# Syllabus of the course in the professional undergraduate study of Informatics

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| Course Holder | dr. sc. socio Davor Širola, prof. struč. Stud. – full-time study | | | |
| The name of the college | BUSINESS COMMUNICATION AND COLLABORATION | | | |
| Study program | Professional Undergraduate Study of Informatics | | | |
| Status College | Binding | | | |
| Year | 1. | | Semester | wintry |
| Point value and method of teaching | ECTS coefficient of student workload | | | 4 |
| Broj sati (P+V+S) | | | 1+2+0 |
| 1. COURSE DESCRIPTION | | | | |
| The course analyzes the rules of written and spoken business communication. Students are introduced to the phases of teamwork and techniques for exchanging feedback, and distinguish qualitative differences and the purpose of dialogue and discussion. Within this course, students learn about time management, stress, conflict, and team management techniques. 9999 | | | | |
| 1. Objectives of the course | | | | |
| Adopt the rules for the successful preparation of written and spoken communication, as well as the presentation and defense of opinions and attitudes in business communication. Valorize teamwork and feedback exchange, and understand the purpose of dialogue and discussion. Know the techniques and methodology of presenting content. Understand the need for techniques that empower time and stress management. Identify the causes of conflict and ways to manage conflicts. | | | | |
| 1. Requirements for enrolment in the course | | | | |
| No conditions | | | | |
| 1. Expected learning outcomes for the course | | | | |
| * Organize the content of the presentation in accordance with the concept, main ideas and academic argumentation * Use information and communication technology tools in designing a presentation in a creative way * Prepare a business letter, conversation and meeting with the selection of appropriate technology * Critically judge communication techniques, styles, and methods * Identify the causes and causes of conflict * Manage the conflict resolution process | | | | |
| 1. Types of teaching | | ☒ Lectures  Seminars and workshops  ☒ Exercises  Distance education  Field Teaching | | ☒ Independent tasks  ☒ Multimedia & Network  Laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Comments:/ | | | | |
| 1. Student obligations | | | | |
| Fulfill the obligations prescribed by the Study Regulations and the Assessment Regulations. The condition for taking the exam is the creation of a presentation (according to the teacher's given scope and structure), and the creation of a project on the same topic. | | | | |
| 1. Assessment and evaluation of students' work during classes and at the final exam | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Presentation | Colloquia | Project | Exercises | Prague | Max | | OUTCOME 1 | 20 % | 5 % |  | 3 % | 14 % | 28 % | | OUTCOME 2 | 10 % | 5 % |  | 3 % | 9 % | 18 % | | OUTCOME 3 | 10 % |  | 5 % |  | 7,5 % | 15 % | | OUTCOME 4 |  | 4 % | 10 % | 3 % | 8,5 % | 17 % | | OUTCOME 5 |  | 8 % |  | 3 % | 5,5 % | 11 % | | OUTCOME 6 |  | 8 % |  | 3 % | 5,5 % | 11 % | | Share in ECTS | 1,6 | 1,2 | 0,6 | 0,6 |  |  | | Altogether | 40 % | 30 % | 15 % | 15 % | 50 % | 100 % |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  Assessment during the exam period:   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Max | | OUTCOME 1 | 8 % | 20 % | 28 % | | OUTCOME 2 | 8 % | 10 % | 28 % | | OUTCOME 3 | 5 % | 10 % | 15 % | | OUTCOME 4 | 17 % |  | 7 % | | OUTCOME 5 | 11 % |  | 11 % | | OUTCOME 6 | 11 % |  | 11 % | | Share in ECTS | 2,4 | 1,6 |  | | Altogether | 60 % | 40 % | 100 % |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | |
| 1. Mandatory literature | | | | |
| Engleberg, I.N. i Daly, J.A.: Think Public Speaking, Pearson Higher Education, 2013. | | | | |
| 1. Whetten, D.A. i Cameron, K.S.: Developing Management Skills, Pearson Education, Ninth Edition, 2016. 2. Robbins, S.P. i Judge, T.A.: Essentials of Organizational Behavior, Pearson, Fifteenth Edition 2022. 3. Lamza Maronić, M. and Glavaš, J.: Business Communication, Studio HS internet d.o.o., Osijek, Faculty of Economics in Osijek, 2008. <http://www.efos.unios.hr/jglavas/wp-content/uploads/sites/50/2021/03/Poslovno-komuniciranje_KNJIGA.pdf> 4. Bovée, C.L. i Thill, J.V.: Business Communication Today, Pearson, Fifteenth Edition, 2021. | | | | |
| 1. Dopus Literature | | | | |
| 1. Zarefsky, D. (2017). Public Speaking Strategies For Success, Eight Edition, Pearson Education 2. Tudor, G., Rijavec, M., Zarevski, P.: Managerial Efficiency 360° - A Good Manager Himself, MEP Consult, Zagreb, 2009 (selected chapters) 3. Srića, V.: All the Secrets of Creativity, How to Manage Innovation and Achieve Success, Algoritam, Zagreb, 2017 (selected chapters) 4. Buchanan, D. A. i Huczynski, A. A. (2020). Organizational Behaviour, 10th Edition, Pearson Education | | | | |
| 10. Methods of quality monitoring that ensure the acquisition of output knowledge, skills and competences | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | |

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| |  |  |  | | --- | --- | --- | | Course holder | **Doc. dr. sc. Socio. Prof. Ozren Rafajac, prof. struč. Stud.   - part-time study** | | | **Nomenclature** | **BUSINESS COMMUNICATION AND COOPERATION - Assoc. Prof.** | | | **Study program** | **Professional Undergraduate Study of Informatics** | | | **Item Status** | **Binding** | | | **Year / Semester** | **1 / I.** | | | **Point value and method of teaching** | **ECTS coefficient of student workload** | **4** | | **Broj sati (P+V+S)** | **1+2+0** |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 1. **COURSE DESCRIPTION** | | | | | | | | | | | | The course analyzes the rules of written and spoken business communication. Students are introduced to the phases of teamwork and techniques for exchanging feedback, as well as the qualitative characteristics of dialogue and discussion. Within this course, students learn about time management, stress, conflict, and team management techniques. | | | | | | | | | | | | 1. **Course objectives** | | | | | | | | | | | | Adopt the rules for the successful preparation of written and spoken communication, as well as the presentation and defense of opinions and attitudes in business communication. Valorize teamwork and feedback exchange, and understand the purpose of dialogue and discussion. Know the techniques and methodology of presenting content and conducting business meetings.  Understand the need for techniques that empower time and stress management. Identify conflict patterns and ways to manage conflicts. | | | | | | | | | | | | 1. **Course Enrolment Requirements** | | | | | | | | | | | | No conditions | | | | | | | | | | | | 1. **Expected learning outcomes for the course** | | | | | | | | | | | | 1. Organize the content of the presentation in accordance with the concept, main ideas and academic argumentation. 2. Use information and communication technology tools in shaping the presentation in a creative way. 3. Prepare a business letter, conversation and meeting with the selection of appropriate technology. 4. Critically judge communication techniques, styles and methods. 5. Identify the causes and causes of conflict 6. Manage the conflict resolution process | | | | | | | | | | | | 1. **Course content** | | | | | | | | | | | | * **Business Presentation Rules - 8 hours:** Verbal and non-verbal communication; Assertiveness and shyness in communication; Development of self-awareness; Instructions for formatting the presentation; Analysis of best practices; Challenges of digital communication; The impact of PR on the success of the organization; * **IT tools for creative presentation – 6 hours:** Introduction to tools for creative presentation; Creation of presentations and presentation content; * **Preparation of a business letter, conversation and meeting with the selection of suitable technology - 6 hours:** Rules for creating a business letter; Preparation of a business interview and meeting; Conducting a business meeting; Advantages and disadvantages of conducting online meetings over in-person meetings; * **Communication Techniques, Styles and Methods - 9 hours:** Communication Styles; Correcting the communication style; Active listening and asking in-depth questions; Building relationships through positive and well-intentioned communication;  Dialogue and discussion;  Empowerment of other people and motivation;  The SDI method (eng. Strength Deployment Inventory); * **Causes and Causes of Organizational Conflicts - 8 hours:** Characteristics and Problems of Teamwork; Definition of conflict; Causes of conflict; Types of conflicts; Stages of conflict; Pathologies of leadership; * **Managing the Conflict Resolution Process - 8 hours**: Choosing a style to manage the conflict resolution process; Analysis of various case studies in conflict management;  Negotiation strategies and tactics; | | | | | | | | | | | | 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  ☐Distance education  ☐Field Teaching | | | | | **☒Independent tasks**  **☒Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | 1. **Comments** | | | | | | | | | | | | 1. **Student obligations** | | | | | | | | | | | | Fulfill the obligations prescribed by the Study Regulations and the Assessment Regulations.  Students who take the full exam or partial exam are required to submit a project (outcome 3) and a presentation (outcome 2) to the teacher's e-mail address or via the assignment module on the Merlin course page no later than the scheduled date and date of the exam. | | | | | | | | | | | |  | | | | | | | | | | | | 1. **Monitoring student work** | | | | | | | | | | | | Attendance  teaching |  | Teaching activity | | 0,8 | Seminar paper | |  | Experimental work | |  |  | | Written exam |  | Viva voce | |  | Assay | |  | Research | |  |  | | Project | 0,8 | Continuous Knowledge Assessment | | 3,2 | Report | |  | Practical work | |  |  | | Portfolio |  |  | |  |  | |  |  | |  |  | | 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | |  | | Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Pisani ispit 1** | **Pisani ispit 2** | **Presentation** | **Project** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | 20% |  |  |  | 0,8 | 10 | 20 | | **OUTCOME 2** |  |  | 20% |  | 0,8 | 10 | 20 | | **OUTCOME 3** |  |  |  | 20% | 0,8 | 10 | 20 | | **OUTCOME 4** | 20% |  |  |  | 0,8 | 10 | 20 | | **OUTCOME 5** |  | 10% |  |  | 0,4 | 5 | 10 | | **OUTCOME 6** |  | 10% |  |  | 0,4 | 10 | 10 | | **Share in ECTS** | **1,6** | **0,8** | **0,8** | **0,8** | **-** |  |  | | **Altogether** | **40** | **40** | **10** | **10** | **100%** | **50 %** | **100 %** |    A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | 17 | 3 | 0,8 | 20 | | **OUTCOME 2** | 17 | 3 | 0,8 | 20 | | **OUTCOME 3** | 17 | 3 | 0,8 | 20 | | **OUTCOME 4** | 17 | 3 | 0,4 | 20 | | **OUTCOME 5** | 8 | 2 | 0,4 | 10 | | **OUTCOME 6** | 8 | 2 | 0,4 | 10 | | **Share in ECTS** | 3,36 | **0,64** |  |  | | **Altogether** | **84** | **16** | **100%** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | | | | |  | | 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | |  | | Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | |  | | Title | | | | | | Number of copies | | | Number of students | |  | | 1. Bovee, C. L., Thill, J. V. (2012). Contemporary Business Communication, Zagreb : Mate : Zagreb School of Economics and Management | | | | | | 4 | | |  | |  | | 1. Fox, R. (2001). Business Communication, Zagreb : Croatian University Publishing : Public Open University | | | | | |  | | |  | |  | | 1. Lamza Maronić, M., Glavaš, J. (2008). Business Communication, Studio HS internet d.o.o., Osijek, Faculty of Economics in Osijek, Osijek <http://www.efos.unios.hr/jglavas/wp-content/uploads/sites/50/2021/03/Poslovno-komuniciranje_KNJIGA.pdf> | | | | | | E-edition | | |  | |  | | 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | |  | |

