) describe the most important factors that influence the development of the organization in the modern environment; 2) numerous applications theoretical frameworks when considering the business environment and defining the business strategy in practice; 3) describe different and key features of organizational forms, and 4) continuing the study of all other scientific disciplines related to management and business.				
<p><b>Course description:</b>  <i>Theoretical classes:</i></p> <p>1. Organization - definition; role in contemporary society; relationship between organization and management;  2. Organization as a scientific discipline; 3. Integral organizational model; 4. Levels of management organization;  5. Effectiveness and performance of the organization; 6. Contemporary challenges; 7. Theories of organization - review; classical school of organization; 8. Theories of organization - neoclassical theory; interpersonal theoryrelations; system approach; situational approach; 9. Organizational design - definition; concepts; 10. Organizational structure - elements; factors; 11. Basic models of organizational structure; 12. Models departmentalization; 13. Management function; 14. Management function; 15. Executive function; 16. Business politics; 17. Organizational behavior and organizational changes.</p> <p><i>Practical classes:</i>  A case study with examples of the organizational structure of a real enterprise or company - preparation of a seminar paper and its' presentation.</p>				
<p><b>Literature:</b>  Recommended:</p> <ol style="list-style-type: none"> <li>Richard L. Daft. Organisation theory and design. 10th edition. 2010. USA: South-Western, Cengage Learning</li> <li>David Campbell and Tom Craig. Organisations and Business Environment. 2nd Edition. 2005</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>Danijela Voza 2017, Osnovi organizacije, skripta - e-version.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: /</b>
<p><b>Teaching methods</b>  Ex-cathedra lectures and working on the case studies through by workshops.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>60</b>	
Exercise attendance	<b>10</b>	Oral part of the final exam		
Coloquium exam/s	<b>10</b>	.....		
Term paper	<b>10</b>			

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## 12. Business Communication Culture

<b>Study program:</b> Engineering Management				
<b>Course:</b> Culture of Communication				
<b>Lecturer/s:</b> Milovan Vuković				
<b>Status of the course:</b> Elective for Engineering Management				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basic knowledge about society.				
<b>Course goals:</b> The purpose of this course to introduce students with importance of communication in all the human activities, especially in the business environment.				
<b>Learning outcomes:</b> Acquiring so-called soft skills such as ability to communicate in various business contexts (interpersonal or mass communication, verbal or nonverbal communication, cultural diversity etc.				
<p><b>Course description:</b></p> <p>Lectures:</p> <p>Introduction to Communication: History of communication. Definitions of communication. Notions of information and message. Approaches to explain and research communication. Ancient heritage. Functions of communication.</p> <p>Business Communication (BC): Forms, aims and effects of BC. Management of BC. Communicative skills.</p> <p>Models of Communication: Mathematical models of communication. Biological-mechanical models. Social models.</p> <p>Forms of Communication: Intrapersonal, interpersonal, group, mass communication. Virtual communication.</p> <p>Personal Traits and Communication. Assertivity. Motivation. Perceptions.</p> <p>Organization and Communication: Communication network in small and large groups. Contents and directions of communication in organizations. Managers and communications. Functions of communication in organization. Corporative identity, image and reputation. Marketing communication.</p> <p>Intercultural Communication: Differences among cultures in terms of communication.</p> <p>Verbal Business Communication. Various forms of oral and written BC. Steps during the presentation preparation.</p> <p>Non-Verbal Business Communication. Various symbols used in non-verbal communication. Functions of non-verbal communication.</p> <p>Practice:</p> <p>Intensive participation students and practical demonstration of various communicative skills.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <ol style="list-style-type: none"> <li>1. Vuković, M., Vuković, A., Urošević, S., Mladenović-Ranisavljević, I. (2022). <i>Business Communication: Theoretical and Practical Aspects</i>. Bor: Technical Faculty [In Serbian].</li> <li>2. Rouse, J. M., Rouse, S. (2005). <i>Poslovna komunikacija (kulturološki i strateški pristup)</i>. Zagreb: Masmedija [In Serbian].</li> </ol> <p>Ancillary:</p> <p>.1. Rouse, J. M. &amp; Rouse, S. (2002). <i>Business Communication: a cultural and strategic approach</i>. London: Thomson Learning.</p>				
<b>Number of classes per week:</b> 4	<b>Lectures:</b> 2	<b>Practical classes:</b> 2	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b>				
Traditional lecturing methods and participation of students during practical work				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>		Points
Lecture attendance	10	Written part of the final exam		50
Exercise attendance	10	Oral part of the final exam		
Coloquium exam/s	20	.....		
Term paper	10			

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### 13. Public Relations

<b>Study program:</b> Engineering Management				
<b>Course:</b> Public Relations				
<b>Lecturer/s:</b> Milovan Vuković				
<b>Status of the course:</b> Elective for Engineering Management				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basic knowledge about society				
<b>Course goals:</b> Introducing students of management with theory and practice of public relations.				
<b>Learning outcomes:</b> Acquiring of skills needed to recognize and analyze social problems and offer appropriate solutions				
<p><b>Course description:</b></p> <p>Lectures:            Introduction to Public Relations: Key tenets of public relations (PR). Notion of public and public segmentation. Theories of PR (Marston, 1863; Grunig &amp; Hunt, 1984). PR development (as concept, practice and specialized field of science). PR and related fields (advertising, propaganda and marketing). Specialized PR areas. Stages of PR development. Role, aims and tasks of PR.</p> <p>Theories and activities of PR: Theories about communication (types of communication). The notion of public. Legal and ethical issues in PR. Corporate social responsibility. General areas of PR practice: Internal communication. Cooperative communication (corporate identity, image and reputation). Publicity. Lobbying. Sponsorship. Intercultural PR. Crisis management.</p> <p>Process of PR management (description of four phases of the process): Analysis of situation. Planning and programming (general and specific goals, strategy, tactics, budget). Realization and communication. Evaluation.</p> <p>Media Relations: The importance of media. Media as a specific public. Relationship between PR and journalism. Traditional and new media. Social media. Infrastructure for media relations. Tactics (press release, media conferences etc) and types of media relations (proactive, reactive and relations during crisis situation).</p> <p>Practice: During the practical work classes students will have an opportunity to make their own public performance and try to apply rules to relations with different publics.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <ol style="list-style-type: none"> <li>1. Vuković, A., Vuković, M. (2009). <i>Public Relations</i>. Bor: Tehnički fakultet [In Serbian].</li> <li>2. Vuković, M., Vuković, A., Urošević, S., Mladenović-Ranisavljević, I. (2022). <i>Business Communication: Theoretical and practical aspects</i>. Bor: Technical Faculty [In Serbian].</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>1. Malešević, D. (2020). <i>Professional Skills</i>. Novi Sad: PROVENS [In Serbian].</li> <li>2. Vučinić, S. (2015). <i>Strategies of communication in crisis situations</i>. Belgrade: Čigoja [In Serbian].</li> <li>3. Vračar, D. (2010). <i>Strategies of market communications</i>. Beograd: Ekonomski fakultet [In Serbian].</li> </ol>				
<b>Number of classes per week:</b> 4	<b>Lectures:</b> 2	<b>Practical classes:</b> 2	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Traditional methods and participation of students.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	10	Written part of the final exam	50	
Exercise attendance	10	Oral part of the final exam		
Coloquium exam/s	20	.....		
Term paper	10			

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## 14. Statistics

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course:</b> STATISTICS				
<b>Lecturer/s:</b> Ivana Z. Đolović				
<b>Status of the course:</b> Compulsory for Metallurgical Engineering, Technological Engineering and Engineering Management ; Elective for Mining Engineering				
<b>ECTS:</b> 9				
<b>Prerequisite:</b> Fundamental knowledge in mathematics				
<b>Course goals:</b> Students should be able to use appropriate mathematical and statistical concepts and tools in recognizing and solving problems				
<b>Learning outcomes:</b> Students should be able to apply theoretical knowledge from statistics in recognizing and solving tasks in further studying process as well as real problems in engineering, sciences, business and technology fields				
<p><b>Course description:</b></p> <p>Lectures:            Introduction (statistical data, frequency distribution, absolute and relative frequencies, cumulative frequency); Mean values (arithmetic mean, geometric mean, harmonic mean, median,); measures of dispersion (range, quartiles and interquartile range, mean absolute deviation, variance, standard deviation); Coefficient of variation and meaning; Coefficient of skewness; Pearson's moment coefficient of kurtosis (excess kurtosis); Discrete and continuous random variables; The Binomial probability distribution; The Poisson probability distribution; The normal distribution; - distribution; Student's t- distribution; Population and sample (types of sample, sample parameters); Point estimates of the population parameters; Confidence interval for population mean; Confidence interval for population proportion; Confidence interval for the difference of two population means; Confidence interval for the difference of two population proportions; Hypothesis tests; Hypothesis tests about the population mean; Hypothesis tests for the variance; Hypothesis tests of the equality of two means; Hypothesis tests about the population proportion; non-parametric tests; (-test of independence; - test of distribution); The correlation coefficient; Regression analysis; Coefficient of determination; standard error of the regression; Linear regression; Quadratic regression; Exponential regression; Logarithmic regression</p> <p>Practice:            Calculation exercises and application in real problems (with and without some statistical packages - advantages and disadvantages)</p>				
<p><b>Literature:</b></p> <p>Recommended:            1. I.Đolović, Statistika, Univerzitet u Beogradu, Tehnički fakultet u Boru, Bor, 2016.            2. I.Đolović, Zbirka zadataka iz statistike, Univerzitet u Beogradu, Tehnički fakultet u Boru, Bor, 2011.</p> <p>Ancillary:            1. Mann S.P., Uvod u statistiku (srpsko izdanje), Centar za izdavačku delatnost Ekonomskog fakulteta, Beograd, 2009.            2. Mann S.P., Introductory Statistics ( many editions in English)</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Frontal teaching for theoretical knowledge and group, individual and combined learning in practical parts of lessons (students engagement through active learning – applications and discussions)				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>40</b>	Written part of the final exam	<b>40</b>	
Exercise attendance	/	Oral part of the final exam	/	
Coloquium exam/s	<b>20</b>	.....		
Term paper	/			

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## 15. Entrepreneurship

<b>Study program:</b> Engineering Management				
<b>Course:</b> Entrepreneurship				
<b>Lecturer/s:</b> Ivan Jovanović				
<b>Status of the course:</b> Compulsory for all students.				
<b>ECTS:</b> 9				
<b>Prerequisite:</b> The acquired knowledge from Marketing and fundamentals of Business Economics.				
<b>Course goals:</b> Introduction to the process of entrepreneurial ideas' development. Teaching students the basic rules, methods, tools, and techniques for creating a business plan, as a binding document of modern business, and how to start and run their own business.				
<b>Learning outcomes:</b> Preparation of students for the application of entrepreneurial principles in business operations. Also, the acquired knowledge should serve as a foundation for studying other subjects in the management field.				
<b>Course description:</b> Lectures: The course studies the issue of entrepreneurship, entrepreneurs, creativity and innovation, team work, financing entrepreneurial ventures, management of small enterprises, developing conceptual and operational business plan. At the end of the course students will have required knowledge necessary for planning, launching and running independent business enterprise. Also, they will learn how to prepare a detailed and comprehensive business plan for the establishment of new companies and / or development of existing companies. During the course they will examine the structure and all the complexity of business plans, their diversity and practical problems in their development Practice: Exercises with practical examples from the material, that ends with preparing a seminar paper and its publication presentation.				
<b>Literature:</b> Recommended: 1.Ivan Jovanović, Preduzetništvo u savremenim uslovima poslovanja, Tehnički fakultet Bor, 2014. 2.Ivan Jovanović, Milica Veličković, Praktikum iz preduzetništva - za samostalnu izradu biznis plana, Tehnički fakultet Bor, 2019. 3.Zvonko Sajfert, Ppeduzetništvo, Tehnički fakultet, Zrenjanin, 2004.  Ancillary: 1.N. J Foss, Entrepreneurship and the Firm, Data Status, Beograd, 2002. 2.N.R.Sturgeon, Small business big profit, Pearson Practic Hall, London, 2006.				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type, group, and individual work through the preparation of an independent seminar paper.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam		
Exercise attendance	5	Oral part of the final exam	50	
Coloquium exam/s	20	.....		
Term paper	20			

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## 16. Basics of Marketing

<b>Study program:</b> Engineering Management				
<b>Course:</b> Basics of Marketing				
<b>Lecturer/s:</b> Dejan T Riznić				
<b>Status of the course:</b> Compulsory				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Knowledge of business economics, market economy and company organization				
<b>Course goals:</b> Introducing students to the basics of marketing				
<b>Learning outcomes:</b> Theoretical and practical study of marketing activities in the company				
<p><b>Course description:</b>  Lectures: The nature of marketing. Global marketing environment. Customer understanding and behavior. Marketing research and information systems. Market segmentation, targeting and positioning. Product and brand management. Management of marketing services. Price formation strategy. Integrating marketing communication 1: Techniques of mass communications, Integrated marketing communications 2. Techniques of direct communications. Management Distribution. Marketing planning and strategy.</p> <p>Practice: Measuring consumer satisfaction - a case study that ends with preparing a seminar paper and its publication presentation.</p> <p><b>Literature:</b>  Recommended:  Jobber, D., Fahy, J., &amp; Kavanagh, M. (2006). Foundations of marketing.</p> <p>Ancillary:  Kotler, P. (2001). Marketing management, millenium edition. Prentice-Hall, Inc..  Kotler, P., Burton, S., Deans, K., Brown, L., &amp; Armstrong, G. (2015). <i>Marketing</i>. Pearson Higher Education AU.</p>				
<b>Number of classes per week</b>	<b>Lectures: 6</b>	<b>Practical classes: 3</b>	<b>Study research work: 3</b>	<b>Other forms of teaching: -</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type, group and individual work through the preparation of an independent seminar paper - case study.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam		
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>40</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>20</b>			