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| **Course holder** | **Dr.sc. Sabrina Šuman, prof. struč. stud.**  **Maria Krajči- assistant** | |
| **Nomenclature** | **Procedural and Modular Programming - Regular** | |
| **Study program** | **Undergraduate Professional Study of Computer Science** | |
| **Item Status** | **Compulsory** | |
| **Year / Semester** | **1/1** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **6** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| 1. **COURSE DESCRIPTION** | | | | | | | | | | | |
| The course deals with the basic concepts necessary for mastering procedural and modular programming (algorithm, data structure, procedures and functions, modules, files, finding and correcting errors).  Students will develop computer programs in the selected programming language by applying basic concepts. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Acquire competencies to work with various algorithmic and data structures and their implementation in the chosen programming language.  Structure a computer program by applying procedures, functions and modules.  Save data in text and binary file.  Use tools to find and correct errors. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Recognize the basic parts of the algorithm, concretize them to the level of a procedural algorithm and write them down using pseudocode or activity diagrams. 2. Select the appropriate data types of the given problem and the appropriate aggregation mechanisms for efficient storage of input data and implement the selected data organization in the given imperative programming language. 3. Adapt and optimize the algorithmic solution given by the pseudocode or activity diagram to the specifics of the programming constructs (selection, iteration...) of the given imperative programming language. 4. Select parts of the algorithm that can be separated into separate units and executed as subroutines and implemented in a given imperative programming language. 5. Build your own libraries of subroutines with frequently used subroutines and include them in the programs as needed. 6. Select the appropriate record structure for storing data in files and implement it in a given imperative programming language. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Algorithm * Algorithm definition * Basic properties of the algorithm * Ways to display the algorithm * Examples of algorithms * Computer program * Definition of a computer program * Syntax and semantics of a computer program * Source and executable code of a computer program * Interpreter and compiler * Four Approaches to Programming (Procedural, Object-Oriented, Functional, and Logical) * Types of computer programs (system, programming, and application) * The life cycle of computer program development * Data structure * Definition of variable and data type * Relationship between variable, data type and computer memory * Variable declaration * Assign values to variables * Simple and complex data types * Static and dynamic data types. * Variable properties (identifier, address, value, data type, duration, range) * Variables in the selected programming language * Basic algorithmic structures * Line (definition, properties, example in pseudo code and block diagram) * Branched (definition, properties, example in pseudo code and block diagram) * Unconditional Jump (Definition, Properties, Example in Pseudo Code and Block Diagram) * Cyclic (definition, properties, example in pseudo code and block diagram) * Algorithmic structures in a selected programming language * File (text and binary) * File Definition * File types (text and binary) and their basic properties * Work with files in the selected programming language * Procedure and function (receiving and returning data, availability of procedures) * Definition of Procedure and Function * Basic parts of a procedure and function (return type, name, arguments, body) * Procedures and functions in the selected programming language * Modules (module development, integration of modules into a computer program) * Module Definition * Basic parts of the module * Modules in the selected programming language * Finding and correcting errors in a computer program. * Syntactic and semantic errors. * Commands to find and fix errors | | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒Lectures  ☐Seminars and workshops  ☒Exercises  ☒Distance education  ☐Field Teaching | | | | ☒Independent tasks  ☒Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| 1. Create all planned activities in class 2. Access continuous checks | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | |
| Attending classes | 3 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  | |
| Written exam | 1 | Viva voce | | |  | Assay | |  | | Research |  | |
| Project |  | Continuous Knowledge Assessment | | |  | Report | |  | | Practical work | 2 | |
|  |  |  | | |  |  | |  | |  |  | |
| Portfolio |  |  | | |  |  | |  | |  |  | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written examination** | **Practical tasks** | **Task** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | 10% |  |  | 0,6 | **5%** | **10%** | | **OUTCOME 2** | 5% | 10% |  | 0,9 | **7,5%** | **15%** | | **OUTCOME 3** | 10% | 15% | 5% | 1,8 | **15%** | **30%** | | **OUTCOME 4** | 5% | 15% | 5% | 1,5 | **12,5%** | **25%** | | **OUTCOME 5** |  | 10% |  | 0,6 | **5%** | **10%** | | **OUTCOME 6** |  | 10% |  | 0,6 | **5%** | **10%** | | **Share in ECTS** | **1,8** | **3,6** | **0,6** | **6** | **-** | **-** | | **Altogether** | **30 %** | **60%** | **10%** | **100%** | **50%** | **100%** |      |  |  | | --- | --- | |  | Handing over the homework | |  | Practical theoretical test 1 | |  | Practical Theoretical Examination 2 | |  | Practical Theoretical Examination 3 |           **A written test consisting of practical tasks is also written during the exam period.**    A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.              Assessment during the exam period:   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | 5% | 5% | **10%** | | **OUTCOME 2** | 5% | 5% | **10%** | | **OUTCOME 3** | 15% | 5% | **20%** | | **OUTCOME 4** | 20% | 5% | **25%** | | **OUTCOME 5** | 15% | 5% | **20%** | | **OUTCOME 6** | 10% | 5% | **15%** | | **Share in ECTS** | **4,2** | **1,8** | **-** | | **Altogether** | **80%** | **20%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Jakupović, A.; Šuman, S.: Basics of Programming, University of Applied Sciences of Rijeka, Rijeka, 2014. | | | | e-edition | | | | |  | | |
| Dovedan Han, Zdravko: Let's Speak Python, Vlasta naklada, 2021. | | | |  | | | | |  | | |
| Authorized Lectures | | | | e-edition | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Python Tutorial Library, <https://www.w3schools.in/category/python-tutorial/>, 1.3.2022. 2. Python Tutorial, <https://www.javatpoint.com/python-tutorial>, 1.3.2022. 3. Python Tutorial, <https://www.tutorialspoint.com/python/index.htm>, 1.3.2022. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Dr.sc. Sabrina Šuman, prof. struč. stud.** | |
| **Nomenclature** | **Procedural and Modular Programming** | |
| **Study program** | **Undergraduate Professional Study of Computer Science** | |
| **Item Status** | **Compulsory** | |
| **Year / Semester** | **1/1** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **6** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| * 1. **COURSE DESCRIPTION** | | | | | | | | | | | |
| The course deals with the basic concepts necessary for mastering procedural and modular programming (algorithm, data structure, procedures and functions, modules, files, finding and correcting errors).  Students will develop computer programs in the selected programming language by applying basic concepts. | | | | | | | | | | | |
| * 1. **Course objectives** | | | | | | | | | | | |
| Acquire competencies to work with various algorithmic and data structures and their implementation in the chosen programming language.  Structure a computer program by applying procedures, functions and modules.  Save data in text and binary file.  Use tools to find and correct errors. | | | | | | | | | | | |
| * 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | |
| * 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Recognize the basic parts of the algorithm, concretize them to the level of a procedural algorithm and write them down using pseudocode or activity diagrams. 2. Select the appropriate data types of the given problem and the appropriate aggregation mechanisms for efficient storage of input data and implement the selected data organization in the given imperative programming language. 3. Adapt and optimize the algorithmic solution given by the pseudocode or activity diagram to the specifics of the programming constructs (selection, iteration...) of the given imperative programming language. 4. Select parts of the algorithm that can be separated into separate units and executed as subroutines and implemented in a given imperative programming language. 5. Build your own libraries of subroutines with frequently used subroutines and include them in the programs as needed. 6. Select the appropriate record structure for storing data in files and implement it in a given imperative programming language. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Algorithm * Algorithm definition * Basic properties of the algorithm * Ways to display the algorithm * Examples of algorithms * Computer program * Definition of a computer program * Syntax and semantics of a computer program * Source and executable code of a computer program * Interpreter and compiler * Four Approaches to Programming (Procedural, Object-Oriented, Functional, and Logical) * Types of computer programs (system, programming, and application) * The life cycle of computer program development * Data structure * Definition of variable and data type * Relationship between variable, data type and computer memory * Variable declaration * Assign values to variables * Simple and complex data types * Static and dynamic data types. * Variable properties (identifier, address, value, data type, duration, range) * Variables in the selected programming language * Basic algorithmic structures * Line (definition, properties, example in pseudo code and block diagram) * Branched (definition, properties, example in pseudo code and block diagram) * Unconditional Jump (Definition, Properties, Example in Pseudo Code and Block Diagram) * Cyclic (definition, properties, example in pseudo code and block diagram) * Algorithmic structures in a selected programming language * File (text and binary) * File Definition * File types (text and binary) and their basic properties * Work with files in the selected programming language * Procedure and function (receiving and returning data, availability of procedures) * Definition of Procedure and Function * Basic parts of a procedure and function (return type, name, arguments, body) * Procedures and functions in the selected programming language * Modules (module development, integration of modules into a computer program) * Module Definition * Basic parts of the module * Modules in the selected programming language * Finding and correcting errors in a computer program. * Syntactic and semantic errors. * Commands to find and fix errors | | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒Lectures  ☐Seminars and workshops  ☒Exercises  ☒Distance education  ☐Field Teaching | | | | ☒Independent tasks  ☒Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| 1. Create all planned activities in class 2. Access continuous checks | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | |
| Attending classes | 3 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam | 1 | Viva voce | | |  | Assay | |  | | Research |  |
| Project |  | Continuous Knowledge Assessment | | |  | Report | |  | | Practical work | 2 |
|  |  |  | | |  |  | |  | |  |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written examination** | **Practical tasks** | **Task** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | 10% |  |  | 0,6 | **5%** | **10%** | | **OUTCOME 2** | 5% | 10% |  | 0,9 | **7,5%** | **15%** | | **OUTCOME 3** | 10% | 15% | 5% | 1,8 | **15%** | **30%** | | **OUTCOME 4** | 5% | 15% | 5% | 1,5 | **12,5%** | **25%** | | **OUTCOME 5** |  | 10% |  | 0,6 | **5%** | **10%** | | **OUTCOME 6** |  | 10% |  | 0,6 | **5%** | **10%** | | **Share in ECTS** | **1,8** | **3,6** | **0,6** | **6** | **-** | **-** | | **Altogether** | **30 %** | **60%** | **10%** | **100%** | **50%** | **100%** |      |  |  | | --- | --- | |  | Handing over the homework | |  | Practical theoretical test 1 | |  | Practical Theoretical Examination 2 | |  | Practical Theoretical Examination 3 |   **A written test consisting of practical tasks is also written during the exam period.**    A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.    Assessment during the exam period:   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | 5% | 5% | **10%** | | **OUTCOME 2** | 5% | 5% | **10%** | | **OUTCOME 3** | 15% | 5% | **20%** | | **OUTCOME 4** | 20% | 5% | **25%** | | **OUTCOME 5** | 15% | 5% | **20%** | | **OUTCOME 6** | 10% | 5% | **15%** | | **Share in ECTS** | **4,2** | **1,8** | **-** | | **Altogether** | **80%** | **20%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Jakupović, A.; Šuman, S.: Basics of Programming, University of Applied Sciences of Rijeka, Rijeka, 2014. | | | | e-edition | | | | |  | | |
| Dovedan Han, Zdravko: Let's Speak Python, Vlasta naklada, 2021. | | | |  | | | | |  | | |
| Authorized Lectures | | | | e-edition | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Python Tutorial Library, <https://www.w3schools.in/category/python-tutorial/>, 1.3.2022. 2. Python Tutorial, <https://www.javatpoint.com/python-tutorial>, 1.3.2022. 3. Python Tutorial, <https://www.tutorialspoint.com/python/index.htm>, 1.3.2022. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Assoc. Prof. Dr. Sc. Socio. Elena Krelja Kurelović, prof. struč. Stud.** | |
| **Nomenclature** | **BUSINESS PROCESSES IN ORGANIZATIONS.** | |
| **Study program** | **Undergraduate Professional Study of Computer Science** | |
| **Item Status** | **Compulsory** | |
| **Year / Semester** | **1/1** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **4** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| * 1. **COURSE DESCRIPTION** | | | | | | | | | |
| Acquire basic competencies for the formal description of business processes and their data models. Gain insight into the basic business processes and data models of different business organizations. | | | | | | | | | |
| * 1. **Course objectives** | | | | | | | | | |
| The objectives of this course are to get to know the information flows of business processes in different organizations so that they can be described and support and automation can be designed. | | | | | | | | | |
| * 1. **Course Enrolment Requirements** | | | | | | | | | |
| There are no conditions. | | | | | | | | | |
| * 1. **Expected learning outcomes for the course** | | | | | | | | | |
| 1. Determine business logic and algorithms for the performance of typical business processes in different organizations.  2. Using appropriate methods and techniques, formally describe the basic business processes and algorithms for their execution.  3. Identify information flows that connect business processes into logical business technology.  4. Formulate support, automation and improvement options based on the application of ICT in a specific business area, (production, logistics, healthcare, financial institutions, etc.) - ERP  5. Design a business process model and a data model for a given business area. | | | | | | | | | |
| * 1. **Course content** | | | | | | | | | |
| * Business organization and information system   + Business organization, information system, relationship between the information system and the business organization, functions of the information system   + Business process environment (business activity, business application software, functional area, activity, operation, business process, data model) * Methods of formal presentation of business processes and algorithms for their execution   + Process modeling using the data flow diagram method   + Process modeling using the BPMN method   + Process modeling with UML (Usage Diagram and Activity Diagram) * Methods of formal presentation of the data model of the selected business area (EVA, UML)   + Data modeling using the Entities-Links-Attributes method   + Data Modeling with UML (Class Diagram) * Basic processes in selected business areas   + Examples of business processes supported in the selected business application software * ERP (invited - guest lecture) | | | | | | | | | |
| * 1. **Types of teaching** | | | ☒ Lectures  Seminars and workshops  ☒ Exercises  ☒ Distance education  Field Teaching | | | ☒ Independent tasks  ☒ Multimedia & Network  Laboratory  ☒ Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| * 1. **Comments** | | | | | | | | | |
| * 1. **Student obligations** | | | | | | | | | |
| 1. Create all planned activities in class 2. Create and defend the project 3. Access continuous checks | | | | | | | | | |
| * 1. **Monitoring student work** | | | | | | | | | |
| Attending classes | 2 | Teaching activity | |  | Seminar paper | |  | Experimental work |  |
| Written exam | 0,5 | Viva voce | | 1 | Essay | |  | Research |  |
| Project | 0,5 | Continuous Knowledge Assessment | |  | Report | |  | Practical work |  |
| Portfolio |  |  | |  |  | |  |  |  |
|  | | | | | | | | | |
| * 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Practical tasks | Project defense | Share of ECTS | Prague | Max | | OUTCOME 1 | 5% | 10% |  | **0,6** | **7,5%** | **15%** | | OUTCOME 2 | 5% | 15% |  | **0,8** | **10%** | **20%** | | OUTCOME 3 | 5% | 10% |  | **0,6** | **7,5%** | **15%** | | OUTCOME 4 | 5% | 5% | 10% | **0,8** | **10%** | **20%** | | OUTCOME 5 |  | 15% | 15% | **1,2** | **15%** | **30%** | | Share in ECTS | **1** | **2** | **1** | **4** | **-** | **-** | | Altogether | **25 %** | **50%** | **25%** | **100%** | **50%** | **100%** |   **The condition for taking the full exam is a project that is defended on the exam period (oral exam). A written test consisting of practical tasks is also written during the exam period.**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Max | | OUTCOME 1 | 15% |  | **15%** | | OUTCOME 2 | 20% |  | **20%** | | OUTCOME 3 | 15% |  | **15%** | | OUTCOME 4 | 10% | 10% | **20%** | | OUTCOME 5 | 15% | 15% | **30%** | | Share in ECTS | **3** | **1** | **-** | | Altogether | **75%** | **25%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | | | | | | |
| * 1. **Mandatory literature** | | | | | | | | | |
| Klaus-Dieter Gronwald: Integrated Business Information Systems: A Holistic View of the Linked Business Process Chain ERP-SCM-CRM-BI-Big Data, Springer, 2020.  Paul Bocij: Business Information Systems: Technology, Development and Management for the  Pavlić, Mile, Jakupović, Alen, Čandrlić, Sanja: Process Modeling, Department of Informatics, University of Rijeka, Rijeka, 2014.  Pavlić, M., Database Design, Department of Informatics, University of Rijeka, Rijeka, 2011.  Pavlić, M., Development of Information Systems - Design, Practical Experience, Methodology, Znak, Zagreb, 1996  Authorized Lectures | | | | | | | | | |
| * 1. **Dopus Literature** | | | | | | | | | |
| 1. Brumec, J., Brumec, S., Business Process Modeling, Školska knjiga, Zagreb, 2018. 2. Management Information System Tutorial, <https://www.tutorialspoint.com/management_information_system/index.htm>, 3.6.2022. 3. MIS Tutorial | Online Management Information System Training, <https://www.guru99.com/mis-tutorial.html>, 3.6.2022. 4. Management Information System (MIS) Tutorial, <https://www.includehelp.com/MIS/>, 3.6.2022. | | | | | | | | | |
| * 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | |