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## 17. English Language 2a

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course: ENGLISH LANGUAGE 2a</b>				
<b>Lecturer/s: ?</b>				
<b>Status of the course:</b> Compulsory for students in all the departments at the Technical Faculty in Bor.				
<b>ECTS: 4</b>				
<b>Prerequisite:</b> Pre-intermediate level of English language competences.				
<b>Course goals:</b> Acquiring vocabulary dealing with the topics related to the courses studied at the Technical Faculty in Bor. Further development of students' language competences, so that the students could use professional literature and communicate in English (in written and oral form), for everyday and professional purposes.				
<b>Learning outcomes:</b> Students have mastered the vocabulary that is basic for the topics related to their future professions . They have acquired simple grammar structures and language functions necessary for understanding scientific and professional texts. They are also able to discuss the topics that have been dealt with in classes.				
<p><b>Course description:</b></p> <p>Lectures:  <i>Language points: Revision of tenses (present simple and continuous, past simple and continuous, present and past perfect, going to future, future simple); Conditionals (Zero, First, Second and Third); Word formation (common prefixes and suffixes).</i></p> <p><i>Language functions: describing pictures and personality types, discussing, giving arguments - pros and cons, explaining – giving opinion, comparing (different cultures), giving suggestions; Topics: Personality types, Communication, Cultural differences, Environment issues, Healthy Lifestyle.</i></p> <p>Practice:            Enhancing language skills. Practicing the introduced lexis and grammar, as well as discussing the given topics.</p>				
<p><b>Literature:</b></p> <p>Recommended:            Mara Manzalovic, ENGLISH LANGUAGE 2a – A Selection of texts with grammar and lexical exercises.</p> <p>Ancillary:            2. Raymond Murphy &amp; William R.Smalzer - Grammar in Use, intermediate (CUP, Cambridge 2007)            3. Selected grammar and vocabulary exercises.</p>				
<b>Number of classes per week: 2</b>	<b>Lectures: 1</b>	<b>Practical classes: 1</b>	<b>Study research work: /</b>	<b>Other forms of teaching:</b>
<p><b>Teaching methods</b></p> <p>Communicative approach, in combination with grammar translation and audio-visual method. Teaching modes: frontal, individual, team and pair work.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>20</b>	
Exercise attendance		Oral part of the final exam	<b>40</b>	
Coloquium exam/s	<b>30</b>	.....		
Term paper				

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## 18. English Language 2b

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course:</b> ENGLISH LANGUAGE 2b				
<b>Lecturer/s:</b> ?				
<b>Status of the course:</b> Compulsory for students in all the departments at the Technical Faculty in Bor.				
<b>ECTS:</b> 2				
<b>Prerequisite:</b> Pre-intermediate level of English language competences.				
<b>Course goals:</b> Acquiring vocabulary dealing with the topics related to everyday life, as well as to the courses studied at the Technical Faculty in Bor. Further development of students' language competences, so that the students could use professional literature and communicate in English (in written and oral form), for everyday and professional purposes.				
<b>Learning outcomes:</b> Students have mastered the vocabulary, grammar structures and language functions that are related to their future professions. They are able to understand scientific and professional texts and discuss the topics that have been dealt with in classes. They are also able to give their opinion and compare different aspects on the given topics.				
<p><b>Course description:</b></p> <p>Lectures:  <i>Language points: Revision of tenses (present simple and continuous, past simple and continuous, present and past perfect, going to future, future simple); conditionals (Zero, First, Second and Third); word formation (common prefixes and suffixes)</i></p> <p><i>Language functions: describing pictures and personality types, discussing, giving arguments - pros and cons, explaining – giving opinion, comparing (different cultures), giving suggestions</i> Topics: Globalisation, Management Skills, The History of Money, Famous Failures, Moral Stories</p> <p>Practice:            Enhancing language skills. Practicing the introduced lexis and grammar, as well as discussing the given topics.</p>				
<p><b>Literature:</b></p> <p>Recommended:            Mara Manzalovic, ENGLISH LANGUAGE 2b – A Selection of texts with grammar and lexical exercises.</p> <p>Ancillary:            2. Raymond Murphy &amp; William R. Smalzer - Grammar in Use, intermediate (CUP, Cambridge 2007)            3. Selected grammar and vocabulary exercises.</p>				
<b>Number of classes per week:</b> 2	<b>Lectures:</b> 1	<b>Practical classes:</b> 1	<b>Study research work:</b> /	<b>Other forms of teaching:</b>
<p><b>Teaching methods</b></p> <p>Communicative approach, in combination with grammar translation and audio-visual method. Teaching modes: frontal, individual, team and pair work.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	10	Written part of the final exam	20	
Exercise attendance		Oral part of the final exam	40	
Coloquium exam/s	30	.....		
Term paper				

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## 19. Organizational Behavior

<b>Study program:</b> Engineering Management				
<b>Course:</b> Organizational behavior				
<b>Lecturer/s:</b> Milica Ž. Veličković				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Fundamental knowledge of Sociology and Organizational Theory				
<b>Course goals:</b> Purpose of the course is to develop soft skills that are needed to improve the effectiveness and efficiency of the organization.				
<b>Learning outcomes:</b> Acquiring skills to understand people's behavior and overcome problems arising from behavior of individuals or groups in organizations (especially, conflicts at work).				
<p><b>Course description:</b></p> <p>Lectures:  <i>The subject of organizational behavior. Organizational behavior as an interdisciplinary field.</i>  <i>The global context of organizational behavior. Personality and personality traits. Perception. Values, attitudes, job satisfaction, emotions at work. Motivation. Group behavior. Interpersonal communication in organizations. Cooperation and conflicts in the organization. Leadership in organizations. Power and political processes. Decision-making in organizations. Organizational structure and culture. Organizational learning and organizational changes. Rewarding employees.</i></p> <p>Practice:  <i>Work in groups - case study, preparation of a seminar paper and its public presentation at the end of the course</i></p>				
<p><b>Literature:</b></p> <p>Recommended:  1. Knights, Willmott. <i>Introducing Organizational Behavior and Management</i>, Thomson Learning, 2007</p> <p>Ancillary:  1. Jančićević, N. <i>Organizaciono ponašanje</i>, Data Status, beograd, 2008.  2. Zimanji, V., Šušnjar, G.Š. <i>Organizaciono ponašanje</i>, Ekonomski fakultet u Subotici, Univerzitet u Novom Sadu, 2005.</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<p><b>Teaching methods</b></p> <p>The teaching methodology is based on interactive work, which implies the active participation of the students. The methodology includes the following forms of work: Presentation of theory and concepts from the area of organizational behavior. Group discussion of selected problems. Case analysis from practice: individual and group. Simulation of real situations in the organization, tests. Independent work on the preparation of a seminar paper during the semester at given topic</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam		
Exercise attendance	5	Oral part of the final exam	60	
Coloquium exam/s	20	.....		
Term paper	10			

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## 20. Basics of Technology and Merchandising knowledge of goods

<b>Study program:</b> Engineering Management				
<b>Course: BASICS OF TECHNOLOGY AND MERCHANDISING</b>				
<b>Lecturer/s:</b> Ivica Petar Nikolić				
<b>Status of the course:</b> Compulsory for Module Business Management and Module Information Technologies				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Knowledge in the field of business economics and basic principles of management				
<b>Course goals:</b> The goal of the course is to provide students with knowledge in the field of technological processes, knowledge and application of goods, along with the modernization of the curriculum.				
<b>Learning outcomes:</b> The outcome of the course is to acquaint students with the goods (quality, testing methods, packaging, transportation and storage) and its application through classes and exercises. Also, it is necessary to train students to understand the essence of technological procedures for obtaining certain products, the problem of raw materials and the importance of protecting and improving the environment.				
<p><b>Course description:</b></p> <p>Lectures: Concept, marking and classification of goods, commercial value of goods. Quality of goods - characteristics and indicators of quality of goods - level of quality of goods - regulations that regulate the quality of goods in circulation. Declaration, mark and brand of goods, trademark-trade on the stock exchange. Packaging and packaging of goods. Storage and transportation of goods. Water technology-types and characteristics of water depending on application-categorization of water. Energetics. Importance of energy-term, forms and sources of energy, fuel, fossil, chemical, nuclear, regulations in the field of production, storage and distribution of fuel, products of raw energy processing. Organic chemical industry. Means for washing, cleaning and disinfection, types. Products of the textile industry, textile raw materials, types and origins.</p> <p>Leather and fur products. Products of wood processing, physical, mechanical and aesthetic properties of wood - advantages and deficiency. Products of chemical and mechanical processing of wood. Food products - type and composition of food products. Processing of fresh meat, quality and production of meat products. Processing of milk and production of dairy products products - production of milk and classification - milk products and regulations in the field of production, transport and processing milk.</p> <p>Fish processing, distribution and production of fish products. Egg production and egg processing.</p> <p>Cereal production, types, needs, quality and processing of cereals. Edible oil production technology and types.</p> <p>Fruits, vegetables and fruit and vegetable products for human consumption. Spices, medicinal and herbal means for enjoyment and their application. Products of the inorganic chemical industry-product characteristics-artificial fertilizers-types of economic importance.</p> <p>Silicate processing products - ceramic products - glass products - cement - construction material - regulations for the quality of inorganic chemical products, storage and transport.</p> <p>Products of metallurgical processing. Metal properties and division into types, method and place of application, storage and transport. Production of diamonds, classification, use, preservation.</p> <p>Practice: Preparation of a seminar paper in the field of organization of transport of some kind of goods and its public defense</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <ol style="list-style-type: none"> <li>1. N. Štrbac, Technology and knowledge of goods, Technical Faculty Bor, 2008. (in Serbian)</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>1. D. Ušćumlić and others. Commercial knowledge of goods, second edition, Publishing Center of the Faculty of Economics in Belgrade, 2002. (in Serbian)</li> <li>2. M. Vlahović, Knowledge of goods, second edition, Professional book, Belgrade, 2001. (in Serbian)</li> <li>3. R. Varley, Retail Product Management Buying and Merchandising, Routledge, Second edition, NY, USA, 2006</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				

<b>Knowledge evaluation (maximum 100 points)</b>			
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points
Lecture attendance	<b>10</b>	Written part of the final exam	
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>60</b>
Coloquium exam/s	<b>10</b>	.....	
Term paper	<b>10</b>		

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## 21. Financial Management and Accounting

<b>Study program:</b> Engineering Management				
<b>Course:</b> Financial Management and Accounting				
<b>Lecturer/s:</b> Dejan T. Riznić				
<b>Status of the course:</b> Compulsory				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Knowledge of business economics, market economy and company organization				
<b>Course goals:</b> Introducing students to financial management and accounting.				
<b>Learning outcomes:</b> Theoretical and practical study of financial management with financial accounting				
<p><b>Course description:</b>  Lectures: Financial function in the company, development of business finances, relationship between the financial function and other functions in the company. Institutional and economic environment and financial operations of companies - monetary credit system - foreign exchange system - banking system - other financial organizations - relations between companies and banks. Financial markets - securities; Investment and financing policy; Dividend policy; Financial planning; Financial analysis, subject of financial analysis, financial reports (balance sheet and income statement) as a basis for financial analysis, cash flow report, business and financial risk. Management of working capital. Liquidity management;  The concept and importance of accounting, normative regulation of accounting - legal regulations and internal accounting regulations. Balance sheet, profit and loss account, basic balance sheet changes, analysis of balance sheet and posting to accounts, compilation of balance sheet and income statement based on accounts. Bookkeeping changes in account definitions and classification, types of accounts. Accounting documents. Organization of accounting - organization of data processing, organization of accounting service, accounting information. Determining the financial result based on income and expenses. Strategic and modern financial management and financial marketing.</p> <p>Practice: Preparing the balance sheet and income statement.</p>				
<p><b>Literature:</b>  Recommended:  Van Horne, J. C., &amp; Wachowicz, J. M. (2009). <i>Fundamentals of financial management 13th ed.</i> Pearson.  Horngren, C. T., Bhimani, A., Datar, S. M., &amp; Foster, G. (2002). <i>Management and cost accounting.</i> Harlow: Financial Times/Prentice Hall.  Friedlob, G. T., &amp; Schleifer, L. L. (2003). <i>Essentials of financial analysis</i> (Vol. 23). John Wiley &amp; Sons.</p> <p>Ancillary:  Lasher, W. R. (2016). <i>Practical financial management.</i> Cengage Learning.</p>				
<b>Number of classes per week</b>	<b>Lectures: 4</b>	<b>Practical classes: 2</b>	<b>Study research work: 2</b>	<b>Other forms of teaching: -</b>
<b>Teaching methods</b>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	10	Written part of the final exam		
Exercise attendance	10	Oral part of the final exam	40	
Coloquium exam/s	20	.....		
Term paper	20			

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## 22. Manufacturing Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> Manufacturing Management				
<b>Lecturer/s:</b> Anđelka Stojanović				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Completed exam for the subjects: Mathematics 1, Basics of Management, Basics of Business Economics, and Fundamentals of Organization				
<b>Course goals:</b> As part of the classes, along with the constant updating of the curriculum, students are taught the most modern methods and techniques of production optimization.				
<b>Learning outcomes:</b> Through classes, students are prepared to use modern production process optimization models adapted to the business market in a modern competitive environment. After taking the course and completing the exam obligations, students possess the necessary foundation for mastering the program of professional subjects in the following semesters: Operations Research I, Operations Research II, and Project Management. Also, with this subject, the necessary knowledge is acquired for the course Logistics, which is the subject of the first semester of the study program Engineering Management, at the master's academic level.				
<p><b>Course description:</b></p> <p>Lectures:            Introductory considerations and concepts. Modern business-production systems and interaction with the environment: definition of production, business-production system, and production planning and control ("PP&amp;C" concept). Production as a transformational system. Production program: definition of the production program, market needs, definition of the production capacity. Product development and study: product life cycle (ideal and realistic form), product quality, product simplification, rapid product development, rapid prototype development, competitive design. Types of production: qualitative aspect of production, the quantitative aspect of production, optimization of production batch size. Production development and preparation: computer-aided process planning, CAD/CAM, and the role of CAPP in CAD/CAM integrations. Organization of immediate preparation of production processes: operational planning and scheduling, provision of materials for production (stock models), "Layout" of the factory from the aspect of material flows. Time management: production and non-production time, types of organization of the sequence of operations (consecutive, parallel, and combined). Just-in-time production: JIT definition, Kanban system, synchronized production. "LEAN" production concept. Regulation of production. Macro and micro organization of production. Working environment and the most important factors of safety at work. Basic elements of the product and the production process quality control: organization and methods of control in production, control of current production, basics of control charts. Specific production costs, role, nature of variability and calculation: the most important production costs - division, interpretation of costs in the company and definition of profit, basic elements of the nature of cost variability, critical point analysis.</p> <p>Practice:            As part of practical classes, during exercises, students solve numerous practical examples from the fields they listened to in lectures. In addition, students are presented with case studies based on practical challenges in a real business environment. Students also prepare a research paper as a seminar paper, which they defend during the public presentation of the seminar paper.</p>				
<p><b>Literature:</b></p> <p>Recommended:            Ivan Mihajlović, Nenad Milijić, Aca Jovanović, Manufacturing Management (in Serbian), Technical Faculty in Bor, University of Belgrade, Bor 2016. ISBN: 978-86-6305-039-6            R.G. Schroeder, Production management - decision-making in the function of production, MATE, Zagreb, 1993.</p> <p>Ancillary:</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
Teaching methods: The theoretical part of the teaching is conducted in the classroom with the use of modern technological support. In the theoretical part of the class, students get to know the theoretical foundations and then apply the theoretical knowledge to concrete examples in the form of calculations, case studies, and analysis.				