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| **Course holder** | | **doc. Dr. sc. human. Tatjana Schepp, Prof. Schlag. Stud.** | | |
| **Nomenclature** | | **ENGLISH FOR COMPUTER SCIENTISTS** | | |
| **Study program** | | **Professional Undergraduate Study of Informatics** | | |
| **Item Status** | | **Required** | | |
| **Year / Semester** | | **1/1** | | |
| **Point value and method of teaching** | | **ECTS coefficient of student workload** | | **4** |
| **Broj sati (P+V+S)** | | **2+2+0** |
| * 1. **Course description** | | | | |
| The course includes work on professional texts in which basic terminology in the field of information sciences is processed, such as computer structure, computer operation, data storage and processing, computer software, operating systems, e-business. | | | | |
| * 1. **Course objectives** | | | | |
| To introduce students to the basic professional terminology and lexical and grammatical specific features of the English language in the field of information sciences. Develop reading, listening, and oral and written communication skills in English. | | | | |
| * 1. **Course Enrolment Requirements** | | | | |
| There are no conditions. | | | | |
| * 1. **Expected learning outcomes for the course** | | | | |
| Understand and explain the content of professional texts in the field of computer structure, computer operation, data storage and processing, operating systems, e-business.  Use the acquired professional vocabulary in a new context.  Explain grammatical structures and rules (active and passive sentences, verb tenses, modal verbs) in the context of professional texts.  Use grammatical structures in the new context of professional content.  Understand the main ideas of standard speech on topics in the field of computer science.  Write a summary of a text on a well-known topic in the field of computer science.  Prepare and hold an oral presentation on a well-known topic in the field of information sciences and participate in the discussion after the presentation. | | | | |
| * 1. **Course content** | | | | |
| * Computers today * Input/output devices * Storage devices * Basic software * The Internet/Email * Creative software * Graphics and design * Operating systems * E-commerce * Present and Past Tenses * Modal Verbs * Active vs Passive Voice * Relative Pronouns/Clauses * Comparison of Adjectives * Collocations * Word Formation - Compounds | | | | |
| * 1. **Types of teaching** | **xLectures**  ☐Seminars and workshops  **xExercises**  ☐Distance education  ☐Field Teaching | | **xStandalone tasks**  **☐Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| * 1. **Comments** | | | | |
| Student obligations  Students are obliged to attend classes regularly, actively participate in their implementation and create assignments. They also have the obligation to pass the 5th outcome (presentation) during classes, i.e. before going to the exam periods. Passing the 5th outcome is a condition for attending the exam period, where students can take a maximum of two outcomes out of a total of 4 outcomes that are taken in writing. In exceptional cases (e.g. holding the exam online), the written verification of these four outcomes may be replaced by an oral examination. | | | | |
| * 1. **Monitoring student work** | | | | |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Colloquij 1** | **Colloquia**  **2** | **Exposure** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **20%** |  |  | **0,75** | **10%** | **20 %** | | **OUTCOME 2** | **20%** |  |  | **0,75** | **10%** | **20 %** | | **OUTCOME 3** |  | **20%** |  | **0,75** | **10%** | **20 %** | | **OUTCOME 4** |  | **20%** |  | **0,75** | **10%** | **20 %** | | **OUTCOME 5** |  |  | **20%** | **1** | **10%** | **20%** | | **Share in ECTS** | **1,25** | **1,25** | **0,50** | **3** |  |  | | **Altogether** | **40 %** | **40%** | **20%** | **100%** | **50 %** | **100 %** | | | | | |
| * 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | **20%** |  | **0,75** | **20%** | | **OUTCOME 2** | **20%** |  | **0.75** | **20%** | | **OUTCOME 3** | **20%** |  | **0,75** | **20%** | | **OUTCOME 4** | **20%** |  | **0,75** | **20%** | | **OUTCOME 5** |  | **20%** | **1** | **20%** | | **Share in ECTS** | **2,5** | **0,50** |  |  | | **Altogether** | **2,5** | **0,50** | **3** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | |
| * 1. **Mandatory literature** | | | | |
| 1. S.R. Esteras, Infotech, English for Computer Users, Cambridge University  Press, 5th edition (dio)  2. Esteras, S. R., Fabré, E. M., *Professional English in Use ICT*,  Cambridge University Press, 2007 (dio)  3. E. H. Glendinning, J. McEwan, *Oxford English for Information Technology*,  Oxford University Press, 2014. (dio) | | | | |
| * 1. Dopus Literature | | | | |
| 1. Demetriades, D., Information Technology, OUP, 2003  2. Emmerson, P., Business Grammar Builder, MacMillan, 2010.  3. Kiš, M., School Information Dictionary, Zagreb, Naklada Ljevak, 2003.  4. Bujas, Ž., The Great Croatian-English Dictionary, Globus, Zagreb, 2011. | | | | |
| * 1. Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | |

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| **Course holder** | | | **Dr. sc. socio. Ida Panev, v. pred.**  **Bruno Polonijo, Assistant**  **Suzana Škarica Stupičić, assistant** | | | | | | | | | |
| **Nomenclature** | | | **INTRODUCTION TO INFORMATION AND COMMUNICATION TECHNOLOGIES** | | | | | | | | | |
| **Study program** | | | **Professional Undergraduate Study of Informatics** | | | | | | | | | |
| **Item Status** | | | **Binding** | | | | | | | | | |
| **Year / Semester** | | | **1. / I.** | | | | | | | | | |
| **Point value and method of teaching** | | | **ECTS coefficient of student workload** | | | | | | | **6** | | |
| **Broj sati (P+V+S)** | | | | | | | **2+2+1** | | |
| 1. **Course description** | | | | | | | | | | | | |
| The course contributes to the acquisition of knowledge in the basic areas of information and communication technologies. It trains students for the application of Internet services, as well as for the advanced use of word processing programs and for the creation of spreadsheets and graphic representations. Furthermore, it trains students to prepare professional papers in the field of information and communication sciences. | | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | | |
| Adoption of basic concepts in the field of information and communication technologies and acquisition of competencies for the use of word processing programs, creation of spreadsheets and graphic representations. Acquisition of competencies for the preparation of professional work in the field of information and communication technologies by applying Internet services. | | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | | |
| 1. Explain the basic concepts of information technology 2. Create a document using the advanced functionalities of the selected word processor. 3. Apply selected programs for advanced spreadsheets and graphical representations. 4. To create a more complex professional paper in the field of information sciences under the supervision of a mentor. 5. Describe the basic components of a computer system: hardware and software. 6. Select and apply basic Internet services (e-mail, information search, use and configuration of the web browser, etc.). | | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | | |
| Lectures:   * Data, information, knowledge. Information and communication technologies. A digital society. * System. Business system. Information Business System. Integrated IS. * Basic concepts of a computer system:   + Hardware. Types of computers.   + Software support (system and application software, artificial intelligence) * Types of data; Database; Knowledge Base, Data Warehouses; Big data * Computer networks; the Internet and its resources; Cloud technologies   Exercises:   * Working with the file system * Use of Internet services, searching databases of scientific and professional literature, sharing content; * Use of advanced functionalities of word processors; * Use of advanced functionalities of the program for tabular calculations and graphical representations.   Seminar:   * Methodology of writing a professional paper * Thematic areas of professional work * To create a more complex professional paper on the researched topic in ICT using selected word processing programs * Present the completed professional work using selected tools | | | | | | | | | | | | |
| 1. **Types of teaching** | | | | ☒ Lectures  Seminars and workshops  ☒ Exercises  ☒ Distance education  Field Teaching | | | | | ☒ Independent tasks  ☒ Multimedia & Network  Laboratory  ☒ Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | | |
| Student obligations:  Attendance at classes 70%.  Students who wish to be assessed through continuous verification at lectures at the agreed times submit/write:   * Seminar * Theoretical verification   Students who want to be assessed through continuous verification at the exercises at the agreed time write:   * Practical check 1 * Practical check 2   -------------------  Students who wish to take the full exam period, before the exam period, are obliged to submit the following at the lectures at the agreed time (or no later than three days before the exam period):   * Seminar   Students who want to take the full exam period, write on the exam period:   * Practical check 1 * Practical check 2 * Theoretical verification | | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | | |
| Attending classes | 2,5 | Teaching activity | | |  | Seminar paper | | 1 | Experimental work | | |  |
| Written exam | 1 | Viva voce | | |  | Assay | |  | Research | | |  |
| Project |  | Continuous Knowledge Assessment | | |  | Report | |  | Practical work | | | 1,5 |
| Portfolio |  |  | | |  |  | |  |  | | |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome. | | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Practical check 1 | Practical check 2 | Seminar | Theoretical verification | Share of ECTS | Prague | Max | | OUTCOME 1 |  |  |  | 20% | 1,25% | 10% | 20% | | OUTCOME 2 | 15% |  | 5% |  | 0,95%+0,3% | 10% | 20% | | OUTCOME 3 |  | 30% |  |  | 1,75% | 15% | 30% | | OUTCOME 4 |  |  | 15% |  | 0,95% | 7,5% | 15% | | OUTCOME 5 |  |  |  | 10% | 0,5% | 5% | 10% | | OUTCOME 6 | 5% |  |  |  | 0,3% | 2,5% | 5% | | Share in ECTS | 1,25 | 1,75 | 1,25 | 1,75 | 6 | - | - | | Altogether | 20% | 30% | 20% | 30% | 100% | 50 % | 100 % | |  |  |  |  |  |  |  |  |   Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Share of ECTS | Max | | OUTCOME 1 |  | **20%** | **1,25** | **20%** | | OUTCOME 2 | **20%** |  | **1,25** | **20%** | | OUTCOME 3 | **30%** |  | **1,75** | **30%** | | OUTCOME 4 | **15%** |  | **0,95** | **15%** | | OUTCOME 5 |  | **10%** | **0,5** | **10%** | | OUTCOME 6 | **5%** |  | **0,3** | **5%** | | Share in ECTS | **4,25** | **1,75** | **6** | **-** | | Altogether | **70%** | **30%** | **-** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | | |
| 1. **Number of copies of compulsory literature in relation to the number of students currently attending classes in the course** | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| Title | | | | | | | Number of copies | | | | Number of students | |
| Materials used in lectures and exercises from the course Introduction to Information and Communication Technologies; available on the Merlin system. | | | | | | | e-edition | | | |  | |
| Bosilj Vukšić, V., Ćurko, K., Jaković, B., Milanović Glavan, L., Pejić Bach, M., Pivar, J., ... & Zoroja, J., Fundamentals of Business Informatics. Faculty of Economics and Business Zagreb, 2020. | | | | | | | 7 | | | |  | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | | |
| 1. Brookshear J. G., Computer Science – An Overview, 13th ed., Pearson Education, Boston, 2019. 2. Bulić B., Spreadsheets – Excel 2018 Spreadsheets, University of Zagreb, University Computing Center 3. Bulić B., Spreadsheets – Advanced Level Excel 2018, University of Zagreb, University Computing Center 4. Bulić B., Spreadsheets – expert level Excel 2018, University of Zagreb, University Computing Center 5. Šnajdar , S: Basics of Informatics 1, Karlovac University of Applied Sciences, Karlovac 2017. | | | | | | | | | | | | |
| Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies | | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | | |

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| **Course holder** | **M.Sc. Katarina Volarić Nižić, pred.**  **Suzana Škarica Stupičić- assistant** | |
| **Nomenclature** | **Mathematics for Computer Scientists** | |
| **Study program** | **Undergraduate Professional Study of Computer Science** | |
| **Item Status** | **Compulsory** | |
| **Year / Semester** | **1 / I** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **6** |
| **Broj sati (P+V+S)** | **1+3+0** |

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| * 1. **Course description** | | | | | | | | | | | |
| The course introduces students to the basic mathematical concepts necessary for understanding the content and solving problems in the field of computer science.  Students set up mathematical models for real problems and solve the problems obtained in this way by applying appropriate mathematical methods. | | | | | | | | | | | |
| * 1. **Course objectives** | | | | | | | | | | | |
| Students will acquire the basic concepts of set theory, mathematical logic, and calculus. They will repeat and expand their knowledge of percentage calculus, equations, inequalities, elementary real functions of real variables and analytical geometry. | | | | | | | | | | | |
| * 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | |
| * 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Analyze relationships and operations between sets. 2. Analyze mathematical propositions using classical proposition logic. 3. Define binary relations and their salient properties using quantification formulas. 4. Apply the basic formulas of interest and percentage accounts on specific examples from business practice. 5. Model a real problem using a system of linear equations and inequalities. 6. To solve a given problem problem in the field of application by applying the concepts and methods of vector calculus and analytical geometry in three-dimensional space. 7. Describe the elementary real functions of a real variable, enumerate their properties and sketch their graphs. 8. Apply arrays and rows in solving problems from the scope of application. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * The logic of the courts * A Brief History of Logic * Basic logical conjunctions and their properties * Veracity Table * Compound formulas * Sets * Basic concepts of set theory * Relations between sets * Set operations and their properties * Cartesian product of sets * Binary Relations * Definition of Binary Relation * Properties of binary relations * Equivalence relations * Partial Device Relations * Percentage and interest account * Percentage account * Simple Interest Account: Decursive and Anticipatory * Compound Interest Account: Decursive and Anticipatory * Nominal, Relative and Conformal Interest Rates * Periodic Deposits and Withdrawals * Loan * Systems of linear equations and inequalities * Defining *a system of m* linear equations with *n* unknowns * Solving systems of linear equations (Gaussian method of elimination, Cramer's rule, matrix equation) * Graphical solution of a system of linear inequalities with two variables * Vector calculus and analytic geometry in three-dimensional space * The definition of a vector * Calculation with vectors in three-dimensional space * Analytic geometry in three-dimensional space * Real Functions of a Real Variable * Elementary functions * Function properties * Determining the Domain of a Function * Composition of functions * Bijection * Inverse function * Plotting a graph of a function * Arrays and rows * String definition * Arithmetic and geometric sequence * Nice limes * Definition of order * Definition of the sum of the order | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  ☒Distance education  ☐Field Teaching | | | | **☐Independent tasks**  **☐Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations:** | | | | | | | | | | | |
| Active participation in classes. Taking written examinations. | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam | 1 | Viva voce | | |  | Assay | |  | | Research |  |
| Project |  | Continuous Knowledge Assessment | | |  | Report | |  | | Practical work | 3 |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.     |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written exam** | **Written practical test** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **2%** | **8%** | **0,6** | **5%** | **10%** | | **OUTCOME 2** | **2%** | **8%** | **0,6** | **5%** | **10%** | | **OUTCOME 3** | **3%** | **7%** | **0,6** | **5%** | **10%** | | **OUTCOME 4** | **5%** | **10%** | **0,9** | **7,5%** | **15%** | | **OUTCOME 5** | **5%** | **10%** | **0,9** | **7,5%** | **15%** | | **OUTCOME 6** | **5%** | **10%** | **0,9** | **7,5%** | **15%** | | **OUTCOME 7** | **5%** | **10%** | **0,9** | **7,5%** | **15%** | | **OUTCOME 8** | **3%** | **7%** | **0,6** | **5%** | **10%** | | **Share in ECTS** | **1,8** | **4,2** | **6** | **-** | **-** | | **Altogether** | **30%** | **70%** | **100%** | **50%** | **100%** |     A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.    Assessment during the exam period:     |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written practical test** | **Theoretical written exam** | **Share of ECTS** | **Max** | | **OUTCOME 1** | **8%** | **2%** | **0,6** | **10%** | | **OUTCOME 2** | **8%** | **2%** | **0,6** | **10%** | | **OUTCOME 3** | **7%** | **3%** | **0,6** | **10%** | | **OUTCOME 4** | **10%** | **5%** | **0,9** | **15%** | | **OUTCOME 5** | **10%** | **5%** | **0,9** | **15%** | | **OUTCOME 6** | **10%** | **5%** | **0,9** | **15%** | | **OUTCOME 7** | **10%** | **5%** | **0,9** | **15%** | | **OUTCOME 8** | **7%** | **3%** | **0,6** | **10%** | | **Share in ECTS** | **4,2** | **1,8** | **6** | **-** | | **Altogether** | **70%** | **30%** | **100%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very Good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Štambuk, Lj.: Mathematics, Rijeka, 2007. | | | |  | | | | |  | | |
| Štambuk, Lj., Peranić, Z., Matija, M.: Mathematics – A Collection of Problems with Solved Examples, Rijeka, 2008. | | | |  | | | | |  | | |
| Kovač S.: Logic, Zagreb, 2006. | | | |  | | | | |  | | |
| Štambuk, Lj.: Business Mathematics 1, Karlovac, 2006. | | | |  | | | | |  | | |
| Mataija, M., Gligora Marković, M., Rakamarić Šegić, M.: Mathematics - Collection of Exam Tasks, Rijeka, 2014. | | | |  | | | | |  | | |
| Štambuk, Lj.: Elementary Mathematics, Rijeka, 2008. | | | |  | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Šorić, K.: A Collection of Tasks in Mathematics with Application in Economics, Zagreb, 2005. 2. Relić, B.: Economic Mathematics, Zagreb, 2002. 3. Francišković, D.: Economic and Financial Mathematics, Zagreb, 2024. 4. Other textbooks and collections that cover the teaching topics covered in the course. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **M.Sc. Jasminka Tomljanović, senior lecturer** | |
| **Nomenclature** | **Object-oriented programming** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Binding** | |
| **Year / Semester** | **1/2** | |
| **Point value and method of teaching** | **ECTS Load Coefficient**  **Students** | **6** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| * 1. **Course description** | | | | | | | | | |
| The course covers the basic concepts and principles of object-oriented programming, the concepts of object-oriented modeling, the basic concepts of GUI, and the creation of basic GUI elements. Students create classes and objects, distinguish methods, define the ownership and visibility of class members, explain inheritance, polymorphism, and abstract classes. They create a class hierarchy and inheritance and display a data class diagram model, and describe methods with a data and activity class diagram. In addition, they build GUI applications. | | | | | | | | | |
| * 1. **Course objectives** | | | | | | | | | |
| To create computer programs based on the adopted principles of object-oriented programming and concepts of object-oriented modeling, and to create programs in a graphical environment. | | | | | | | | | |
| * 1. **Course Enrolment Requirements** | | | | | | | | | |
| Attendance of the course Procedural and Modular Programming | | | | | | | | | |
| * 1. **Expected learning outcomes for the course** | | | | | | | | | |
| 1. Design a hierarchy of data classes and inheritance and show the model with a diagram   A class of data.   1. Formulate data privacy in data classes and display the model with a diagram of the data classes. 2. Formulate methods related to a given data class and describe them with a diagram of data classes and activities. 3. Implement the created object model using inheritance concepts,   encapsulation, polymorphism, and abstraction in a given programming language.   1. Implement standard operators for an implemented data class. 2. Convert the app into an executable form | | | | | | | | | |
| 1. **Course content** | | | | | | | | | |
| * **Terminology and Decomposition of Object-Oriented Programming** – Class, Object, Attributes, Methods, Constructor (2P+4V) * **Principles of object-oriented programming** – encapsulation, inheritance,   Abstraction and polymorphism (2P+4V)   * **Object-oriented modeling concepts** - UML class diagrams, object diagrams, activity diagrams (3P+6V) * **Inheritance** – base class and derived class, super(); single and   Multiple inheritance(3P+6V) | | | | | | | | | |
| * **Encapsulation** – visibility of class members – public, protected, private (2P+4V) * **Polymorphism** – method overload (Method Overload) Overloading, overriding the method   (engl. Overriding) – (3P+6V)   * **Abstraction** – use cases of abstract classes, abstract classes and abstract   Methods (3P+6V)   * **Grafičko korisničk sučelje (GUI)** – temeljni pojmovi (Window, Control, Widget, Frame, Label, Button, Text Entry, Menu, Canvas, Messagebox, Geometry, Dialog, Layout, Parent-child, Focus, Top-level window) (3P+6V) * **Components and options of the Tkinter module** (2P+4V) * **Tkinter structure** – creating a root window, coordinate system, Tkinter variables, standard attributes (size, color, font), bitmaps, event-driven GUI programs. Event driven), event formats, event attributes (4P+8V) * **Changing the root window, starting the event loop, hotspot** (3P+6V) | | | | | | | | | |
| 1. **Types of execution**   **teaching** | | | ☒Lectures   * Seminars and workshops   ☒Exercises  ☒Distance education   * Field Teaching | | | ☒Independent **tasks**  ☒Multimedia **& Network**   * Laboratory   ☒Mentorski **rad**   * Other | | | |
| 1. **Comments** | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | |
| * + 1. Create all planned activities in class     2. Develop and defend the project orally     3. Access continuous checks | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | |
| Attendance  teaching |  | Activity in  go on | | 10 | Seminar  work | |  | Experimental  work |  |
| Written exam |  | Viva voce | |  | Assay | |  | Research |  |
| Project | 10 | Continuous Verification  knowledge | | 80 | Report | |  | Practical work |  |
| Portfolio |  |  | |  |  | |  |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome. | | | | | | | | | |