<b>Knowledge evaluation (maximum 100 points)</b>			
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points
Lecture attendance	<b>10</b>	Written part of the final exam	<b>25</b>
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>25</b>
Coloquium exam/s	<b>20</b>	.....	
Seminar paper	<b>10</b>		

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## 23. Operations Research 1

<b>Study program:</b> Engineering Management				
<b>Course:</b> Operations research 1				
<b>Lecturer/s:</b> Dejan Bogdanović / Sanela Arsić				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Knowledge in mathematics, statistics and production management				
<b>Course goals:</b> Knowledge acquisition in operational research methods and their application for solving practical organizational problems				
<b>Learning outcomes:</b> Training students to use software tools based on operational research models and their practical application				
<p><b>Course description:</b></p> <p>Lectures:            Linear programming (simplex method, simplex method algorithms, dual problem, post optimal analysis). Transportation problem (general model of the transportation problem, methods for finding an initial solution, methods for finding the optimal solution, degeneracy in the transportation problem). Deployment methods (general model, solving scheduling problems). Application of linear programming (optimal program production, optimization of material consumption, choice of mixture composition, inventory management, optimal capacity expansion, application in agriculture). Integer Linear Programming-(Gomory's Algorithm-extension of the initial model). Nonlinear programming (Classification of solvable problems-NP with linear by a set of constraints, NP with a separable objective function, quadratic programming, integer programming, problem solving methods NP-Kun-Tucker method, gradient method, quadratic programming, separable programming). Dynamic programming (Functions and types of DP processes, general characteristics and application of DP-simple allocation of a homogeneous resource, allocation of jobs to machines, optimal equipment replacement policy). Optimal reserving (OR terms and labels, OR task setting)</p> <p>Practice:            Computational exercises.</p>				
<p><b>Literature:</b></p> <p>Recommended:            1. D. Bogdanović, I. Jovanović, Operaciona istraživanja 1. Tehnički fakultet u Boru, Serbia, 2019.</p> <p>Ancillary:            1. Chase, Operations management for competitive advance, Data Status, Belgrade, 2005.</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<p><b>Teaching methods</b></p> <p>Theoretical teaching of the frontal type with practical applications within group, individual and combined teaching methods.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	40	
Exercise attendance	5	Oral part of the final exam	30	
Coloquium exam/s	20	.....		
Term paper				

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## 24. Decision Theory

<b>Study program: Engineering Management</b>				
<b>Course: Decision Theory</b>				
<b>Lecturer/s: Đorđe Nikolić</b>				
<b>Status of the course:</b> Compulsory for the Engineering Management students				
<b>ECTS: 8</b>				
<b>Prerequisite:</b> Knowledge in Mathematics, Basics of Management, Business Statistics				
<b>Course goals:</b> The course will provide an introduction to models of rational decision making. One of the primary purposes of the course is to provide a set of powerful decision making methods that will help the students to gain critical awareness and ability in choosing and using these methods in order to solve various decision making problems.				
<b>Learning outcomes:</b> Students will acquire theoretical and practical knowledge on the state of art decision making methods, tools and techniques that can be used to solve various decision problems under uncertainty, under risk, as well as to address different multi-criteria methods. Furthermore, students will learn some methods for group decision making. Students should get theoretical as well as practical skills for working in modern software for decision making.				
<b>Course description:</b>				
<b>Lectures:</b> <i>Introduction to Decision Theory:</i> Historical overview; Decision Making process; Conditions for rational choice; Decision elements; Types of Decision-Making environments. <i>Making decisions under uncertainty:</i> Payoff table; Maximax criterion (optimistic method); Wald's Maximin criterion (pessimistic method); Hurwicz's criterion; Savage's minimax regret criterion; Laplace's insufficient reason criterion. <i>Making decisions under risk:</i> Decision tree; Maximizing expected monetary value method; Minimizing expected regrets method; a priori analysis; The value of perfect information; Bayesian probabilistic theory; calculating revised probabilities; Multistage decision problem; The value of imperfect information. <i>Utility theory:</i> Measuring utility and constructing a utility curve; Utility in Decision-Making analysis. <i>Decision Making under certainty:</i> Multi-criteria decision making model; Multi-Attribute Utility Theory; Simple Additive Weighting Model; Analytic Hierarchy Process method; Analytic Network Process method; ELECTRE and PROMETHEE outranking methods; TOPSIS and VIKOR methods; Fuzzy logic theory; Decision making in fuzzy environment. <i>Group decision making:</i> Normative theories of group decision making; Kenneth Arrow social choice theory; Amartya Sen social choice theory. Voting methods: The Plurality Method; The Method of Plurality with Elimination; The Borda Count Method; The Method of Pairwise Comparisons (Condorcet Winner); The Approval Voting.				
<b>Practice:</b> The exercises correspond to the units covered in the lectures. Computational exercises are carried out in the computer lab using the adequate decision-making softwares a (QM for Windows –student version, Visual PROMETHEE-student version, Super Decisions, DIVIZ platform etc.).				
<b>Literature:</b>				
Recommended:				
<ol style="list-style-type: none"> <li>1. M. Wisniewski, Quantitative methods for decision makers (fifth edition), Prentice Hall, 2009.</li> <li>2. Baker, D., Bridges, D., Hunter, R., Johnson, G., Krupa, J., Murphy, J. and Sorenson, K. (2002) Guidebook to Decision- Making Methods, WSRC-IM-2002-00002, Department of Energy, USA. <a href="http://www.dss.dpem.tuc.gr/pdf/Decision%20Making%20Guidebook_2002.p">http://www.dss.dpem.tuc.gr/pdf/Decision%20Making%20Guidebook_2002.p</a> 31</li> <li>3. A. Kangas, M. Kurttila, T. Hujala, K. Eyvindson, J. Kangas, Decision Support for Forest Management, 2nd edition, Springer International Publishing, 2015.</li> <li>4. A. Ishizaka, P. Nemery, Multi-criteria Decision Analysis: Methods and Software, Wiley, 2013.</li> <li>5. Z. Zivkovic, Dj. Nikolic, Fundamentals of the mathematical school of strategic management (in Serbian), Tercija Bor, 2016.</li> </ol>				
Ancillary:				
<ol style="list-style-type: none"> <li>1. Figueira, J., Greco, S., Ehrgott M. (Eds.) (2004). Multiple Criteria Decision Analysis: State of the Art Surveys, Springer, New York.</li> <li>2. Tzeng, G.H., Huang, J.J. (2011). Multiple Attribute Decision Making Methods and applications. CRC Press, Taylor &amp; Francis Group</li> <li>3. Hanssons, S.O. (2005). Decision Theory- A Brief Introduction. Department of Philosophy and the History of Technology, Royal Institute of Technology (KTH), Stockholm.</li> <li>4. Parmigiani, G., Inoue, L.Y.T. (2009). Decision Theory, Principles and Approaches. John Wiley &amp; Sons, Ltd, United Kingdom</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				



Lectures are delivered by combining classic format of teaching, group discussions and case studies. Computational exercises are realized in computer laboratories by presenting the decision methods and software tools in order to address specific problems. Students are doing homework and project assignments via e-Learning MOODLE platform.

**Knowledge evaluation (maximum 100 points)**

<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points
Lecture attendance	<b>5</b>	Written part of the final exam	<b>30</b>
Exercise attendance	<b>5</b>	Oral part of the final exam	<b>20</b>
Coloquium exam/s	<b>30</b>	.....	
Term paper	<b>10</b>		

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## 25. Reliability Theory

<b>Study program:</b> Engineering Management				
<b>Course:</b> Reliability Theory				
<b>Lecturer/s:</b> Ivan Jovanović				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Knowledge of statistics and production management				
<b>Course goals:</b> Teaching the students about reliability determination procedures in production systems and the use of obtained data on the reliability of elements and systems.				
<b>Learning outcomes:</b> Training students to calculate the reliability of elements based on collected data, calculate system reliability based on defined/determined reliability of system elements, and define block diagram from the aspect of reliability for the observed system.				
<b>Course description:</b>				
Lectures: Mathematical foundations of reliability. Reliability of elements. Reliability allocation. Reliability-based design. Failure tree analysis.				
Practice: Elaboration of specific examples of determining the reliability of a certain element/system as a preparation for an independent student's seminar paper. Public defense of the seminar paper in front of students.				
<b>Literature:</b>				
Recommended:				
1. Zelenović D., Todorović, J., Reliability theory of technical systems (in Serbian), FTN Novi Sad, 2004.				
2. Milčić D., Reliability of mechanical systems (in Serbian), University of Niš - Faculty of Mechanical Engineering, Niš, 2005.				
Ancillary:				
1. Milčić D., Mijalković M., Reliability of machine systems - Collection of solved problems (In Serbian), University of Niš - Faculty of Mechanical Engineering, Niš, 2008.				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b>				
Frontal type of theoretical teaching with practical applications within group, individual, and combined teaching methods.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>		Points
Lecture attendance	<b>5</b>	Written part of the final exam		<b>40</b>
Exercise attendance	<b>5</b>	Oral part of the final exam		<b>10</b>
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>20</b>			

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## 26. English Language 3a

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course:</b> English Language 3a				
<b>Lecturer/s:</b> Enisa Nikolić				
<b>Status of the course:</b> compulsory for the students in all departments				
<b>ECTS:</b> 2				
<b>Prerequisite:</b> pre-intermediate to intermediate level of language proficiency				
<b>Course goals:</b> Further development of students' language competence in academic and professional contexts, which includes the development of all language skills. Introduction of professional vocabulary and the relevant language material related to the study programs taught at the Technical Faculty in Bor, so that the students could use professional literature and communicate in English (in written and oral form) in academic or professional settings.				
<b>Learning outcomes:</b> Students have mastered the specific vocabulary, grammar structures and language functions that are characteristic of academic and professional contexts and, to a greater or lesser extent, are able to: independently use professional literature and translate scientific and professional texts of various levels of complexity, present and discuss the topics that have been dealt with in classes and to express themselves in short written forms (short composition, summary, short comment, CV and the cover letter).				
<b>Course</b>		<b>description:</b>		
Lectures: <i>Grammar points:</i> Revision of Tenses (Present Simple/ Continuous, Present Perfect Simple/ Continuous, Past Simple/ Continuous, Past Perfect Simple/ Continuous, Future Simple/Continuous, going to structure); Modal verbs referring to present, future and past; Noun groups, Compounds, Foreign Plurals, Word formation (common prefixes and suffixes); The Passive Voice (revision of passive structures, impersonal passive constructions, questions in the passive); Linking words 1; <i>Language functions:</i> Seeking information, Giving advice, Expressing opinion, Agreeing/ Disagreeing, <i>Topics:</i> Why English Matters, The Importance of English for Engineers, Science and Engineering, Famous Scientists, Types of Engineering, The Different Functions of Engineers, Our Technological World, New Technologies, Data mining , Environmental Issues (Air, Water and Soil Pollution).				
Practice classes: Practice and reinforcement of grammatical structures and lexical content required by the curriculum; further practice and systematic development of all language skills (listening, speaking, reading and writing)				
<b>Literature:</b> Recommended: 1. E. Nikolić, English Language 3a - A Selection of texts with lexical exercises and communicative activities. 2. E. Nikolić, Engleski jezik 3: Grammar Guide and Practice, Univerzitet u Beogradu, Tehnički fakultet u Boru, 2020.  Ancillary: 1. John Eastwood, Oxford Practice Grammar (with answers), Oxford University Press, 2006. 2. Raymond Murphy, English Grammar in use (third edition), Cambridge University Press, 2004.				
<b>Number of classes per week</b> 2	<b>Lectures:</b> 1	<b>Practical classes:</b> 1	<b>Study research work:</b> /	<b>Other forms of teaching:</b> /
<b>Teaching methods</b> Eclectic (combined) method including the principles and techniques of different methods with a focus on communicative approach. Teaching modes: frontal, individual, group/team and pair work.				
<b>Knowledge evaluation (maximum 100 points)</b>				

<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points
Lecture attendance	<b>5</b>	Written part of the final exam	<b>20</b>
Exercise attendance	<b>5</b>	Oral part of the final exam*	<b>40</b>
Midterm exam	<b>30</b>	.....	
Term paper			

\*The prerequisite for taking the oral exam is earning a minimum of 25 points in the midterm and written exam.