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| **OUTCOMES** | **Theoretical written exam** | **Practical**  **Tasks** | **Activity** | **Project** | **Udio ECTS-a** | **Prague** | **Max** |
| **OUTCOME 1** | **10%** | **10%** | **2%** |  | **1,32** | **11%** | **22%** |
| **OUTCOME 2** | **5%** | **10%** | **2%** |  | **1,02** | **8,5%** | **17%** |
| **OUTCOME 3** | **5%** | **15%** | **2%** |  | **1,32** | **11%** | **22%** |
| **OUTCOME 4** |  | **15%** | **2%** |  | **1,02** | **8,5%** | **17%** |
| **OUTCOME 5** |  | **10%** | **2%** |  | **0,72** | **6%** | **12%** |
| **OUTCOME 6** |  |  |  | **10%** | **0,6** | **5%** | **10%** |
| **ECTS Udio** | **1,2** | **3,6** | **0,6** | **0,6** | **6** | **-** | **-** |
| **Altogether** | **20 %** | **60%** | **10%** | **10%** | **100%** | **50 %** | **100 %** |

**NV is chosen**: Theoretical examination, practical examination or written practical examination, written exam (if the combination of theory and practice is in one examination), project (if there are more than one project 1,2,3...), presentation (it can also be if it is a defence), seminar, documentation, activity, assignment.

And then, if necessary, in the notes section, you can put e.g. project 1 is the production of a video work, project 2 is the production of animation.

For the complete exam, the item oral examination should then be added.

# A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.

Assessment during the exam period:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** |
| **OUTCOME 1** | **12%** | **10%** | **1,32%** | **22%** |
| **OUTCOME 2** | **12%** | **5%** | **1,02%** | **17%** |
| **OUTCOME 3** | **17%** | **5%** | **1,32%** | **22%** |
| **OUTCOME 4** | **17%** |  | **1,02%** | **17%** |
| **OUTCOME 5** | **12%** |  | **0,72%** | **12%** |
| **OUTCOME 6** |  | **10%** | **0,6%** | **10%** |
| **ECTS Udio** | **4,2%** | **1,8%** | **6%** |  |
| **Altogether** | **70%** | **30%** | **100%** | **100 %** |

# If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:

|  |  |  |
| --- | --- | --- |
| **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** |
| **90,00 – 100,00** | Excellent (5) | A |
| **75,00 – 89,99** | Very good (4) | B |
| **60,00 – 74,99** | Good (3) | C |
| **50,00 – 59,99** | Sufficient (2) | D |
| **0,00 – 49,99** | Insufficient (1) | F |

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| **11. Compulsory literature (at the time of application for the study programme)** | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | |
| Title | Number of copies | Number of students |
| 1. Materials used in lectures and exercises, available  on the Merlin system |  | 134 |
| 2. Doveda Z. H., Let's Speak Python, Vlasta naklada, Zagreb,  2021. | 10 | 134 |
| **12. Supplementary literature (at the time of application for the study programme)** | | |
| 1. [Python Tutorial](https://www.pythontutorial.net/) 2. [Python - GUI Programming (Tkinter) (tutorialspoint.com)](https://www.tutorialspoint.com/python/python_gui_programming.htm) 3. [Python Tutorial (w3schools.com)](https://www.w3schools.com/python/) | | |
| 13.Methods of quality monitoring that ensure the acquisition of output knowledge, skills and competences | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and skills.  competence. | | |

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| **Course holder** | | | | **Dr. sc. Socio. Sabrina Šuman, prof. struč. Stud.**  **Matea Pešut, assistant** | | | | | | | | | |
| **Nomenclature** | | | | **SPECIFICATION OF USER REQUIREMENTS AND PROCESS MODELING** | | | | | | | | | |
| **Study program** | | | | **Professional Undergraduate Study of Informatics** | | | | | | | | | |
| **Item Status** | | | | **binding** | | | | | | | | | |
| **Year** | | | | **1. / II** | | | | | | | | | |
| **Point value and method of teaching** | | | | **ECTS coefficient of student workload** | | | | | | | | **5** | |
| **Broj sati (P+V+S)** | | | | | | | | **2+2+0** | |
| * 1. **Course description** | | | | | | | | | | | | | |
| The course enables students to acquire competencies related to the early stages of information systems development, such as the analysis of user requirements, different forms and degrees of abstraction of writing down these requirements, and process modeling. Students will create a process model based on collected and formally written user requirements. | | | | | | | | | | | | | |
| * 1. **Course objectives** | | | | | | | | | | | | | |
| Analyze user requirements, write them down through user stories and display them through UML use case diagrams, and create a process model. | | | | | | | | | | | | | |
| * 1. **Course Enrolment Requirements** | | | | | | | | | | | | | |
| No conditions | | | | | | | | | | | | | |
| * 1. **Expected learning outcomes for the course** | | | | | | | | | | | | | |
| 1. Analyze the methods and techniques of collecting user requirements in the development of the information system. 2. Explain the relationship between non-functional and functional requirements of a software product on a concrete example and suggest ways to solve them 3. Display user requirements using selected formal methods 4. Determine business processes in an organization in preparation for planning an information system or system component 5. Analyze the course of the company's business processes. 6. Build a process model according to the collected user requirements using process modeling techniques and appropriate software tools. | | | | | | | | | | | | | |
| * 1. **Course content** | | | | | | | | | | | | | |
| User requirements. Objectives of the analysis of user requirements. Types of requests. Stages of user request management. Methods of collecting requests, Specification of requests. An analysis is carried out with the aim of defining user requirements. Functional and non-functional requirements. Method of recording user requests - user stories, use cases and use case diagrams.  Process model: decomposition diagram, data flow diagram, process model concepts, DTP creation rules of various levels, application of UML activity diagrams. Process modeling. Creating a UML activity diagram. | | | | | | | | | | | | | |
| * 1. **Types of teaching** | | | **☒ Lectures**  Seminars and workshops  **☒ Exercises**  Distance education   * Field Teaching | | | | | **☒ Independent tasks**  **☒ Multimedia & Network**  Laboratory  Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |
| * 1. **Comments** | | | | | | | | | | | | | |
| * 1. **Student obligations** | | | | | | | | | | | | | |
| Attendance at exercises of at least 70%;  Actively participate in solving practical tasks in lectures and exercises; Present the created project assignment from the selected topic - preparation of documentation | | | | | | | | | | | | | |
| * 1. **Monitoring student work** | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | | Seminar paper | | |  | Experimental work | |  |
| Written exam |  | Viva voce | | |  | | Essay | | |  | Research | |  |
| Project | 1,5 | Continuous Knowledge Assessment | | |  | | Report | | |  | Practical work | | 1,5 |
| Portfolio |  |  | | |  | |  | | |  |  | |  |
|  |  |  | | |  | |  | | |  |  | |  |
| * 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Presentation | Project User Requirements | Project model procesa | Share of ECTS | Prague | Max | | OUTCOME 1 | **10 %** |  |  |  | **0,5** | **10%** | **5 %** | | OUTCOME 2 | **10 %** |  |  |  | **0,5** | **10%** | **5 %** | | OUTCOME 3 |  |  | **30%** |  | **1,5** | **30%** | **15 %** | | OUTCOME 4 | **10 %** |  |  |  | **0,5** | **10%** | **5 %** | | OUTCOME 5 |  | **10%** |  |  | **0,5** | **10%** | **5 %** | | OUTCOME 6 |  |  |  | **30%** | **1,5** | **30%** | **15 %** | | Share in ECTS | **1,25** | **0,5** | **1,5** | **1,5** | **5** | **-** | **-** | | Altogether | **25 %** | **10%** | **25%** | **25%** | **100%** | **50 %** | **100 %** |   Assessment during the exam period:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Share of ECTS | Prague | Max | | OUTCOME 1 |  | **10 %** | **0,5** | **10%** | **5 %** | | OUTCOME 2 |  | **10 %** | **0,5** | **10%** | **5 %** | | OUTCOME 3 | **30%** |  | **1,5** | **30%** | **15 %** | | OUTCOME 4 |  | **10 %** | **0,5** | **10%** | **5 %** | | OUTCOME 5 |  | **10%** | **0,5** | **10%** | **5 %** | | OUTCOME 6 | **30%** |  | **1,5** | **30%** | **15 %** | | Share in ECTS | **60%** | **40%** | **5** | **-** | **-** | | Altogether | **3** | **2** | **100%** | **50 %** | **100 %** | | | | | | | | | | | | | | |
| Assessment and evaluation of students' work during classes and at the final exam  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | | | |
| * 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | | | |
| Title | | | | | | Number of copies | | | Number of students | | | | |
| Pavlić, M; Jakupović, A; Čandrlić, S: Process Modeling, Martina Ašenbrener Katić (ed.), Rijeka: Department of Informatics, University of Rijeka, 2014. | | | | | | 5 | | |  | | | | |
| Kaluža, Panev, Data and Process Modeling, University of Applied Sciences of Rijeka, 2022 | | | | | | online | | |  | | | | |
|  | | | | | |  | | |  | | | | |
|  | | | | | |  | | |  | | | | |
| * 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | | | |
| * <https://www.guru99.com/use-case-diagrams-example.html> * <https://learnaboutgmp.com/sops-urss/how-to-create-a-bullet-proof-user-requirement-specification-urs/> * <https://www.uxbooth.com/articles/build-better-requirements-documentation-why-who-and-how/> * <http://www.ofnisystems.com/services/validation/functional-requirements/> * <https://www.template.net/business/analysis-templates/requirements-analysis-templates/> * <https://www.altexsoft.com/blog/business/functional-and-non-functional-requirements-specification-and-types/> * M. Kohn: User stories applied, Boston: Pearson Education, 2009. * R. Manger: Software Engineering, Zagreb:Element, 2016. * <https://www.mountaingoatsoftware.com/agile/user-stories> * <https://www.visual-paradigm.com/guide/agile-software-development/what-is-user-story/> * <http://scrummethodology.com/scrum-user-stories/> * <https://www.visual-paradigm.com/guide/agile-software-development/user-story-vs-use-case/> * <http://agilemodeling.com/artifacts/systemUseCase.htm> * <https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-use-case-diagram/> | | | | | | | | | | | | | |
| * 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | | | |