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## 27. Human Resource Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> Human Resource Management				
<b>Lecturer/s:</b> Snežana M. Urošević				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basic knowledge of management, sociology and organizational behavior				
<b>Course goals:</b> Acquiring knowledge in the field of strategic planning of human resources development with special reference to motivating and developing the HRM function in the company.				
<b>Learning outcomes:</b> With the acquired knowledge, enable independent strategic planning, motivation and development of the HRM function in company.				
<p><b>Course description:</b></p> <p>Lectures: The concept of human resources management. Strategic aspects of human resources development. Human planning resources. Job analysis. Recruitment and selection of human resources. Abilities, personality characteristics and competencies. Socialization of new employees. Motivating and rewarding. Theories of motivation. Strategies material reward. Traditional approach to rewarding employees. Alternatives to traditional employee remuneration structure. Intangible motivational strategies. Work and work design. Managers and management style. Employee participation. Management by objectives. Education and knowledge innovation employees. Education and development in modern companies. Employee development. Career development and management. Employee advancement. The attitude of the employer towards the employees. Health, safety and welfare. Complaints and discipline. Interactive skills: appeals and disciplinary interviewing. Stress and stress management. Fluctuation and absenteeism. Reengineering the HR function.</p> <p>Practice:Preparation of a seminar paper in the field of employee motivation (research, writing and public defense seminar paper).</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <p>1. С. Урошевић, З. Сајферт, Менаџмент људских ресурса, Дон Вас, Београд, 2012.</p> <p>Ancillary:</p> <p>1. D. Torrington et al, Менаџмент људских ресурса, Дата Статус, Београд, 2004. 2. Ф. Бахтијаревић-Шибер, Менаџмент људских потенцијала, Голден Маркетинг, Загреб, 1999. 3. R.A.Noe, J.R. Hollenbeck, B. Garhart, P.M. Wright, Менаџмент људских ресурса, Мате, Загреб, 2006.</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type and case studies and work in groups on practical teaching				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam		
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>50</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 28. Career Development

<b>Study program:</b> Engineering Management				
<b>Course:</b> Career Development				
<b>Lecturer/s:</b> Snežana M. Urošević				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Knowledge in the field of Fundamentals of Management and Sociology				
<b>Course goals:</b> Getting to know the concepts of career development as well as the factors that determine the need for a managerial relationship towards a career with an emphasis on acquiring knowledge. The aim of the course is to indicate the reasons for career development, recognition of opportunities for development and ways of implementing development.				
<b>Learning outcomes:</b> Students acquire current knowledge important for directions and strategies of career development, and acquire them through a prism own attitudes, values and level of career development. Students will be able to: apply knowledge about strategic approach to career management, connect individual and organizational development goals, recognize motivating and demotivating aspects of career and recognize and overcome career obstacles.				
<b>Course description:</b>				
Lectures: The concept and importance of human resources. Education and development. Employee development. Employee advancement. Defining career. Theories of career development. Career planning and management. Career development. Development strategies career. Career life cycle. Factors affecting career development. Organizational support for development career. The role of managers in career development. Individual career management. Career goals. Managerial career. Creating competitive advantages through employee career management.				
Practice: Research - case study labor market research (creating a seminar paper and its public defense)				
<b>Literature:</b>				
Recommended: 1. С. Урошевић, Развој каријере, Технички факултет у Бору, 2012.				
Ancillary: 1. Ф. Бахтијаревић-Шибер, Менаџмент људских потенцијала, Голден Маркетинг, Загреб, 1999. 2. D. Torrington et al, Менаџмент људских ресурса, Дата Статус, Београд, 2004.				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Theoretical teaching with a combination of traditional presentation methods and an interactive approach through presentation workshops, case studies, role-playing, and case studies from practice.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam		
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>50</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 29. Programming Languages

<b>Study program:</b> Engineering Management				
<b>Course:</b> Programming Languages				
<b>Lecturer/s:</b> Dragisa M. Stanujkic				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Acquired knowledge in Informatics 1 and Informatics 2				
<b>Course goals:</b> Within this course, students acquire the necessary theoretical and practical knowledge about the fundamental concepts of modern programming languages. In addition, students also receive elementary knowledge about compilers and interpreters.				
<b>Learning outcomes:</b> Acquired knowledge about the concepts and characteristics of modern programming languages enables students to choose appropriate languages and their application in the design and development of software applications.				
<b>Course description:</b>				
Lectures: Introduction to programming languages. Syntax, semantics and implementation of programming languages. Lexical and syntactic analysis. Overview of scanner and parser generation tools. The role of program translators. Imperative or procedural programming languages. Programming language basics (alphabet, identifiers, types, literals, expressions, operators, commands). Subroutines. Structures, Unions, and Fields. Basic abstractions. Structural abstractions. Procedural abstractions. Data abstractions. Object-oriented programming languages. Objects and classes. Encapsulation. Inheritance and polymorphisms. Exception handling. Functional programming languages. Logical (declarative, non-procedural) programming languages. Other types of programming languages ("Script" languages, "Markup" languages, specification and modeling languages).				
Practice: During the exercises, students gain practical knowledge about the concepts and characteristics of different language paradigms through designing and writing programs in a selected set of programming languages.				
<b>Literature:</b>				
Recommended: L. Kraus, Programski jezik C sa rešenim zadacima, 9. izdanje, Akademska misao, 2014. R. W. Sebesta, Concepts of Programming Languages, 10th ed., Addison-Wesley Publishing Company, 2012.				
Ancillary:				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: 0</b>
<b>Teaching methods</b>				
Theoretical teaching is conducted in classrooms, using modern didactic tools and methods. Exercises are performed in a specialized computer laboratory.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	25	
Exercise attendance	5	Oral part of the final exam	40	
Coloquium exam/s	25	.....		
Term paper				

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### 30. English Language 3b

<b>Study program:</b> Mining Engineering, Metallurgical Engineering, Technological Engineering and Engineering Management				
<b>Course: English Language 3b</b>				
<b>Lecturer/s:</b> Enisa Nikolić				
<b>Status of the course:</b> Compulsory for the students in all departments				
<b>ECTS:</b> 2				
<b>Prerequisite:</b> pre-intermediate to intermediate level of language proficiency				
<b>Course goals:</b> Further development of students' language competence in academic and professional contexts, which implies the development of all language skills. Introducing grammatical structures and professional lexis related to the study programs taught at the Technical Faculty in Bor so that students can use professional literature and communicate in English (in written and oral form).				
<b>Learning outcomes:</b> Students have mastered specific vocabulary, grammatical structures and language functions characteristic of academic and professional contexts and, to a greater or lesser extent, are able to: independently use professional literature and translate scientific and professional texts of various levels of complexity, present and discuss the topics that have been dealt with in classes and to express themselves in short written forms.				
<b>Course description:</b> Lectures: Language points: Conditionals (all three types); Reported Speech (Sequence of Tenses-Statements); Infinitive vs. -ing form; Participles used adjectivally and in reduced relative clauses; Word formation: common prefixes and suffixes; Linking words 2; Language functions: Summarizing, Comparing and Contrasting, Sequencing/ Ordering, Problem solving, Defining things, Talking about cause and effect. Topics: Sustainable Solutions: Recycling, Going Green, Corporate Social Responsibility; The World of Management: Management Functions, Management Levels in an Organization, Production Management; Safety at Work: Importance of workplace safety, Mine Safety, Lab Safety Rules; Presenting your Ideas: Tips for giving presentations. Practice: Practice and reinforcement of grammatical structures and lexical content required by the curriculum; further practice and systematic development of all language skills (listening, speaking, reading and writing).				
<b>Literature:</b> Recommended: E. Nikolić, English Language 3a - A Selection of texts with lexical exercises and communicative activities. E. Nikolić, Engleski jezik 3: Grammar Guide and Practice, Univerzitet u Beogradu, Tehnički fakultet u Boru, 2020.  Ancillary: 36. Ken Paterson & Roberta Wedge, Oxford Grammar for EAP, Oxford University Press, 2013. 37. Paul Emerson, Business Grammar Builder, Macmillan Publishers Limited, Oxford, 2002.				
<b>Number of classes per week</b> 2	<b>Lectures:</b> 1	<b>Practical classes:</b> 1	<b>Study research work:</b> /	<b>Other forms of teaching:</b> /
<b>Teaching methods</b> Eclectic (combined) method including the principles and techniques of different methods with a focus on communicative approach. Teaching modes: frontal, individual, group/team and pair work.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam*	40	
Midterm exam/s	30	.....		
Term paper				

\*The prerequisite for taking the oral exam is earning a minimum of 25 points in the midterm and written exam.

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### 31. Quality Management

<b>Study program:</b> Engineering Management, Metallurgical Engineering				
<b>Course:</b> Quality Management				
<b>Lecturer/s:</b> Predrag Djordjevic				
<b>Status of the course:</b> Compulsory for students of Engineering Management Department, elective for students of Metallurgical Engineering Department				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Basic knowledge in the fields of mathematics and statistics				
<b>Course goals:</b> Acquiring knowledge in the field of quality management and tools for the development of quality systems				
<b>Learning outcomes:</b> Practical application of the acquired knowledge for the implementation of the quality system				
<b>Course description:</b>				
Lectures:				
<p>During the course students will acquire knowledge regarding the principles of quality management. Special insight is given to the techniques and tools of quality management, through solving practical problems encountered in everyday industrial practice, while the particular attention is given to the application of statistical tools.</p> <p>The history of the development of quality management. Concept and definition of quality. Basic characteristics and structure of the ISO 9000 series standard. ISO 14000, ISO 18000, HACCP, ISO 26000. Integrated management systems. Total Quality Management. Quality Controls in Marketing and Procurement. The Principles of the new production philosophy. Circles of Quality Control. Quality Assurance. Quality tools and techniques: Check Sheets, Histograms, Scatter diagram, Pareto analysis, Ishikawa diagram, Process capability, Brainstorming, Affinity Diagrams, Benchmarking process, Houses Of Quality, Statistical methods of Quality Management. Control Charts, Taguchi method. Sampling: concepts, OC curve construction, Reception plans, Sampling process materials. Japanese Quality Control: Kaizen, 5S, 3MU and Kano models.</p>				
Practice:				
Computational exercises				
<b>Literature:</b>				
Recommended:				
<ol style="list-style-type: none"> <li>1. Živan Živković, Predrag Đorđević, Upravljanje kvalitetom, Grafomed Bor, Bor, 2022.</li> <li>2. Đorđević Predrag, Arsić Sanela, Upravljanje kvalitetom - zbirka rešenih zadataka sa izvodima iz teorije, Tehnički fakultet u Boru, Bor, 2017.</li> <li>3. D. L. Goetsch and S. B. Davis, Quality Management for Organizational Excellence: Introduction to Total Quality, Prentice Hall, 2010.</li> <li>4. D. Hoyle, Quality Management Essentials, Elsevier, 2007.</li> <li>5. S. T. Foster, Managing Quality: Integrating the Supply Chain, Prentice Hall, 2012.</li> </ol>				
Ancillary:				
<ol style="list-style-type: none"> <li>1. F. Gryna, R. C. H. Chua and J. A. De Feo, Juran's Quality Planning and Analysis for Enterprise Quality, McGraw-Hill Education, 2007.</li> <li>2. C. W. Kang and P. H. Kvam, Basic Statistical Tools for Improving Quality, Wiley, 2011.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Theoretical lectures and practical applications provided using group, individual and combined teaching methods.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	

Lecture attendance	<b>10</b>	Written part of the final exam	<b>30</b>
Exercise attendance		Oral part of the final exam	<b>30</b>
Coloquium exam/s	<b>30</b>	.....	
Term paper			

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## 32. Systems Theory

<b>Study program:</b> Engineering Management				
<b>Course:</b> SYSTEMS THEORY				
<b>Lecturer/s:</b> Ivica Petar Nikolić				
<b>Status of the course:</b> Compulsory for Module Business Management and Module Information Technologies				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> : Completed exam obligations for subjects: Mathematics I or Mathematics IM and Informatics I				
<b>Course goals:</b> Gaining basic knowledge of general systems theory (GST) and basis of application of systems thinking in the management of business systems.				
<b>Learning outcomes:</b> Students are ready to analyze the problems that may arise in the operation of complex systems after listening to the course. Students are familiar with the general theory of systems and see the operation of complex systems through a systemic approach. Students are familiar with the possibilities of developing simple models for the simulation of system operation and their optimization.				
<p><b>Course description:</b></p> <p>Lectures: Development of systems theory as a scientific discipline. The difference between classical and systems thinking and systems approach. Basic principles of systems thinking. Methodological foundations of systems theory. General systems theory. Ideal and real systems and the meaning of disturbance magnitude. Basic characteristics of the system. Elementary properties of the system. Division of the system according to categories. The concept of entropy in the general theory of systems. Systemic approach to processes. System and environment. System display. System limits and growth. System input and output sizes. Couplings of elements in the system. Basics of system management. Cybernetics. Management facility. Standard signals. Laplace and inverse Laplace transform. Characteristic equation of the system. Modeling of dynamic system elements. Types of modeling and tools for system modeling. Analytical and statistical methods of system modeling. Transfer function of the system. An example of developing an inventory model in a business system. System response. Showing the system according to the "black box" principle. Structural block diagram of the system. Frequency characteristic of the system. Strengthening the system. System state. The vector equation of state change and the system output equation. Equilibrium state of the system. System stability. Criteria for testing system stability. Examples of modeling complex systems. Application of the MATLAB program package in the display, analysis and modeling of the system</p> <p>Practice: As part of practical classes, during exercises, students solve numerous practical examples from the field of teaching units that they listened to in lectures. Solving practical examples is based on computational examples and computer simulations. In addition, students are presented with case studies based on practical challenges in a real business environment. Students also prepare a study research paper, in the form of a seminar paper, which they defend during the public presentation and defense of the seminar paper. Students use part of the time allocated for exercises to work in computer laboratories where they learn the principles of model development using linear and non-linear statistical analysis methods, using SPSS and MATLAB software packages.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <ol style="list-style-type: none"> <li>1. Ivan Mihajlović, Đorđe Nikolić, Ivica Nikolić, Aca Jovanović, System theory, Script with practical for the application of the MATLAB program package, Technical Faculty in Bor, 2018. Electronic edition. (in Serbian)</li> <li>2. Ivica Nikolić, Đorđe Nikolić, Ivan Mihalović, Aca Jovanović, System theory - a collection of solved problems, II Revised and supplemented edition, Technical Faculty in Bor, Bor, 2016. (in Serbian)</li> <li>3. Rob Dekkers, Applied Systems Theory, Springer, 2015</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>1. Panos J. Antsaklis, Anthony N. Michel, A Linear Systems Primer, 2007 Birkhauser, Boston, USA</li> <li>2. Gary B. Shelly, Harry J. Rosenblatt, Systems Analysis and Design, Shelly Cashman Series, Course Technology, 2012.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<p><b>Teaching methods</b></p> <p>The theoretical part of the teaching is conducted in the office with the use of modern technical aids. In the theoretical part of the class, students are introduced to the theoretical foundations of the subject, and then in the exercises they apply the theoretical knowledge to concrete examples in the form of calculation exercises, case studies and analysis. In addition,</p>				

students work in the computer laboratory for part of the term of the exercises, applying SPSS and MATLAB software tools.

**Knowledge evaluation (maximum 100 points)**

<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points
Lecture attendance	<b>10</b>	Written part of the final exam	<b>25</b>
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>25</b>
Coloquium exam/s	<b>20</b>	.....	
Term paper	<b>20</b>		

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### 33. Operations Research 2

<b>Study program:</b> Engineering Management				
<b>Course:</b> Operations research 2				
<b>Lecturer/s:</b> Ivan Jovanović				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> The acquired knowledge from Operations Research 1, Business Statistics, Production Management, and Mathematics.				
<b>Course goals:</b> Overcoming basic concepts, methods, tools, and techniques in the field of operations research.				
<b>Learning outcomes:</b> Training students to use theoretical models and quantitative methods to solve practical management problems.				
<p><b>Course description:</b>  Lectures: The subject deals with the issues in the field of contemporary operations research (science of management) as follows: game theory, network planning technique, queuing theory, simulation of the production system and inventory models. Learning this course acquire the required knowledge necessary to use theoretical models and quantitative methods to solve practical problems of management. Also, acquire the knowledge for practical usage of software solutions in the field of operations research, and the application of planning techniques to specific project tasks.  Practice:  Computational exercises.</p>				
<p><b>Literature:</b>  Recommended:  1. P. Stanimirović, G. Milovanović, I. Jovanović, Primene linearnog i celobrojnog programiranja, PMF, Niš, 2008.  2. P. Stanimirović, I. Jovanović, Mrežno planiranje, PMF, Niš, 2008.  3. A. Jovanović, Metode operacionih istraživanja, autorizovana predavanja sa zbirkom zadataka, Tehnički fakultet Bor, 2005.</p> <p>Ancillary:  1. Chase, Operations management for competitive advance, Data Status, Belgrade, 2005.  2. W. Winston, Operations Research (Applications and Algorithms), Indiana University, 2004.</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type with practical applications within group, individual, and combined teaching methods.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>5</b>	Written part of the final exam	<b>40</b>	
Exercise attendance	<b>5</b>	Oral part of the final exam	<b>20</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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### 34. Enterprise's organization

<b>Study program:</b> Engineering Management				
<b>Course:</b> Enterprise's organization				
<b>Lecturer/s:</b> Milica Ž. Veličković				
<b>Status of the course:</b> Elective for Business Management Module				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Basics of Business Economics, Manufacturing Management and Organizational Behavior				
<b>Course goals:</b> It is studied in order to acquire general knowledge and specific skills for understanding approaches and procedures of enterprises' organization, as well as for work on planning, organizing and controlling processes in all companies' functions.				
<b>Learning outcomes:</b> After the course students will have necessary knowledge and skills on the basis of which they will be competent for: analysis of processes in the company and its own structures, analysis of the company's elements and their mutual connections, generation of variant solutions and the choice of the optimal solution in solving organizational problems for better functioning of the company in changing environment.				
<b>Course description:</b>				
Lectures: <i>The Development of the organizational theory; The human position in the work process; Elements of the enterprises, processes and their interconnection; Company databases; Basic flows in the company; Shaping effective organizational structures in the company; Shaping information flows in the company; Shaping communication systems in the company; Basic characteristics of organizational structures; Effectiveness of organizational structures; Technologies of the organization and changes in the environment; Enterprise management processes; Methods and techniques used to manage the company</i>				
Practice: Working in groups. Group discussion. Preparation of a seminar paper.				
<b>Literature:</b>				
Recommended: 1. Zelenović, D. tehnologija organizacije industrijskih sistema - preduzeća, FTN, Novi Sad, 2012. 2. Maksimović, R.M. Složenost i fleksibilnost struktura industrijskih sistema, FTN, Novi Sad, 2003				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: ?</b>	<b>Other forms of teaching: ?</b>
<b>Teaching methods</b>				
Theoretical teaching is conducted in the classroom with the analysis of practical examples of organizational structures. Exercises are carried out by working on the concrete organizational methods and techniques in order to prepare students for writing a seminar paper which represents their independent work - a case study of a specific company and the description of all its processes. Seminar papers are publicly presented in front of a group of students, after which the discussion is open				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam		
Exercise attendance	5	Oral part of the final exam	60	
Coloquium exam/s	20	.....		
Term paper	10			

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## 35. Workflow Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> Workflow Management				
<b>Lecturer/s:</b> <a href="#">Dejan Bogdanović</a>				
<b>Status of the course:</b> Elective for students on Business Management Module				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Knowledge in Basics management and production management				
<b>Course goals:</b> Introduce students of the concept of work process management and modern approaches to production management in industrial companies. A thorough study of work process planning and control.				
<b>Learning outcomes:</b> The successful adoption of theoretical and practical approaches in the management of work processes results in students able to independently observe, analyze and provide solutions to the problems of managing work processes in real industrial systems.				
<p><b>Course description:</b></p> <p>Lectures:            Mechanism and principles of management of work processes. Contemporary contributions in developing the system for managing work processes. The structure of the managing system for work processes. Prediction. Determining dependencies system-environment. Planning of work processes. Inventory management. Preparation work processes. The performance of procedures and work flow control. Analysis of the operating procedures, control costs and consumptions. Forming the basis for adjustment processes.</p> <p>Practice:            Computational exercises</p>				
<p><b>Literature:</b></p> <p>Recommended:            1.D. Zelenović, Projektovanje proizvodnih sistema, FTN, 2009.            2.M. Levi-Jakšić, G. Komazec, Menadžment operacija, Megatrend, 2008.</p> <p>Ancillary:            1.D. Bogdanović, N. Milijić, Upravljanje procesima rada-Zbirka rešenih zadataka, Tehnički fakultet Bor, Serbia. 2018.</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type with practical applications within group, individual and combined teaching method.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	40	
Exercise attendance	5	Oral part of the final exam	30	
Coloquium exam/s	20	.....		
Term paper				

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### 36. Computer Programming

<b>Study program:</b> Engineering Management				
<b>Course:</b> Computer Programming				
<b>Lecturer/s:</b> Dragisa M. Stanujkic				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Acquired knowledge in Informatics I, Informatics II and Programming Languages				
<b>Course goals:</b> Students learn fundamental programming concepts, algorithms and data structures and acquire programming skills in an object-oriented programming language.				
<b>Learning outcomes:</b> Students should understand the principles of object-oriented programming, and should be trained for its application in software development.				
<p><b>Course description:</b>  Lectures: Program structure. Data types. Operators. Control structures. Strings. Pointers and dynamic memory management. Functions. Structures, Unions, and Fields. Input/output, text and binary files. Dynamic data structures (chained lists, trees). Object-oriented programming. Classes and objects. Constructors and destructors. Static members. Friendly functions. Friendly classes. Overlapping operators. Derivation and inheritance. Polymorphism and dynamic binding. Virtual functions. Abstract classes. Multiple inheritance. Exception handling. Throwing exceptions. Acceptance of exceptions. Generic mechanism-templates. Standard library. Input and output flows.</p> <p>Practice:  During the exercises, students gain practical knowledge about the concept of object-oriented programming through the creation of programs in the chosen object-oriented programming language.</p> <p><b>Literature:</b>  Recommended:  L. Kraus, Programski jezik C++ sa rešenim zadacima, 10. izdanje, Akademska misao, 2016.  L. Kraus. Programski jezik JAVA sa rešenim zadacima. 2. izdanje, Akademska misao, 2015.</p> <p>Ancillary:</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: 0</b>
<b>Teaching methods</b> Theoretical teaching is conducted in classrooms, using modern didactic tools and methods. Exercises are performed in a specialized computer laboratory.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	25	
Exercise attendance	5	Oral part of the final exam	40	
Coloquium exam/s	25	.....		
Term paper				

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### 37. Project Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> Project Management				
<b>Lecturer/s:</b> Nenad N. Milijić				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS:</b> 8				
<b>Prerequisite:</b> Knowledge in the areas of: Manufacturing Management, Operational Research 1 and 2, Quality Management.				
<b>Course goals:</b> Getting to know and mastering modern methods, techniques and tools for project management. Training students to independently prepare, implement and manage various projects and/or programs, regardless in which areas of the economy they are implemented.				
<b>Learning outcomes:</b> Acquisition of scientific and professional knowledge from theory and their practical application for project management and/or programs using modern software tools MS Project and/or Primavera.				
<b>Course description:</b> Lectures: Management of business systems. Concept, characteristics and types of projects. Project management concept. Basics of investment management. Organizational models for project management. Human resource management of the project. Contracting management. Project quality management. Project risk management. Management of communications in the project. Change management in to the project. Project implementation planning. Monitoring and control of project implementation. Project management via computer programs.  Practice: Preparation of a seminar paper-project for a specific example and its public presentation.				
<b>Literature:</b> Recommended: 1. A. Jovanović, I. Mihajlović, Project Management, authorized lectures with a collection of tasks (In Serbian), Technical Faculty Bor, 2006. 2. P. Stanimirović, I. Jovanović, Network planning and MS Project (In Serbian), PMF, 2008.  Ancillary: 1. P. Jovanović, Project Management (In Serbian), Faculty of Organizational Sciences, Belgrade, 2005. 2. A. Laster, Project Planning and Control, Elsevier, 2003. 3. 3. A. Rosen, Effective IT Project Management, Amacon, New York, 2004. 4. 4. J.R. Meredith, S.J. Mantel, Project Management – A Managerial Approach, John Wiley and Sons, Inc, 7th Edition, Hoboken, NJ, USA, 2009. 5. 5. Mantel, Jr., S.J., Meredith, J.R., Shafer, S.M., Sutton, M.A., Project Management in Practice, JOHN WILEY & SONS, INC., Fourth Edition, USA, 2011.				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Theoretical teaching of the frontal type with practical applications within group, individual and combined teaching method.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	40	
Exercise attendance	5	Oral part of the final exam	20	
Coloquium exam/s	20	.....		
Term paper	10			

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### 38. Business English Language

<b>Study program:</b> Engineering Management				
<b>Course:</b> Business English Language				
<b>Lecturer/s:</b> Slavica Stevanović				
<b>Status of the course:</b> Compulsory .				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> / intermediate level of language proficiency				
<b>Course goals:</b> Developing all the language skills to enable students to work independently and effectively in today's international business environment.				
<b>Learning outcomes:</b> Introducing students to problem-solving, critical thinking, and professional communication through integrated skills. The emphasis is on how to use formal vocabulary and expressions in business-related environments both orally and in written form.				
<p><b>Course description:</b></p> <p>Lectures:  <i>Topics:</i>Target Markets, Triumph and disaster, Prioritizing, Globalization, Company culture, Supply and demand, Negotiations, Staying competitive, International business, Human resources, Business start-up, Reputations  <i>Grammar points:</i> The present, The past, The future, Routines and habits, Modals, Conjunctions, Conditionals, Verb patterns, Passives, Phrasal Verbs, Adjective and adverb patterns, The definite article  <i>Language functions:</i>Giving opinions, Apologies, Criticism and deductions, Requests and offers, Speaking with conviction, Obligation and necessity, Dealing with customer complaints, Making presentations, Welcoming visitors, Handling interview questions, Responding to requests/suggestions, Clarifying  <i>Writing:</i> Advertising copy, Letters requesting payment, Summarizing arguments, Emails. Describing trends, Responding to customer complaints, Reports, A poster presentation, Job application letters, A letter requesting financial support, A press release</p> <p>Practice:  Practice and development of all four language skills.</p>				
<p><b>Literature:</b></p> <p>Recommended:  Jon Naunton, Profile 3, OUP, 2005.(student's book)  Jon Naunton, Profile 3, OUP, 2005. (workbook)</p> <p>Ancillary:  Michael Vince, Intermediate Language Practice(with Key) 3rd edition, Macmillan Heinemann,</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Eclectic method including the principles and techniques of different methods with a focus on communicative approach.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	40	
Coloquium exam/s	20	Presentation	10	
Term paper				

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### 39. Risk Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> RISK MANAGEMENT				
<b>Lecturer/s:</b> Marija V. Panić				
<b>Status of the course:</b> compulsory (Business Management module, Information Technology module)				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Knowledge of economics and organization, decision theory, statistics, organizational behavior, and quality management.				
<b>Course goals:</b> It is studied to acquire both general knowledge and specific skills for recognizing and understanding risks in engineering systems and the nature of risk-induced damage, as well as methods for treating risks.				
<b>Learning outcomes:</b> Students acquire knowledge and skills based on which they become competent in analyzing engineering systems and determining risks, hazards, and perils. They learn how to understand the process of implementing the ISO 31000 standard in all processes in the company. Students learn how to use elements of actuarial mathematics and analytical methods to calculate and rank defined risks in business organizations and engineering systems.				
<b>Course description:</b> <i>Lectures:</i> Concept and definition of risk. Chance of loss. The term and definition of peril and hazard. The burden of risk to society. Basic characteristics of insurance. Types of insurance. Benefits and costs of insurance for society. Basics of risk management. Enterprise risk management. Standards for risk management. Risk management model according to ISO 31000: 2009. Insurance risk management. The concept of self-retention and methods of its determination. Engineering risk management. New perspectives of engineering systems. Elements of probability theory - application in engineering risk management. The law of large numbers. Basics of actuarial mathematics.				
<b>Literature:</b> Recommended: <ol style="list-style-type: none"> <li>1. Живковић Ж., Савић М., Управљање ризиком (ауторизована предавања), Технички факултет у Бору, Бор, 2013.</li> <li>2. Панић М., Управљање ризиком – Збирка задатака са изводима из теорије, Технички факултет у Бору, Бор, 2017.</li> <li>3. Wood M., Risk Management in Organizations, Routledge, London and New York, 2011.</li> </ol> Ancillary: <ol style="list-style-type: none"> <li>4. Rejda G. E., Principles of Risk Management and Insurance, 11th edition, Pearson, Prentice Hall, New Jersey, 2011</li> <li>5. Hampton J. J., Fundamentals of enterprise risk management, AMACOM, New York, 2009.</li> <li>6. Garvey P. R., Analytical methods for risk management (A system engineering perspective), CRC, Pres, 2009.</li> <li>7. Collier, P. M., Fundamentals of risk management for accountants and managers, Elsevier, 2009.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 0</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>30</b>	
Exercise attendance		Oral part of the final exam	<b>30</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 40. Internet Technologies

<b>Study program:</b> Engineering Management				
<b>Course:</b> INTERNET TECHNOLOGIES				
<b>Lecturer/s:</b> Milena M. Gajić				
<b>Status of the course:</b> Compulsory for Module Business Management and Module Information Technologies				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Acquired knowledge in Informatics 1, Informatics 2, Programming Languages and Programming				
<b>Course goals:</b> Through this course, students get the necessary theoretical and practical knowledge and principles of designing and developing applications in the Internet environment. By studying models, architectures and techniques at the conceptual and practical level students are being trained for the independent development of web applications.				
<b>Learning outcomes:</b> Students acquire knowledge and skills for designing and implementing information systems in the Internet environment				
<p><b>Course description:</b></p> <p>Lectures: Internet as an infrastructure for the transmission and delivery of information. Addressing on the Internet. Web and web technologies. Introduction to HTML. Principles of application development in the Internet environment. Database integration into applications (MySQL). Server-side programming (PHP).</p> <p>Practice: During the practical exercises, students get practical knowledge of the application of HTML, MySQL and PHP in a web environment.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <ol style="list-style-type: none"> <li>1. Luke Welling, Laura Thomson, PHP i MySQL: razvoj aplikacija za veb, prevod 5. Izdanja, Mikro knjiga, 2017</li> <li>2. Sebesta, R. W. Concepts of programming languages, Addison –Wesley Publishing Company, 2010.</li> <li>3. Vida Popović, Jovan Popović, jQuery i napredne web tehnologije, Kompjuter biblioteka, 2013</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>1. Adam Trachtenberg, David Sklar, PHP kuvar, 2008</li> <li>2. D. Ince. Developing distributed and E-commerce Applications, Parson Education Limited, 2002.</li> <li>3. Jennifer K., Rafe C. &amp; Laura L. HTML5, CSS3 i JavaScript. Kompjuter biblioteka, Beograd, 2016</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<p><b>Teaching methods</b></p> <p>Teaching contains lectures, seminars and exercises in the computer laboratory, which include working in groups and demonstrating the application of various tools and software.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	20	
Coloquium exam/s	40	.....		
Term paper	10			

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## 41. Management of New Technologies and Innovations

<b>Study program:</b> Engineering Management				
<b>Course:</b> Management of New Technologies and Innovations				
<b>Lecturer/s:</b> Isidora Milošević, Ivica Nikolić				
<b>Status of the course:</b> Compulsory for students on Business Management Module				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Required knowledge of the basics of management, marketing and production management				
<b>Course goals:</b> The goal of the course is to familiarize students with the main elements of managing new technologies and innovations, such as extremely important items for achieving, maintaining and strengthening the competitive advantage at the level of the company, the state, and the overall technological development.				
<b>Learning outcomes:</b> Training students in the use of adequate techniques and knowledge for future professional activity in areas of management of new technologies and innovations.				
<p><b>Course description:</b></p> <p>Lectures:</p> <p>Basics of managing new technologies and innovations. Previous approaches to technological changes. Old and a new techno-economic paradigm. New technologies and high technologies. Specific and general areas management of new technologies and innovations. The meaning of technology. Technology as an object of management. Types of technologies. Technology package and technology components. The concept of technological know-how. Fragmentation of technology. Nature, man, society, and technology. Science-technology-practice relationship. New technologies, employment, and employment. Management of changes in technology and organization. Reengineering and organizational changes. Integrative enterprise models, innovative organization model, and comparative review management model. Technological evolution, the life cycle of the organization, and stages of new development products processes. Technological trajectories. Management of new technologies, productivity/organization/organizational structure. Technology transfer. Strategic and operational technology management. New technologies and company strategy. Models of enterprise technology strategy. New technologies and the market. Innovative organization. Technological innovations and commercialization of inventions. Classification of innovations (radical, evolutionary, architectural, component). Models of innovation activities. Efficiency of innovation activity. The importance of innovative ability and knowledge management - the concept of visible, invisible property. New technologies and competitive advantage - Porter's generic strategies. Diamond competitive advantages. Changing the techno-economic barrier of modern business. New technologies and globalization. Acceleration of technological changes. The new economy. Moore's law. Gazelle company. Capabilities and competencies of the company. Core competence. The root of competitive advantage. Appropriation profit from innovation. Dynamic capabilities. Appropriability regimes. Copying and imitating. Innovative activity and SMEs. Knowledge management as the main competitive force of the XXI century. Key determinants and contributions modern management of new technologies and innovations.</p> <p>Practice:</p> <p>Application of methods to support technology innovations in the company - methods and techniques of creative thinking, methods of technology evaluation, ranking and selection, cases from practice.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <p>J.Howells, The management of Innovation and Technology, Sage Publications, London, 2005</p> <p>Ancillary:</p> <p>S.Shane, Handbook of Technology and Innovation Management, A John Wiley and Sons, Ltd., Chichester, 2008.</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Frontal type of lectures, work in groups, case studies, workshops.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	

Lecture attendance	<b>5</b>	Written part of the final exam	<b>10</b>
Exercise attendance	<b>5</b>	Oral part of the final exam	<b>50</b>
Coloquium exam/s	<b>20</b>	.....	
Term paper	<b>10</b>		

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## 42. Management of Research and Development

<b>Study program:</b> Engineering Management				
<b>Course: Management of Research and Development</b>				
<b>Lecturer/s:</b> Milica Ž. Veličković				
<b>Status of the course:</b> Compulsory for Business Management Module				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Basics of Operational research, Project Management and Quality Management				
<b>Course goals:</b> Acquiring knowledge regarding the importance of research and development activities in the function of companies' growth				
<b>Learning outcomes:</b> Practical application of knowledge and techniques in order to optimize the development of the research and development function in company				
<b>Course description:</b> Lectures: <i>Management of research and development - modern management in the era of scientific and technological progress. Technological progress-management of research and development in conditions of computerization and robotization, The process of matching human resources with new technologies and innovations - inventiveness and innovation. Creativity of improvement - improvement tools-the logic of De Bono's methods-random input method. Formulation of companies' development policy - characteristics and systematization of development policy of companies - dynamism of development policies. Policy and strategy of research and development-innovation and strategy-inventions, scientific discoveries and development strategy-research and development-research development process and limitations-research strategy and development-horizontal development-vertical integration-diversification-functional strategy- cost leadership strategy-control of research and development. Development program of the company - Company development plan and its dimensions-investments-evaluation of the economic efficiency of the development program, risk in business development - risk identification - risk analysis - risk control - scientific research development work. Innovations and TQM concept-meaning of innovation-new innovation paradigm-innovation cycle. Factors for achievement of innovation. Tools for CASE-Questions Management Links for CASE. Development according to the requirements of ISO standards 9000-software quality improvement ISO 9000-development process-development management</i>				
<b>Literature:</b> Recommended: 1. A. D. Jankowicz, Business Research Projects, Luton Business School, 2005  Ancillary: 1. Ž. Živković, M. Jelić, N.Popović, Upravljanje istraživanjem i razvojem, DŠIP - Bakar Bor, 2003.				
<b>Number of classes per week</b> 3	<b>Lectures:</b> 3	<b>Practical classes:</b> /	<b>Study research work:</b> ?	<b>Other forms of teaching:</b> ?
<b>Teaching methods</b> Teaching of the theory with practical applications within group, individual and combined teaching method.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam		
Exercise attendance		Oral part of the final exam	60	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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### 43. Strategic Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> Strategic Management				
<b>Lecturer/s:</b> Isidora Milošević, Aleksandra Radić				
<b>Status of the course:</b> Compulsory for students on Engineering Management Department (Business Management module, Information Technology module)				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Knowledge of the basics of management, the basics of organization and decision-making theory				
<b>Course goals:</b> Acquiring knowledge in the field of strategic planning.				
<b>Learning outcomes:</b> Mastering the technique and technology of strategic planning, as well as mastering the appropriate tools used in they use that purpose.				
<p><b>Course description:</b></p> <p>Lectures:            Concept and characteristics of strategic management. Strategic mission and vision. Strategic analysis. Strategic options. Choice of strategy. Implementation of the strategy. Control of strategy implementation. Tools and techniques of strategic management: SWOT analysis, analysis of strategic wedges, KFU method, scenario method, method simulations, delphi method. Method of strategic portfolio analysis, technological network. Leadership: concept and definition of leadership. Leadership theories and styles. The concept of a managerial network. The concept of shared leadership. Teamwork. Empowerment of employees. Virtual leadership. Success strategies.</p> <p>Practice:            Case study - solving a specific business problem (work in a group - and presentation of solutions). Comparative analysis of different solutions from different groups.</p>				
<p><b>Literature:</b></p> <p>Recommended:            David, F.R. (2012). Strategic Management, Concepts and Cases, Thirteenth edition, Francis Marion University Florence, South Carolina.            Dess, Lumpkin, Eisner, Strategijski menadžment, Data Status, Beograd, 2007</p> <p>Ancillary:            G. Cole, Strategic Management, 2nd Edition, Middlesex University, 2003            M. A. Hitt et al., Strategic Management, 7e, Concepts and Cases, Texas A and M University, 2006.</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Theoretical teaching of the frontal type with practical applications within group, individual and combined teaching method.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam		
Exercise attendance	5	Oral part of the final exam	60	
Coloquium exam/s	20	.....		
Term paper	10			

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## 44. Planning and control of costs

<b>Study program:</b> Engineering Management				
<b>Course:</b> Planning and control of costs				
<b>Lecturer/s:</b> Aleksandra N. Fedajev				
<b>Status of the course:</b> Compulsory for all students of business management module				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Knowledge in the field of economics and business organization				
<b>Course goals:</b> Acquiring adequate knowledge in the field of cost economics, financial accounting and financial analysis and the application of modern ICT tools in recording, monitoring and analyzing the trend of costs in economic entities, as well as their impact on the financial result of economic entities.				
<b>Learning outcomes:</b> After attending the course, students will acquire the necessary theoretical knowledge about the economics of business operations, with a special emphasis on operating costs. In addition, they will acquire the necessary knowledge in the field of business changes' recording, financial reporting and financial analysis with the support of information systems.				
<p><b>Course description:</b></p> <p>Theoretical classes: Organization of the business economy. Assets economy of economic entities. Labor economy. Investments in reproduction. Operating costs. Basic elements of costs. Types of expenses. Costs by nature of expences. Costs by behaviour in reproduction. Costs dynamics and revenues of the company. Marginal costs. The specifics of business costs in particular economic activities. Calculation of costs. Cost price calculation. Costs and profitability in business operations, Cost management, Fundamentals, application and principles of double-entry bookkeeping, Chart of accounts, Impact of economic changes on company assets, Recording of expenses and incomes in business accounts, Short-term calculation of financial results, Financial reports, Financial analysis.</p> <p>Practical classes: Numerical exercises, student training for application of accounting software in recording of business changes in a virtual company and preparation and analysis of financial reports. Additionally, as part of the exercises (3 hours per week), the operational plan envisages the implementation of SAP/ERP exercises from 12th to 14th working week in the summer semester. Through the SAP/ERP Financial Accounting (FI) module, students will deeply analyze the process of integral liabilities in accounts within Financial Accounting.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <p>Leslie G. Eldenburg, Susan K. WolcottLeslie G. Eldenburg, Susan K. Wolcott, (2011). Cost Management: Measuring, Monitoring, and Motivating Performance, Second (2nd) Edition, John Wiley &amp; Sons Inc.</p> <p>Shank K. Govindarajan, (2008). Strategic Cost Management: The New Tool for Competitive Advantage. Free Press.</p> <p>Ancillary:</p> <p>Don R. Hansen, Maryanne M. Mowen, Dan L. Heitger, (2021). Cost Management, Fifth (5th) Edition, Cengage Learning.</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 3</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	50	
Coloquium exam/s	20	.....		
Term paper				

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## 45. Business Ethics

<b>Study program:</b> Engineering Management				
<b>Course:</b> Business Ethics				
<b>Lecturer/s:</b> Danijela Voza				
<b>Status of the course:</b> Elective for fourth grade students; Modul - Business management				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Prior knowledge of the subjects: Basics of management, Organizational behavior, Human resource management				
<b>Course goals:</b> Teaching within this subject comprises theoretical lectures introducing students to ethical problems and dilemmas in the business environment. The basics of fundamental ethical theories that can guide successful moral reasoning in business are highlighted. Next to general, specific areas of business ethics are also studied: corporate social responsibility, marketing ethics, environmental ethics, ethics in public relations, and ethics in leadership. Numerous examples indicate how companies act in business, while case studies put the students in the place of moral decision-makers.				
<b>Learning outcomes:</b> This course presents the role of ethics in the business world and develops students' ability to analyze and describe ethical dimension of economic decisions. During these lectures, students will be encouraged to: 1) acquire skills in recognizing and solving ethical issues in business, 2) critically review their own value system and 3) appreciate the role of individual values in the business environment and workplace.				
<b>Course description:</b> <i>Lectures:</i> 1. Introductory considerations – morality and ethics as a philosophical discipline; 2. Introduction to normative ethics; 3. Business ethics as part of ethics; 4. Ethical aspects of decision-making; 5. Corporate social responsibility; 6. Institutionalization of corporate social responsibility; 7. Social responsibility in marketing and public relations; 8. Social responsibility and environmental protection; 9. Ethical aspects of leadership				
<b>Literature:</b> Recommended: 1. Weiss, J.W., Business Ethics – A Stakeholder and Issues Management Approach), 6th Edition, Berrett-Koehler, San Francisco, 2014. 2. De George, R.T., Business Ethics. Pearson, 2009 Ancillary: 1. Milovan Vuković, Danijela Voza, Aleksandra Vuković, Business ethics, Tehnički fakultet u Boru: Bor, 2020				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 0</b>	<b>Study research work:</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b> Ex-cathedra lectures and case studies through work in workshops				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>60</b>	
Exercise attendance	/	Oral part of the final exam		
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 46. Integrated Management Systems

<b>Study program:</b> Engineering Management				
<b>Course:</b> Integrated Management Systems				
<b>Lecturer/s:</b> Predrag Đorđević				
<b>Status of the course:</b> Elective for students of Engineering Management Department, Business Management module				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Knowledge in the field of quality management				
<b>Course goals:</b> Acquiring general knowledge in the field of Integrated Management Systems and mastering the fundamental requirements of implementing an Integrated Management System defined by appropriate standards within a business system.				
<b>Learning outcomes:</b> Students will gain knowledge about the purpose, structure, required resources and ways of applying a number of international standards used within a management system.				
<b>Course description:</b>				
Lectures:				
Importance of Management System integration, IMS structure. Fundamentals of EMS. Fundamentals of OHSAS. Fundamentals of ISO 16949. Fundamentals of ISO 10014. Process management - basis for integration. ISO 9001 and related standards - process approach. ISO 9001 and environmental protection standards, ISO 9001 and occupational safety standards. ISO 9001 and food safety standards. ISO 9001 and laboratory accreditation standards. Other management organizational standards. IMS design. Establishment of IMS. Measuring and managing IMS performance. Information support for IMS management.				
Practice:				
Covers demands of standards of IMS.				
<b>Literature:</b>				
Recommended:				
<ol style="list-style-type: none"> <li>1. Nedeljko Živković, Integrisani sistemi menadžmenta, elektronsko izdanje, FON, 2012.</li> <li>2. Živan Živković, Predrag Đorđević, Upravljanje kvalitetom, Grafomed Bor, Bor, 2022.</li> <li>3. Arsovski, S. Process Management, Center for Quality, Faculty of Mechanical Engineering, Kragujevac, 2007.</li> </ol>				
Ancillary:				
<ol style="list-style-type: none"> <li>1. Pardy, W., Andrews, T., Integrated management systems: Leading strategies and solutions, Government Institutes, 2009.</li> <li>2. Lee, T. H., Shiba, S., &amp; Wood, R. C. Integrated management systems: A practical approach to transforming organizations (Vol. 8). John Wiley &amp; Sons, 1999.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 1</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>30</b>	
Exercise attendance		Oral part of the final exam	<b>30</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 47. Environmental Management

<b>Study program:</b> Metallurgical Engineering, Engineering Management				
<b>Course:</b> Environmental Management				
<b>Lecturer/s:</b> Milovan Vuković, Danijela Voza				
<b>Status of the course:</b> Elective for 4th grade students of Engineering management - modul Business management and students of Metallurgical Engineering - moduls Extractive Metallurgy				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Prior knowledge of the basics of management and company organization				
<b>Course goals:</b> The purpose of this course is to acquaint students with the theory and practice of solving problems in the field of protection environment. Students will learn about the importance of environmentally responsible behavior in everyday life and protecting biodiversity and natural resources. Also, this subject strives towards mastering the techniques and skills necessary to solve environmental problems and find sustainable solutions in the business.				
<b>Learning outcomes:</b> This course is made up of theoretical lectures whose aim is to acquaint students with different tasks and possible situations that occur in the field of environmental protection. During the lecture, the teacher points to environmental management's nature, task, and role, with special reference to sustainable development. Also, the occurrences and influences of numerous professions in environmental management are considered. The subject characterizes an interdisciplinary approach emphasizing some of the most important ways of making decisions and useful tools in environmental management. The program also provides specific knowledge necessary to perform professional tasks.				
<b>Course description:</b>				
<i>Lectures:</i>				
1. Introduction to environmental management; 2. General principles of sustainability and environmental protection; 3. Classification of natural resources - Atmospheric and climate changes; 4. Water resources and land; 5. Human influence activities on the quality of the environment; 6. Concepts of environmental management; 7. Standard, monitoring, modeling, and control; 8. Environmentally responsible business and industrial companies as a target group; 9. Pollution and waste management; 10. Environmental policy: conflicts, cooperation, and ethical issues; 11. Global environmental challenges.				
<b>Literature:</b>				
Recommended:				
1. Barrow, C. J. (2006). <i>Environmental Management for Sustainable Development</i> . 2nd Edition, London/New York: Routledge,				
Ancillary:				
2. Murali Krishna, I. V, Manickam, Valli (2017). <i>Environmental Management Science and Engineering for Industry</i> , 1st Edition. 2017. Elsevier				
3. Voza, D. (2022). <i>Environmental management</i> . supplementary material, e-version.				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 0</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Ex-cathedra lectures and case studies through work in workshops				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>60</b>	
Exercise attendance	/	Oral part of the final exam		
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 48. Change Management

<b>Study program:</b> Engineering Management				
<b>Course:</b> Change Management				
<b>Lecturer/s:</b> <a href="#">Dejan Bogdanović</a>				
<b>Status of the course:</b> Elective for Elective for students on Business Management Module				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Previous knowledge in the field of human resource management and career development				
<b>Course goals:</b> Acquiring the necessary knowledge and skills for adaptation to changes, as well as the management of resources in terms of changes.				
<b>Learning outcomes:</b> Knowledge and skills for strategic allocation of resources in conditions of change				
<b>Course description:</b> <b>Lectures:</b> The meaning of management. Predicting the quality of decisions. Efficiency and effectiveness. Role mismatch. Styles bad management. Change management process and change management models. Predicting efficiency of implementation of decisions. The driving force behind change management. Mutual trust and respect and the qualities of people. Communication problems - misunderstanding. Communicating with people of different styles. Perception and understanding reality. Turning the work of commissions and boards into teamwork. Change management and other management disciplines.				
<b>Practice:</b>				
<b>Literature:</b> <b>Recommended:</b> 1. D. Bogdanović, Upravljanje promenama, Tehnički fakultet u Boru, Serbia, 2016.				
<b>Ancillary:</b> 1. Adizes I.: Change management, Adizes Institute, Santa Monica, 2005				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes:</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b>				
Theoretical teaching; frontal, group, individual and combined teaching method.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>		Points
Lecture attendance	<b>10</b>	Written part of the final exam		<b>60</b>
Exercise attendance		Oral part of the final exam		
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>10</b>			

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## 49. Advanced Information Technologies

<b>Study program:</b> Engineering Management				
<b>Course:</b> Advanced Information Technologies				
<b>Lecturer/s:</b> Predrag Đorđević				
<b>Status of the course:</b> Compulsory for students of Engineering Management Department, Information Technology module				
<b>ECTS:</b> 5				
<b>Prerequisite:</b> Knowledge acquired within the courses Informatics 1 and Informatics 2				
<b>Course goals:</b> The aim of the course is to acquaint students with the basic concepts of computer-supported systems that are used to support strategic business decision-making. Acquiring specialist and applied knowledge in the field of advanced information technologies and training students for the application of these technologies in engineering practice.				
<b>Learning outcomes:</b> Students will be able to use the knowledge gained as a result of attending and active participation in lectures and practical exercises in the field of advanced information technologies in other curriculum subjects, as well as when solving a wide range of academic tasks. The main goal of the acquired knowledge and practical skills is finding the optimal solution for complex engineering problems imposed by modern engineering practice.				
<b>Course description:</b>				
Lectures:				
Components of modern information systems. Web services, portals and agent environments. Fundamentals of XML technology. Application of XML in business. Basic elements and structure of HTML and XML documents. Digital signature and XML documents. Program exchange of XML documents in a business environment. Types of data, ways of collecting, refining and preparing for analysis. Methods for analyzing large amounts of data, working with multimedia data, using and storing data collected from users. Basic techniques for data analysis. ANOVA, different types of regression, classification and clustering. Data visualization procedures, selection and creation of appropriate types of graphics. An overview of the basic concepts in the domain of business intelligence. Data Warehousing. Data Mining.				
Practice:				
Exercises in the computer laboratory.				
<b>Literature:</b>				
Recommended:				
<ol style="list-style-type: none"> <li>1. Ђулибрк, Д., Напредне информационе технологије, ФТН, Нови Сад, 2008.</li> <li>2. Handout notes from lectures and practical classes in PDF.</li> <li>3. Turban, E., Decision Support and Business Intelligence Systems. Pearson Prentice Hall, 2007.</li> <li>4. Harold, E. R., Means, W. S., XML in a Nutshell: A Desktop Quick Reference. O'Reilly Media, 2004.</li> </ol>				
Ancillary:				
<ol style="list-style-type: none"> <li>1. Vercellis, C., Business intelligence: data mining and optimization for decision making, John Wiley &amp; Sons, 2011.</li> <li>2. Skonnard, Aaron, and Martin Gudgin. "Essential XML quick reference." Addison-Wesley, 2002.</li> <li>3. Dean, Jared. Big data, data mining, and machine learning: value creation for business leaders and practitioners. John Wiley &amp; Sons, (2014).</li> <li>4. Han, J., Pei, J., and Kamber, M., Data Mining: Concepts and Techniques: Elsevier Science, 2011.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Teaching is conducted in the form of lectures and exercises carried out in the computer laboratory. The theoretical lectures will be followed by training in the practical use of software solutions designed to solve problems in the domain of data processing, analysis and exchange in a business environment.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	



Lecture attendance	<b>10</b>	Written part of the final exam	<b>25</b>
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>25</b>
Coloquium exam/s	<b>20</b>	.....	
Term paper	<b>10</b>		

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## 50. Management Information Systems

<b>Study program: Engineering Management</b>				
<b>Course: Management Information Systems</b>				
<b>Lecturer/s: Đorđe Nikolić</b>				
<b>Status of the course:</b> Compulsory for students enrolled in the Information Technology module				
<b>ECTS: 5</b>				
<b>Prerequisite:</b> Knowledge in Basics of Management, Basics of Organization, Informatics 1 and Informatics 2, Manufacturing Management, Decision Theory.				
<b>Course goals:</b> This course is an introduction to management information systems and their role in supporting and transforming modern organizations and management activities.				
<b>Learning outcomes:</b> Students will learn how businesses use information systems and technology to create competitive strategies, support business processes, and accomplish their goals.				
<b>Course description:</b>				
<b>Lectures:</b> Introduction to Information Systems; Information systems in organizations; Basic principles of Information Technology: hardware and software components, database technology, telecommunications and networking; E-commerce and E-business; Enterprise Resource Planning (ERP) systems; Decision Support Systems (DSS) and Expert Systems (ES); Information system development and implementation; Securing information systems and the ethical and societal issues involved in IT.				
<b>Practice:</b> Exercises are organized according to the HP Life educational program. Additionally, as part of the exercises (2 hours per week), the operational plan envisages the implementation of SAP/ERP exercises from 12th to 14th working week in the autumn semester. Through the SAP/ERP Materials Management (MM) module, students will analyze in more detailed the integrated procurement process.				
<b>Literature:</b> Recommended: <ol style="list-style-type: none"> <li>1. G.V.Post, D.V. Anderson, Management Informations Systems, McGraw Hill, New York, 2003.</li> <li>2. K.C. Laudon, J.P. Laudon, Management Information Systems, Managing the digital firm (twelfth edition), Pearson Higher Education, 2012</li> <li>3. McKinney, E., Kroenke, D., Processes, Systems, and Information: An Introduction to MIS 2nd ed., Pearson Education, 2015.</li> </ol> Ancillary: <ol style="list-style-type: none"> <li>1. Ralph M. Stair, G.W Reynolds, Principles of Information System, A Managerial Approach 9th, Course Technology, Cengage Learning, 2010.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b> Lectures are delivered by combining classic format of teaching, group discussions and case studies. Computational exercises are realized in computer laboratories by demonstrating the adequate software tools to address specific problems within the HP-Life program curriculum. Students are doing homework and project assignments via e-Learning MOODLE platform.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	<b>10</b>	Written part of the final exam	<b>20</b>	
Exercise attendance	<b>10</b>	Oral part of the final exam	<b>20</b>	
Coloquium exam/s	<b>20</b>	.....		
Term paper	<b>20</b>			

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## 51. Business Informatics

<b>Study program:</b> Engineering Management				
<b>Course:</b> Business Informatics				
<b>Lecturer/s:</b> Dragisa M. Stanujkic				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 4				
<b>Prerequisite:</b> Acquired knowledge in Informatics 1 and Informatics 2				
<b>Course goals:</b> The goal of the course is to introduce students with modern theoretical and practical aspects of business informatics, as well as the development of business applications in the chosen programming language.				
<b>Learning outcomes:</b> Students acquire knowledge and skills on the basis of which they become competent in the development of business applications.				
<p><b>Course description:</b></p> <p>Lectures: Introduction to information and communication technologies. Development and implementation of information systems. Development of business applications. Electronic business and electronic commerce. Electronic business models. Electronic markets and exchanges. Electronic banking, electronic money and cryptocurrencies. Internet marketing. Planning and development of business applications in the Python programming language.</p> <p>Practice: During the exercises, students gain practical knowledge about the application of the chosen programming language in order to develop business applications</p>				
<p><b>Literature:</b></p> <p>Recommended: Stankic, R., Poslovna informatika, Ekonomski fakultet, Beograd, 2012. Paul, B., Python bez oklevanja, CET, 2017.</p> <p>Ancillary:</p>				
<b>Number of classes per week</b>	<b>Lectures: 3</b>	<b>Practical classes: 1</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: 0</b>
<p><b>Teaching methods</b></p> <p>Teaching consists of lectures, seminars and exercises in the computer laboratory, which include working in groups and demonstrating the application of various tools and software.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	20	
Coloquium exam/s	40	.....		
Term paper	10			

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## 52. Relational Databases

<b>Study program:</b> Engineering Management				
<b>Course:</b> RELATIONAL DATABASES				
<b>Lecturer/s:</b> Milena M. Gajić				
<b>Status of the course:</b> Elective for Module Information Technologies				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Through the course, students are prepared for designing, implementing, using and maintaining relational databases, as well as for using SQL programming language. Solving specific problems using the MS Access database management system.				
<b>Course goals:</b> Students acquire advanced knowledge in the field of database design, application of structured query language SQL.				
<b>Learning outcomes:</b>				
<b>Course description:</b>				
Lectures: Introduction to data management procedures, database terminology and concepts. Basic Concepts of Data Modeling: Conceptual, logical, and physical data models. Entity Relationship Diagram. Relational Database Model. Relational Database Constraints. Functional Dependencies and Types of Keys. Update anomalies in relational databases. Normal Forms. Relational Database Design Approaches. Structured Query Language (SQL): Data definition & data control. SQL: Data manipulation.				
Practice: During the exercises, students get practical knowledge of the application of SQL query language in relational database management systems MS Access and MS SQL Server.				
<b>Literature:</b>				
Recommended:				
<ol style="list-style-type: none"> <li>1. Lazarević, B., Marjanović, Z., Aničić N., i Babarogić S. Baze podataka. FON, Beograd, 2010.</li> <li>2. Atkinson, P., Vieira, R. Microsoft SQL Server 2012 programiranje. Mikro knjiga, Beograd, 2013.</li> </ol>				
Ancillary:				
<ol style="list-style-type: none"> <li>1. Riordan, M. R. Projektovanje baza podataka - Prevod knjige: Designing Effective Database Systems. Mikro knjiga, Beograd, 2016.</li> <li>2. Mogin, P., Luković, I. Principi baza podataka. FTN Novi Sad. 1996.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<b>Teaching methods</b>				
Teaching contains lectures, seminars and exercises in the computer laboratory, which include working in groups and demonstrating the application of various tools and software.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	20	
Coloquium exam/s	40	.....		
Term paper	10			

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### 53. Algorithms and Data Structures

<b>Study program:</b> Engineering Management				
<b>Course:</b> Algorithms and Data Structures				
<b>Lecturer/s:</b> Dragisa M. Stanujkic				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Knowledge of subjects: Computer Programming and Programming Languages				
<b>Course goals:</b> Acquisition of general and advanced knowledge and specific skills in the field of algorithmic problem solving and programming.				
<b>Learning outcomes:</b> Students will learn basic algorithms used in the implementation of computer programs and methods of analyzing their complexity, correctness and performance. In addition, students will improve their programming skills in the Java programming language.				
<p><b>Course description:</b></p> <p>Lectures: The basic philosophy of the algorithmic way of expressing data processing procedures. Procedural and declarative way of expressing the algorithm. Algorithmic structures. Data structure classification and declaration. Algorithms over the structure of data in the operational memory. Algorithms over linear and tree-type structures. Search and search algorithms. Data structure editing algorithms. Recursive algorithms. Algorithms over persistent data structures. File organization. Complexity and efficiency of the algorithm. Algorithms in the selected Java programming language.</p> <p>Practice: During the exercises, students gain practical knowledge through designing and writing programs in the chosen programming language.</p>				
<p><b>Literature:</b></p> <p>Recommended: Urošević, D., Algoritmi i strukture podataka, CET, Beograd, 2018.</p> <p>Ancillary: Yakov, F., JAVA 8 programiranje, Kompjuter biblioteka, Beograd, 2018.</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: 0</b>
<p><b>Teaching methods</b></p> <p>Classes consist of lectures and exercises in the computer laboratory, which include working in groups and demonstrating the application of various algorithms and structures.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	20	
Coloquium exam/s	50	.....		
Term paper				

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## 54. Business Web Design

<b>Study program:</b> Engineering Management				
<b>Course:</b> Business Web Design				
<b>Lecturer/s:</b> Dragisa M. Stanujkic				
<b>Status of the course:</b> Elective				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Knowledge of teaching subjects: Internet technologies, Advanced information technologies				
<b>Course goals:</b> Students acquire the advanced knowledge needed to create and maintain commercial websites				
<b>Learning outcomes:</b> Students will become familiar with the procedures for creating, testing, and maintaining websites. In addition, students will improve their programming skills in the JavaScript programming language.				
<p><b>Course description:</b></p> <p>Lectures:            Internet, World Wide Web and their impact on modern business. Rules and concepts of web design. Website planning. Website navigation. Website structure. HTML. CSS. JavaScript programming, Integration of JavaScript and HTML code. Creating presentations. Testing presentations. Promotion of the site and submission of the site to search engines. Holding a presentation. Methods and techniques for website evaluation.</p> <p>Practice:            During the exercises, students gain practical knowledge about designing, creating and maintaining websites in a business environment.</p> <p><b>Literature:</b></p> <p>Recommended:            Jennifer N. R., Naučite web dizajn. Mikro knjiga, Beograd, 2016.            Julie C. M., PHP, MySQL i JavaScript, Kompjuter biblioteka, Beograd, 2018.</p> <p>Ancillary:            Suehring, S. ,JavaScript Korak po korak, CET, Beograd, 2014.            Jennifer K., Rafe C. &amp; Laura L., HTML5, CSS3 i JavaScript, Kompjuter biblioteka, Beograd, 2016.</p>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: 0</b>
<p><b>Teaching methods</b></p> <p>Teaching consists of lectures, seminars and exercises in the computer laboratory, which include working in groups and demonstrating the application of various tools and software.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	20	
Coloquium exam/s	40	.....		
Term paper	10			

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## 55. Computer Networks

<b>Study program:</b> Engineering Management				
<b>Course:</b> COMPUTER NETWORKS				
<b>Lecturer/s:</b> Milena M. Gajić				
<b>Status of the course:</b> Elective for Module Information Technologies				
<b>ECTS:</b> 6				
<b>Prerequisite:</b> Acquired knowledge in Informatics 1, Informatics 2, Internet Technologies, and Advanced Information Technologies				
<b>Course goals:</b> Students learn fundamentals of network architectures and basic protocols and services of modern computer networks.				
<b>Learning outcomes:</b> Students should understand the principles of networking, and should be trained for creating and maintaining local and wide area networks.				
<p><b>Course description:</b></p> <p><b>Lectures:</b>            Basic notions in computer networks. Network topologies. Line configuration. Transmission modes. Network equipment. Active and passive components. LAN (Local Area Network), MAN (Metropolitan Area Network), WAN (Wide Area Network). Reference models. OSI reference model. Physical layer. Data-link layer. Network layer. Transport layer. Session layer. Presentation layer. Application layer. TCP/IP reference model. Network access layer. Internet layer. Transport layer. Application layer. Ethernet. Internet protocol. IPv4 Address Classes. Subnet mask. Subnets. Classless Inter-Domain Routing (CIDR). Network Address Translation (NAT). IPv6 addresses. Address Resolution Protocol (ARP). Reverse Address Resolution Protocol (RARP). Dynamic Host Configuration Protocol (DHCP). Transport layer protocols. Ports. User Datagram Protocol (UDP). Telnet. Secure Shell (SSH). Remote desktop. Domain Name System (DNS). File Transfer Protocol (FTP). Electronic mail (E-mail). Simple Mail Transfer Protocol (SMTP). Internet Message Access Protocol (IMAP). Post Office Protocol (POP). Web services. World Wide Web (WWW). Hypertext Transfer Protocol (HTTP). Network Time Protocol (NTP). Simple Network Management Protocol (SMNP). Voice over Internet Protocol (VoIP). Instant messaging. Video conference. Network security. Firewall. Proxy server. Intrusion Detection Systems (IDS) and Intrusion Prevention Systems (IPS).</p> <p><b>Practice:</b>            During the exercises, students get practical knowledge about the use of active and passive network equipment and about the configuration of modern computer networks</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <ol style="list-style-type: none"> <li>1. A.S. Tanenbaum, D. J. Wetherall, Računarske mreže, Peto izdanje, Mikro knjiga, Beograd, 2013.</li> </ol> <p>Ancillary:</p> <ol style="list-style-type: none"> <li>1. M. Veinović, A. Jevremović, Uvod u računarske mreže, Univerzitet Singidunum, Beograd, 2008.</li> </ol>				
<b>Number of classes per week</b>	<b>Lectures: 2</b>	<b>Practical classes: 2</b>	<b>Study research work: /</b>	<b>Other forms of teaching: /</b>
<p><b>Teaching methods</b></p> <p>Theoretical teaching is conducted in classrooms, using modern didactic tools and methods. Practical exercises are performed in a specialized computer laboratory.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance	5	Written part of the final exam	20	
Exercise attendance	5	Oral part of the final exam	20	
Coloquium exam/s	40	.....		
Term paper	10			

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## 56. Professional Practice

<b>Study program:</b> Engineering Management				
<b>Course:</b> Professional Practice				
<b>Lecturer/s:</b> Nenad N. Milijić, Andjelka B. Stojanović				
<b>Status of the course:</b> Compulsory for all students.				
<b>ECTS:</b> 3				
<b>Prerequisite:</b> Enrolled in the eighth semester				
<b>Course goals:</b> Acquiring direct knowledge about the functioning of business systems, their organizational structure, the functioning of management and the achievement of business results. Adaptation of students to the environment functioning of the company for the sake of easier integration when establishing an employment relationship after graduation.				
<b>Learning outcomes:</b> Training students for the practical application of previously acquired theoretical and professional knowledge in solving problems concrete practical engineering-managerial problems in the company environment. Education of students with activities of the company in which he practices, as well as organizational structure, management structure, way of doing business and the role of the management engineer in the functioning of the company.				
<b>Course description:</b> It is formed for each student separately in agreement with the management of the company in which professional practice is carried out, in accordance with the needs of the profession for which the student is being trained. The professional practice program for each student is compiled by the teacher in charge - coordinator of professional practice in consultation with other engaged teachers at the engineering management study program. Creation of the diary and its public presentation.				
<b>Literature:</b> Recommended:  Ancillary:				
<b>Number of classes per week</b>	<b>Lectures: 0</b>	<b>Practical classes: 6</b>	<b>Study research work:</b>	<b>Other forms of teaching:</b>
<b>Teaching methods</b> Practical work - professional practice in a company or institution is carried out according to a pre-defined program task that consists in data collection - measurement and analysis with consultation with experts from the company where he performs professional practice and as a teacher-coordinator of professional practice. After completing professional practice, the student submits to the professional practice coordinator a written diary with a description of the activities and jobs he performed during the time professional practices. The teacher-coordinator of professional practice confirms that he is a student by his signature in the index successfully completed professional practice, which enables the student to certify the eighth semester with other signatures.				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance		Written part of the final exam		
Exercise attendance		Oral part of the final exam	<b>100</b>	
Coloquium exam/s		.....		
Term paper				

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## 57. Bachelor Thesis (Research Work)

<b>Study program: Engineering Management</b>				
<b>Course: Bachelor Thesis (Research Work)</b>				
<b>Lecturer/s:</b>				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS: 2</b>				
<b>Prerequisite:</b> Student should be enrolled in the seventh semester				
<b>Course goals:</b> The student analyzes a specific problem within the field of Engineering Management. He/she draws conclusions about possible solutions to the set challenges, which are formulated in the research plan, by applying the acquired knowledge and appropriate methodological frameworks.				
<b>Learning outcomes:</b> This course's provides the insight about the student's ability to independently carry out the research plan, which is defined in collaboration with the chosen mentor.				
<p><b>Course description:</b>            The topic of the final paper is determined by the mentor's proposal. A mentor can be any teacher who participated in the teaching process within the third and fourth year of basic academic studies. The topic of the work should be clearly defined, content-wise (in terms of volume), measured, and aligned with the student's ability to process the given topic at the appropriate professional level. By analyzing the relevant literature, the student becomes familiar with the methods of solving similar tasks and with the results achieved so far in the area of the subject of his final thesis.</p> <p>It is necessary for the candidate, in agreement with the mentor, to precisely define the following: research problem, research subject, social and scientific goals, research hypotheses, research methods, and method of data processing and analysis.</p> <p>The implementation of the defined research plan is carried out through the following stages: data collection, processing of the collected data, data analysis with the help of appropriate methods and techniques, and the formation of a final report on the obtained research results.</p>				
<p><b>Literature:</b>            Recommended:            Available library literature, search of scientific databases and services via KOBSON.</p>				
<b>Number of classes per week</b>	<b>Lectures:0</b>	<b>Practical classes: 0</b>	<b>Study research work: 2</b>	<b>Other forms of teaching: 1</b>
<p><b>Teaching methods</b>            During the research, the mentor gives the student the necessary instructions and also refers him to relevant professional literature in order to produce a high-quality final paper. If necessary, the student conducts measurements, tests, surveys, and other research within the scope of the assigned topic, as specified in the research plan.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance		Written part of the final exam		
Exercise attendance		Oral part of the final exam	100	
Coloquium exam/s		.....		
Term paper				

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## 58. Bachelor Thesis (Completing and Defending)

<b>Study program: Engineering Management</b>				
<b>Course: Bachelor Thesis (Completing and Defending)</b>				
<b>Lecturer/s:</b>				
<b>Status of the course:</b> Compulsory for all students				
<b>ECTS: 3</b>				
<b>Prerequisite:</b> All exams successfully passed and professional practice realized				
<p><b>Course goals:</b> The goal of the final paper preparation and final examination is that the student should prove his/her ability to engage theoretical knowledge and adequate skills, developed through the courses, in solving some real time engineering practice challenges, on the BSc level. This is also additional training for the student, which will increase his/her potential for practical application of gained knowledge in future business activities in the professional working environment.</p>				
<p><b>Learning outcomes:</b> During the preparation of the final paper, the student develops his academic abilities, improves his knowledge in a certain area and applies the appropriate methods, techniques and tools of scientific research. With the final paper, the student demonstrates his ability to solve practical problems and the skills of public presentation of the results of his research.</p>				
<p><b>Course description:</b></p> <p>The mentor for preparation and examination of the final paper is to be selected by the student, among the professors engaged at the BSc courses on the 3rd and the 4th year, and based on his/her research field and teaching scope. The subject cannot be from the field of following subjects: English language, Business legislative and Professional practice.</p> <p>After accepting to become a mentor, professor will have to provide consultative supervision, engagement and help during the students' independent work on solving the research problem and preparation of the final text of the final paper. Through his/her work on the final paper, student applies some of the tools for qualitative and/or quantitative analysis and decision making, which will additionally emphasize gained competences.</p> <p>After finishing the text of the final paper, and approval by the mentor, student will have to present and defend his/her final paper in front of the examiners commission, consisted of at list three professors.</p> <p>The subject of the final work is to be defined for each student individually, as the unique research task, from all above defined fields of engineering management courses.</p> <p>After conducted research, student is preparing the final paper in the format concluded with following chapters: introduction, theoretical part, experimental part, results and discussions, conclusions, literature. After finishing the work on the text of the final paper, and receiving positive opinion of the mentor, student is submitting three copies to the students office of Technical faculty in Bor. After that, public presentation and examination, in front of the three member commission, can be arranged.</p>				
<p><b>Literature:</b></p> <p>Recommended:</p> <p>Ancillary:</p>				
<b>Number of classes per week</b>	<b>Lectures: 0</b>	<b>Practical classes: 0</b>	<b>Study research work: 0</b>	<b>Other forms of teaching: 3</b>
<p><b>Teaching methods</b></p> <p>Consultations with selected mentor and defining the research scope. Defining the research subject. Collecting theoretical data and data analysis. Collecting the data for the practical research work. Collecting the data and the data analysis in consultations with research target groups, experts from the companies, experimental measurements, etc. Analysis of obtained research results and preparing the final paper. Upon completion of the research work, student prepares the text of the final paper and submits it to mentor. Improving and modifying the final text of the thesis, based on mentors' suggestions, should be completed before submitting the copies to the students office.</p>				
<b>Knowledge evaluation (maximum 100 points)</b>				
<b>Pre-examination obligations</b>	Points	<b>Final exam</b>	Points	
Lecture attendance		Written part of the final exam		
Exercise attendance		Oral part of the final exam	100	

Coloquium exam/s		.....	
Term paper			

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