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| **Course holder** | **Dr. sc. Socio. Sabrina Šuman, prof. struč. Stud.**  **Maria Krajči- assistant** | |
| **Nomenclature** | **COMPUTER GRAPHICS** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **binding** | |
| **Year** | **1. / II.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| * + 1. **Course description** | | | | | | | | | |
| The course includes the adoption of the characteristics of two basic computer graphic architectures, the application and creation of a raster, vector graphic product, as well as the creation of a simpler 2D animation using selected programming tools and programming languages. | | | | | | | | | |
| * + 1. **Course objectives** | | | | | | | | | |
| Adopt concepts in the field of graphic design and develop the skill of creating 2D graphic products in raster and vector graphics by applying the guidelines of graphic design, in selected software. . | | | | | | | | | |
| * + 1. **Course Enrolment Requirements** | | | | | | | | | |
| No conditions | | | | | | | | | |
| * + 1. **Expected learning outcomes for the course** | | | | | | | | | |
| 1. Compare text and hypertext and design them for multimedia presentation elements using appropriate standards. 2. Evaluate graphics based on quality guidelines 3. Compare raster and vector graphics (bitmaps) for print and web and create examples using appropriate color models and file formats. 4. Create a raster graphics product using the functionality of the selected software 5. Create a vector graphic product by applying the functionality of the selected software 6. Create a simple 2D animation in the selected tool. | | | | | | | | | |
| 1. **Course content** | | | | | | | | | |
| Teme College with:   * Basic Concepts and Elements of Graphic Design * Characteristics of two computer graphics architectures - raster and vector * Creating multimedia presentations * Characteristics of text and hypertext in graphic design * Shapes, lines, colors, textures, space, and composition in graphic design * Elements of the Book of Standards * Application of standard software functionalities for raster graphics * Application of standard software functionalities for vector graphics * creation of simple 2D animations in the selected software | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  ☐Distance education  ☐Field Teaching | | | **☒Independent tasks**  **☒Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | |
| Attendance at exercises of at least 70%;  Actively participate in solving practical tasks in lectures and exercises; Present the created project assignment from the selected topic - preparation of documentation | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | |
| Attending classes | 2 | Teaching activity | |  | Seminar paper | |  | Experimental work |  |
| Written exam | 0,5 | Viva voce | |  | Essay | |  | Research |  |
| Project | 1,5 | Continuous Knowledge Assessment | |  | Report | |  | Practical work | 1 |
| Portfolio |  |  | |  |  | |  |  |  |

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| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | |
| |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written exam** | **Presentation** | **Raster project** | **Project Vector** | **Animation** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **5 %** | **10** |  |  |  | **0,75** | **15%** | **7,5 %** | | **OUTCOME 2** | **10 %** |  |  |  |  | **0,5** | **10%** | **5 %** | | **OUTCOME 3** | **10 %** |  |  |  |  | **0,5** | **10%** | **5 %** | | **OUTCOME 4** |  |  | **25** |  |  | **1,25** | **25%** | **12,5 %** | | **OUTCOME 5** |  |  |  | **25** |  | **1,25** | **25%** | **12,5 %** | | **OUTCOME 6** |  |  |  |  | **15** | **0,75** | **15%** | **7,5** | | **Share in ECTS** | **1,25** | **0,5** | **1,25** | **1,25** | **0,75** | **5** | **-** | **-** | | **Altogether** | **25 %** | **10%** | **25%** | **25%** | **15%** | **100%** | **50 %** | **100 %** |   Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.      Assessment during the exam period:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Presentation** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **10 %** | **5%** | **0,75** | **15%** | **7,5 %** | | **OUTCOME 2** |  | **10 %** | **0,5** | **10%** | **5 %** | | **OUTCOME 3** |  | **10 %** | **0,5** | **10%** | **5 %** | | **OUTCOME 4** | **25%** |  | **1,25** | **25%** | **12,5 %** | | **OUTCOME 5** | **25%** |  | **1,25** | **25%** | **12,5 %** | | **OUTCOME 6** | **15%** |  | **0,75** | **15%** | **7,5** | | **Share in ECTS** | **3,75** | **1,25** | **5** | **-** | **-** | | **Altogether** | **75 %** | **25%** | **100%** | **50 %** | **100 %** | | | |
| If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | |
| Title | Number of copies | Number of students |
| Wayne Collins, Alex Hass, Ken Jeffery, Alan Martin, Roberto Medeiros, and Steve Tomljanovic, Graphic Design and Print Production Fundamentals, 2015 Ken Jeffery | 5 |  |
| https://affinity.serif.com/en-gb/learn/ |  |  |
| <https://garethdavidstudio.com/tutorials/series/beginners_guide_graphic_design/> |  |  |
| Dunato, Nela,The human centered brand : a pracitical guide to being yourself in business ,Nela Dunato Art & Design, 2018 |  |  |
| https://designschool.canva.com/tutorials/ |  |  |

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| 1. **Supplementary literature (at the time of application for the study programme)** |
| 1. Dayley, B., Dayley,D.,Adobe Photoshop CS6 Bible,Wiley and Sons, 2012.  2. <https://www.gimp.org/tutorials/> |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. |

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| **Course holder** | | | | | **Dr. sc. socio. Ida Panev, v. pred.** | | | | | | | | | |
| **Nomenclature** | | | | | **DATA MODELING** | | | | | | | | | |
| **Study program** | | | | | **Professional Undergraduate Study of Informatics** | | | | | | | | | |
| **Item Status** | | | | | **Binding** | | | | | | | | | |
| **Year / Semester** | | | | | **1st year, 2nd semester** | | | | | | | | | |
| **Point value and method of teaching** | | | | | **ECTS coefficient of student workload** | | | | | | | **5** | | |
| **Broj sati (P+V+S)** | | | | | | | **2+2+0** | | |
| 1. **Course description** | | | | | | | | | | | | | | |
| The course contributes to the acquisition of knowledge in the field of information systems design. It trains students to create conceptual and logical data models that are the basis for further development of business information systems. | | | | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | | | | |
| The student will adopt the procedures of data modeling used in the process of developing a business information system. They will acquire competencies for using the entity-links-attributes method in conceptual data modeling, as well as competencies for logical modeling by creating a relational data model. They will also acquire competencies for the implementation of the normalization of the logical data model. | | | | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | | | | |
| * Explain the concepts related to data modeling in the development of an information system * Analyze the company's business documentation independently and/or by interviewing business users with the aim of building an appropriate model of the structure and/or behavior of the system. * Build a conceptual database model by applying selected data modeling techniques at the conceptual level for a defined application domain. * Build a logical data model based on the developed conceptual data model. * Rearrange the default logical model by using logical database formatting methods (normalization) and eliminate database anomalies. | | | | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | | | | |
| Lectures:   * System, business system, data, information, information system, computer-aided IS, IS design, IS models. * Data model, data model concepts, identification of relevant objects for data modeling. * EVA data model, EVA data model concepts, data model documentation. * Relational data model, relational data model concepts, translating EVA model into relational data model. Relational algebra   Exercises:   * Data modeling. * Identification of relevant objects (entities, attributes, links) from the description of the information (sub)system with the aim of creating an IS data model. * Familiarization with the interface of the data model builder and how to use it. * EVA model - concepts: entity, attribute, connection (Chen's, Martin's notation), weak entity, aggregate entity. Creating data models in Chen and Martin notation based on textual descriptions of information (sub)systems. * A relation, a relational schema. Primary, external key, data type, n-tuples. Translating an EVA data model into a relational data model. Translation rules. Creating a relational data model. * Functional dependence, data redundancy, redundancy anomalies, data normalization. | | | | | | | | | | | | | | |
| 1. **Types of teaching** | | | | ☒ Lectures  Seminars and workshops  ☒ Exercises  ☒ Distance education  Field Teaching | | | | ☒ Independent tasks  ☒ Multimedia & Network  Laboratory  ☒ Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| 1. **Comments** | | | | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | | | | |
| Students who wish to be assessed through continuous verification at lectures at the agreed times submit/write:   * Project documentation * Theoretical verification   Students who want to be assessed through continuous verification at the exercises at the agreed time write:   * Practical check   -------------------  Students who wish to take the full exam period, before the exam period, are obliged to submit the following at the lectures at the agreed time (or no later than three days before the exam period):   * Project documentation   Students who want to take the full exam period, write on the exam period:   * Practical check * Theoretical verification | | | | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | | |  | Seminar paper | | |  | Experimental work | |  | |
| Written exam | 1 | Viva voce | | | |  | Assay | | |  | Research | |  | |
| Project | 1 | Continuous Knowledge Assessment | | | |  | Report | | |  | Practical work | | 1 | |
| Portfolio |  |  | | | |  |  | | |  |  | |  | |
|  | | | | | | | | | | | | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical verification | Project documentation | Practical check | Share in ECTS | Prague | Max | | OUTCOME 1 | 30% |  |  | 1,5 | 15% | 30% | | OUTCOME 2 |  | 5% | 8% | 0,5 | 6,5% | 13% | | OUTCOME 3 |  | 10% | 22% | 1,5 | 16% | 32% | | OUTCOME 4 |  | 5% | 12% | 1 | 8,5% | 17% | | OUTCOME 5 |  |  | 8% | 0,5 | 4% | 8% | | Share in ECTS | 1,5 | 1 | 2,5 | 5 | - | - | | Altogether | 30% | 20% | 50% | 100% | 50 % | 100 % |   Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Share of ECTS | Max | | OUTCOME 1 |  | **30%** | **1,5** | **30%** | | OUTCOME 2 | **13%** |  | **0,5** | **13%** | | OUTCOME 3 | **32%** |  | **1,5** | **32%** | | OUTCOME 4 | **17%** |  | **1** | **17%** | | OUTCOME 5 | **8%** |  | **0, 5** | **8%** | | Share in ECTS | **3** | **2** | **5** | **-** | | Altogether | **70%** | **30%** | **-** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | And | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | | | | |
| Title | | | Number of copies | | | | | | Number of students | | | | | |
| Panev, Ida; Kaluža, Marin: Data and Process Modeling, Rijeka: Polytechnic of Rijeka, 2022 | | | e-edition | | | | | |  | | | | | |
| Materials used in lectures and exercises from the course Data Modeling; available on the Moodle system. | | | e-edition | | | | | |  | | | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | | | |
| * Pavlić, M: Development of Information Systems, Znak, Zagreb, 1996. * Pavlić, M: Information Systems, University of Rijeka, Rijeka, 2009. * Pavlić, M: Database Design. Rijeka: Department of Informatics, University of Rijeka, 2011. * Pavlić, M; Jakupović, A; Čandrlić, S: Process Modeling, Martina Ašenbrener Katić (ed.), Rijeka: Department of Informatics, University of Rijeka, 2014. * Radovan, M: Designing Information Systems, Informator, Zagreb, 1989. * Strahonja, V; Varga, M; Pavlić, M: Design of Information Systems, Association of Information Technology, INA INFO, Zagreb, 1992. * Varga, M.: Databases: Conceptual, Logical, and Physical Data Modeling. Zagreb: own edition, 2021. Available at: https://books.google.hr/books?id=UQPoDwAAQBAJ&lpg=PA1&ots=NosGTXlMAR&lr&hl=hr&pg=PP2#v=onepage&q&f=false | | | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | | | |

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| **Course holder** | | | | **Doc. dr. sc. Socio. Bernard Vukelić, prof. struč. Stud.**  **Bruno Polonijo- assistant** | | | | | | | |
| **Nomenclature** | | | | **OPERATING SYSTEMS** | | | | | | | |
| **Study program** | | | | **Undergraduate Professional Study of Computer Science** | | | | | | | |
| **Item Status** | | | | **Required** | | | | | | | |
| **Year / Semester** | | | | **1. / II.** | | | | | | | |
| **Point value and method of teaching** | | | | **ECTS coefficient of student workload** | | | | | | | **5** |
| **Broj sati (P+V+S)** | | | | | | | **2+2+0** |
| 1. **Course description** | | | | | | | | | | | |
| The course teaches knowledge in the field of operating systems. The thematic units of the course contain the type and architecture of operating systems and various concepts for the optimal use of computer resources and the preparation of the environment for the execution of computer programs. Students analyze the operation of the operating system through its configuration. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| The aim of the course is to acquire knowledge about the basic concepts, elements and functionalities of modern operating systems and to analyze their operation through setting up their configuration. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| There are no conditions for enrolling in courses | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| * Explain the role and types of operating systems. * Show the structure of the operating system. * Analyze the modes of managing the memory subsystem. * Explain the relationship between programs, processes and threads. * Compare the mechanisms of job scheduling and mutual exclusion. * Select the file subsystem type for the given domain. * Analyze the operation of the operating system and set its configuration * Apply command shells in operating systems | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Role and types of operating systems * Structure of operating systems * Working memory * Physical and logical addressing * Memory segmentation * Pagination * Page Swap Algorithms * Programs, processes and threads * Multi-process and multi-threaded systems * Algorithms for scheduling and mutually excluding. * Deadlock Treatment * File systems * Configuration and analysis of modern operating systems * Measuring the performance of the operating system * Using command shells in operating systems | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒ Lectures**  Seminars and workshops  **☒ Exercises**  Distance education  Field Teaching | | | | Independent tasks  Multimedia & Network  Laboratory  Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| Access continuous examinations | | | | | | | | | | | |
|  | | | | | | | | | | | |
| 1. **Monitoring[[1]](#footnote-1) student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper | |  | Experimental work | | |  |
| Written exam |  | Viva voce | | |  | Essay | |  | Research | | |  |
| Project |  | Continuous Knowledge Assessment | | | 3 | Report | |  | Practical work | | |  |
| Portfolio |  |  | | |  |  | |  |  | | |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical verification | Written practical test | Task | Share of ECTS | Prague | Max | | OUTCOME 1 | 10% |  |  | 0,5 | 5% | 10% | | OUTCOME 2 | 10% |  |  | 0,5 | 5% | 15% | | OUTCOME 3 |  | 20% |  | 1 | 12,5% | 25% | | OUTCOME 4 | 10% |  |  | 0,5 | 5% | 10% | | OUTCOME 5 |  | 20% |  | 1 | 12,5% | 25% | | OUTCOME 6 | 10% |  |  | 0,5 | 5% | 10% | | OUTCOME 7 |  |  | 20% | 1 | 10% | 20% | | Share in ECTS | 2 | 2 | 1 | 5 | - | - | | Altogether | 40% | 40% | 20% | 100 % | 50 % | 100 % |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Share of ECTS | Max | | OUTCOME 1 | 10% |  | 0,5 | 10% | | OUTCOME 2 | 10% |  | 0,5 | 10% | | OUTCOME 3 |  | 20% | 1 | 20% | | OUTCOME 4 | 10% |  | 0,5 | 10% | | OUTCOME 5 |  | 20% | 1 | 20% | | OUTCOME 6 | 10% |  | 0,5 | 10% | | OUTCOME 7 |  | 20% | 1 | 20% | | Share in ECTS | 2 | 3 | 5 | - | | Altogether | 40% | 60% | 100 % | 100 % |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:     |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | | | | Number of copies | | | Number of students | |
| Operating Systems, Prof. dr. sc. Leo Budin, FER, Department of Electronics, Microelectronics, Computer and Intelligent Systems, Element, Zagreb 2018. | | | | | | | 7 | | |  | |
| Materials used in lectures and exercises, available on the Merlin system | | | | | | | E-Mail | | |  | |
|  | | | | | | | | | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. OPERATING SYSTEM CONCEPTS 10th Edition, Silberschatz, Galvine, Gagne, Sixth Edition, John Wiley & Sons, Inc. 2018.; 2. MODERN OPERATING SYSTEMS, Andrew S. Tanenbaum, Second Edition, Prentice Hall, Inc, 2015.; 3. OPERATING SYSTEMS - Design and Implementation, Andrew S. Tanenbaum, Albert S. Woodhull, Second Edition Prentice Hall, Inc. 2015., 4. Principles of Operating Systems: Design and Applications, Stuart L Brian, Lulu.com, 2021. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course holder** | | | **Doc. dr. sc. Socio. Prof. Ozren Rafajac, prof. struč. Stud.  – full-time study** | | | | | | | | | |
| **Nomenclature** | | | **BUSINESS IDEA DEVELOPMENT** | | | | | | | | | |
| **Study program** | | | **Professional Undergraduate Study of Informatics** | | | | | | | | | |
| **Item Status** | | | **Binding** | | | | | | | | | |
| **Year / Semester** | | | **1. / II.** | | | | | | | | | |
| **Point value and method of teaching** | | | **ECTS coefficient of student workload** | | | | | | | **4** | | |
| **Broj sati (P+V+S)** | | | | | | | **2+2+0** | | |
| 1. **Course description** | | | | | | | | | | | | |
| By analyzing the business environment and consumer habits in different industries, entrepreneurial opportunities are identified, as well as strategies and innovations that could meet and exceed user expectations. Students learn how to develop and present their own business idea on practical examples. On their own examples, students conduct market research and user profiling, and create a business plan and presentation for potential users and investors. | | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | | |
| Understand the importance of researching the business environment and profiling users in different industries. Distinguish between entrepreneurial strategies and types of different innovations. Apply different innovation techniques and methodology for creating business plans and become aware of the importance of (after)sales services. Analyze protocols in a safe and insecure communication channel and adopt recommendations on the presentation of a business idea | | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | | |
| No conditions | | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | | |
| 1. Analyze the elements of the business environment (market, industrial environment, influencing factors) and consumers in individual industries. 2. Apply entrepreneurial strategies and tactics as well as innovative solutions to improve the business of entrepreneurs. 3. Create a business plan that includes key business factors important for overcoming business challenges and looking for new business opportunities. 4. To determine the role of services in modern society and the ICT economy based on services. 5. Create and present "Elevator pitch" business ideas. | | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | | |
| * Analysis of the market, business environment and users - 12 hours: Analysis of trends and business environment; Identification of user needs; DSR methodology; User stories; Market research; * Entrepreneurial strategies, tactics, techniques and innovations – 20 hours: Teamwork; Creating new and added value; Methods of innovative design; Networking; Stress and time management; * Creating a business model and plan – 12 hours: Elements of a business plan; Types of business models; Shaping value propositions; Business model canvas; Identification of key resources and strategic partners; Projection of revenues and expenses; SWOT analysis; Gantt chart; * The Role and Significance of Services in the ICT Economy – 4 hours: Innovations in the Service Economy; Personal and consultative sales; after-sales services; Customer relationship management (CRM) Customer Relationship Management); * Communication and presentation of a business idea – 12 hours: Communication with investors and associates; A non-disclosure agreement (NDA) non-disclosure agreement);  Creating a pitch-deck presentation; Creation of other promotional content in the communication of business ideas. | | | | | | | | | | | | |
| 1. **Types of teaching** | | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  ☐Distance education  ☐Field Teaching | | | | | **☒Independent tasks**  **☒Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | | |
| Fulfill the obligations prescribed by the Study Regulations and the Assessment Regulations.  Students who take the full exam or partial exam are required to submit a project (outcome 3) and a presentation (outcome 4) to the teacher's e-mail address or via the assignment module on the Merlin course page no later than the scheduled date and date of the exam. | | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | | |
| Attendance  teaching |  | Teaching activity | | | 0,8 | Seminar paper | |  | Experimental work | | |  |  |
| Written exam |  | Viva voce | | |  | Assay | |  | Research | | |  |  |
| Project | 0,8 | Continuous Knowledge Assessment | | | 2,4 | Report | |  | Practical work | | |  |  |
| Portfolio |  |  | | |  |  | |  |  | | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Pisani ispit 1** | **Pisani ispit 2** | **Presentation** | **Project** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | 20% |  |  |  | 0,8 | 10 | 20 | | **OUTCOME 2** | 20% |  |  |  | 0,8 | 10 | 20 | | **OUTCOME 3** |  |  |  | 20% | 0,8 | 10 | 20 | | **OUTCOME 4** |  | 20% |  |  | 0,8 | 10 | 20 | | **OUTCOME 5** |  |  | 20% |  | 0,8 | 10 | 20 | | **Share in ECTS** | **1,6** | **0,8** | **0,8** | **0,8** | **-** |  |  | | **Altogether** | **40** | **20** | **20** | **20** | **100%** | **50 %** | **100 %** |            |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOME** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | 17 | 3 | 0,8 | 20 | | **OUTCOME 2** | 17 | 3 | 0,8 | 20 | | **OUTCOME 3** | 17 | 3 | 0,8 | 20 | | **OUTCOME 4** | 17 | 3 | 0,8 | 20 | | **OUTCOME 5** | 17 | 3 | 0,8 | 20 | | **Share in ECTS** | **3,4** | **0,6** |  |  | | **Altogether** | **85** | **15** | **100%** | **100 %** |       If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | | |
| Title | | | | | | | Number of copies | | | | Number of students | |
| 1. Jakupović, A., Čandrlić, S., Rafajac, O., Širola, D., Šuman, S. (2022). Development of business ideas and documentation of user requirements, University of Rijeka: Faculty of Informatics. | | | | | | | e-edition | | | |  | |
| 2. Miles, I. (2011). Innovation and the Service Economy in Curtis Carlons Innovation. Perspectives for the 21st Century, BBVA. https://www.bbvaopenmind.com/en/articles/innovation-and-the-service-economy/ | | | | | | | E-Mail | | | |  | |
| 1. OECD (2000). The Service Economy. https://www.oecd.org/sti/ind/2090561.pdf | | | | | | | E-Mail | | | |  | |
|  | | | | | | | | | | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | | |
| 1. Allen, J., Reichheld, F. F., Hamilton, B., Markey, R. (2005) Closing the delivery gap, Bain & Company  2. Burns, A. C. & Veeck, A. (2020) Marketing Research, 9th Edition, Pearson  Education, Inc.  3. Chisnal, P. M. (1997) Marketing Research 5th Edition, McGraw Hill  4. Christensen, C. M. (2011) The innovator's dilemma, Harper Business.  5. Diem, P. (2018) Online Research, A Practical Handbook, Austria-Forum  6. Domitran, I. (2014, December 18) How to use the "Six Hats" method? <https://www.poslovnaucinkovitost.eu/kolumne/poslovanje/986-kako-koristiti-metodu-sest-sesira>  7. Dundar, Z. (2017) Design Thinking for Innovative YW [web log]. http://zekdundar.com/design-thinking-for-innovative-youth-work/  8. Brannback M., Carsrud, A. (2015). Fundamentals for Becoming a Successful Entrepreneur: From Business Idea to Launch and Management 1st Edition, Pearson FT Press,  <https://ptgmedia.pearsoncmg.com/images/9780133966817/samplepages/9780133966817.pdf> | | | | | | | | | | | | |
| **13. Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competences** | | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | | |

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| **Course holder** | **Dr. sc. socio. Ida Panev, v. pred.** | | | |
| **Nomenclature** | **Introduction to Databases** | | | |
| **Study program** | **Professional Undergraduate Study of Informatics** | | | |
| **Item Status** | **Binding** | | | |
| **Year / Semester** | **2nd year, 3rd semester** | | | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | | | **5** |
| **Broj sati (P+V+S)** | | | **2+2+0** |
| * 1. **Opis College** | | | | |
| The course trains students to create a relational database and to manage the structure and data in a relational database using SQL. | | | | |
| * 1. **Course objectives** | | | | |
| Acquiring competencies for creating an SQL database and for using SQL in managing structure and data in a relational database. | | | | |
| * 1. **Course Enrolment Requirements** | | | | |
| Attendance of the course: Data Modeling. | | | | |
| * 1. **Expected learning outcomes for the course** | | | | |
| * Explain the concepts related to databases. * Create a database in the database management system and the basic objects and structures in the database (tables, views, keys). * Determine the conditions of entity and referential integrity in the implemented database. * Rearrange an existing database using the selected data manipulation language. * Formulate simple and complex queries over a database in the selected query language. | | | | |
| * 1. **Course content** | | | | |
| Lectures:   * Information system; data modeling; relational theory; relational algebra; * Physical organization of the database; * Data View; data organization – methods of access to data SAM, ISAM, DAM; * Traditional file organization of data; * SUBP; * Access language command categories: DD, DDL, DML, DQL; * Codd's Rules; View, Snapshot; * Triggers; * Transactional approach: ACID, OLTP, OLAP; * Stored procedures; * Indices; * Backup and replica; * Stages of database development.   Exercises:   * SQL: DDL, DML, DQL | | | | |
| * 1. **Types of teaching** | | ☒ Lectures  Seminars and workshops  ☒ Exercises  ☒ Distance education  Field Teaching | ☒ Independent tasks  ☒ Multimedia & Network  Laboratory  ☒ Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| * 1. **Comments** | | | | |
| * 1. **Student obligations** | | | | |
| Students who wish to be assessed through continuous verification at lectures at the agreed times write/submit:   * Theoretical verification * Project   Students who want to be assessed through continuous verification at exercises at agreed times write:   * Practical check 1 * Practical check 2   -------------------  Students who want to take a full exam on the exam period  Are written by:   * Practical check 1 * Practical check 2 * Theoretical verification   Submitted (min 3 days before the registered exam date):   * Project | | | | |
| * 1. **Monitoring student work** | | | | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical verification | Practical check 1 | Practical check 2 | Project | Share in ECTS | Prague | Max | | OUTCOME 1 | 30% |  |  |  | 1,5 | 15% | 30% | | OUTCOME 2 |  | 18% | 2% | 5% | 1 | 12,5% | 25% | | OUTCOME 3 |  | 5% |  |  | 0,25 | 2,5% | 5% | | OUTCOME 4 |  | 5% |  |  | 0,25 | 2,5% | 5% | | OUTCOME 5 |  |  | 30% | 5% | 2 | 17,5% | 35% | | Share in ECTS | 1,5 | 1,5 | 1,5 | 0,5 | 5 | - | - | | Altogether | 30% | 28% | 32% | 10% | 100% | 50 % | 100 % | | | | | |
| * 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Share of ECTS | Max | | OUTCOME 1 |  | **30%** | **1,5** | **30%** | | OUTCOME 2 | **25%** |  | **1** | **25%** | | OUTCOME 3 | **5%** |  | **0,25** | **5%** | | OUTCOME 4 | **5%** |  | **0,25** | **5%** | | OUTCOME 5 | **35%** |  | **2** | **35%** | | Share in ECTS | **3,5** | **1,5** | **5** | **-** | | Altogether | **70%** | **30%** | **-** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | |
| * 1. **Compulsory literature (at the time of application for the study programme)** | | | | |
| |  |  | | --- | --- | | Title | Available in the library of the Polytechnic of Rijeka (0, N or e-edition) | | 1. Materials used in lectures and exercises from the course Introduction to Databases, available in online form on the Merlin system. 2. Manger, R: Databases, Element, Zagreb, 2012. | e-edition  3 | | | | | |
| * 1. **Supplementary literature (at the time of application for the study programme)** | | | | |
| 1. Kaluža, M: Database Systems, Skripta, Polytechnic of Rijeka, Rijeka, 2008. 2. Manger, R: Databases, Skripta, PMF, Zagreb, 2011. Available at:   <https://dokumen.tips/documents/robert-manger-baze-podatakapdf.html>   1. Pavlić, M.: Database Design, University of Rijeka, Rijeka, 2011. 2. Pavlić, M: Information Systems, University of Rijeka, Rijeka, 2009. 3. SQL tutorial, dostupno na: <https://www.w3schools.com/sql/default.asp> 4. Varga, M.: Databases: Conceptual, Logical, and Physical Data Modeling. Zagreb: own edition, 2021. Available at: <https://books.google.hr/books?id=UQPoDwAAQBAJ&lpg=PA1&ots=NosGTXlMAR&lr&hl=hr&pg=PP2#v=onepage&q&f=false> | | | | |
| * 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | |

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| **Course holder** | **Assoc. Prof. Prof. Dr. Sc. Socio. Prof. Alen Jakupović, prof. struč. Stud.**  **Bruno Polonijo- assistant** | |
| **Nomenclature** | **Introduction to Computer Networks** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Compulsory** | |
| **Year / Semester** | **2/3** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | |
| The course deals with the basic concepts necessary for the establishment of a wired and wireless local computer network and the establishment of basic network services (basic network devices, computer identification in a computer network, network services, DHCP, DNS, WEB, FTP, E-MAIL, remote work).  By applying the basic concepts, students will establish a wired and wireless network infrastructure over which they will implement selected network services. | | |
| 1. **Course objectives** | | |
| Adopt the basic concepts necessary for the establishment of wired and wireless computer networks, and the implementation of selected network services.  Establish a simpler wired and wireless local area network.  Implement the basic functions of selected network services. | | |
| 1. **Course Enrolment Requirements** | | |
| There are no conditions. | | |
| 1. **Expected learning outcomes for the course** | | |
| 1. Explain the principle of operation of a computer network according to the layer model 2. Apply network addressing with testing in a simulation program 3. Configure the switch to work with VLANs 4. Use basic online security settings 5. Configure a small home and/or office network with Internet access 6. Apply web application layer protocols using appropriate implemented solutions. | | |
| 1. **Course content** | | |
| * Computer network and protocol in a computer network   + Definition of computer network and protocol   + Basic parts of a computer network that emerge from the definition   + Types of protocols * Types of computer networks   + Local, Global, Campus Network, City Network, Home Network, Personal Network, Internet (Definition & Basic Properties) * Benefits and main problems of computer networks   + Benefits: resource sharing, openness, parallel operation, scalability, robustness, transparency   + Disadvantages: complexity, reduced security, difficult management, unpredictability of service quality * OSI and TCP/IP communication model   + Layers of the OSI model (description, purpose)   + Layers of the TCP/IP model (description, purpose)   + The relationship between OSI and TCP/IP * Basic network devices used in the establishment of wired and wireless computer networks   + Network Switch (Purpose, Basic Functions)   + Access Point (Purpose, Basic Functions)   + Network router (purpose, basic functions)   + Firewall (purpose, basic functions) * Identifying Computers in a Computer Network   + Physical addressing (purpose, example)   + Logical addressing (purpose, example)   + Symbolic addressing (purpose, example)   + The Relationship Between Physical, Logical, and Symbolic Addressing * Network masks and IP address.   + IP address (purpose, example)   + Network mask (purpose, example)   + The relationship between the network mask and the IP address   + Static and dynamic IP address assignment   + The IP address of the default gateway. * Online Services   + DHCP server (purpose, basic functions)   + DNS server (purpose, basic functions)   + WEB server (purpose, basic functions)   + FTP server (purpose, basic functions)   + E-mail server (purpose, basic functions)   + Remote access to the computer (purpose, basic functions) | | |
| 1. **Types of teaching** | ☒ Lectures  Seminars and workshops  ☒ Exercises  ☒ Distance education  Field Teaching | ☒ Independent tasks  ☒ Multimedia & Network  Laboratory  ☒ Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. **Comments** | | |
| The obligations of students are:   1. Create all planned activities in class 2. Access continuous checks | | |
| 1. **Monitoring student work** | | |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Practical tasks | Share of ECTS | Prague | Max | | OUTCOME 1 | **5%** |  | **0,25** | **2,5%** | **5%** | | OUTCOME 2 | **5%** | **15%** | **1** | **10%** | **20%** | | OUTCOME 3 |  | **5%** | **0,25** | **2,5%** | **5%** | | OUTCOME 4 |  | **10%** | **0,5** | **5%** | **10%** | | OUTCOME 5 | **10%** | **10%** | **1** | **10%** | **20%** | | OUTCOME 6 | **10%** | **30%** | **2** | **20%** | **40%** | | Share in ECTS | **1,5** | **3,5** | **5** | **-** | **-** | | Altogether | **30%** | **70%** | **100%** | **50%** | **100%** |   **The condition for taking the full exam is a project that is defended on the exam period (oral exam). A written test consisting of practical tasks is also written during the exam period.**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Max | | OUTCOME 1 | **5%** |  | **5%** | | OUTCOME 2 | **5%** | **15%** | **20%** | | OUTCOME 3 |  | **5%** | **5%** | | OUTCOME 4 |  | **10%** | **10%** | | OUTCOME 5 | **10%** | **10%** | **20%** | | OUTCOME 6 | **10%** | **30%** | **40%** | | Share in ECTS | **1,5** | **3,5** | **-** | | Altogether | **30%** | **70%** | **100%** | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | |
| |  |  | | --- | --- | | Title | Available in the library of the Polytechnic of Rijeka (0, N or e-edition) | | 1. Andrew Tanenbaum, Nick Feamster, David Wetherall: Computer Networks, Global Edition, Pearson, 2021. |  | | 1. Larry L. Peterson, Bruce S. Davie: Computer Networks: A Systems Approach, Morgan Kaufmann, 2021. |  | | 1. Authorized Lectures | e-edition | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | |
| 1. Data Communication & Computer Network, https://www.tutorialspoint.com/data\_communication\_computer\_network/index.htm, 5.9.2021. 2. Internet Technologies Tutorial, https://www.tutorialspoint.com/internet\_technologies/index.htm, 5.9.2021. 3. IPv4 Tutorial, https://www.tutorialspoint.com/ipv4/index.htm, 5.9.2021. 4. Computer Network Tutorial, https://www.javatpoint.com/computer-network-tutorial, 5.9.2021. 5. Computer Network Tutorial for Beginners, https://www.guru99.com/data-communication-computer-network-tutorial.html, 5.9.2021. 6. Douglas E. Comer: Internetworking with TCP/IP, Vol 1 (5th Edition), Prentice Hall, 2005 7. Laura A.Chappell, Ed Tittel: Guide to TCP/IP, Course Technology, 2002 | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | |

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| **Course holder** | **Ivan Šimac, mag. educ. inf., pred.** | |
| **Nomenclature** | **Application programming interface (API) development** | |
| **Study program** | **Undergraduate Professional Study of Informatics** | |
| **Item Status** | **Required** | |
| **Year** | **2023/2024** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **6** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| 1. **Course description** | | | | | | | | | | |
| The course studies service-oriented software architecture (SOA) and the types of technical implementation of such software. Techniques and development frameworks for web service development are studied. Testing tools are used and testing of the created web service is carried out. | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | |
| Acquisition of competencies for the development and testing of web services. | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | |
| Introduction to Databases, Procedural and Modular Programming, Fundamentals of Object-Oriented Programming | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | |
| 1. Prepare the working environment for application development 2. Set up a repository and install a versioning tool 3. Use a database administration tool 4. Implement an application programming interface 5. Set up the application programming interface in the production environment 6. Create user documentation for the results of their own software development. 7. Specify and design (design) the structure of the application programming interface 8. Apply an application programming interface testing tool | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | |
| Lectures:   * Service-Oriented Software Architecture (SOA)   + Forms of technical implementation of web services (SOAP, REST)   + XML   + SOAP envelope shapes   + XML signature, XML encryption   + Richardson maturity model (RMM)   + HATEOAS * Tools and procedures for service development   + IDE (Forms, Options, Reasons for Use)   + RESTED   + Repositories (Git)   + Development (full debug mode), test (executable form, restriction to internal work), production version (executable form) of the software   + Deploy web servisa (batch, powershell skripte). * Creating web service documentation   + Development documentation   + User documentation   + Documentation generation * Service testing   + Types of web service testing   + HTTP Exceptions   + Tools for automated testing of web services   Exercises   * Setting up a relational database server and setting up clients for database administration * Setting up a Git repository and implementing a repository in an IDE * Creating a REST web service with basic CRUD actions | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒Lectures  ☐Seminars and workshops  ☒Exercises  ☒Distance education  ☐Field Teaching | | | | ☒Independent tasks  ☒Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | |
| 1. Take the theoretical written exam 2. Prepare and present project documentation 3. Create and defend a project (part of your study project – API implementation) | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | |
| Attending classes | 2,5 | Teaching activity | | |  | Seminar paper |  | | Experimental work |  |
| Written exam | 1 | Viva voce | | |  | Assay |  | | Research |  |
| Project | 2,5 | Continuous Knowledge Assessment | | |  | Report |  | | Practical work |  |
| Portfolio |  |  | | |  |  |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Project documentation – development and user documentation | Project defense | Share of ECTS | Prague | Max | | OUTCOME 1 |  |  | **5%** | **0,3** | **2,5%** | **5%** | | OUTCOME 2 |  |  | **5%** | **0,3** | **2,5%** | **5%** | | OUTCOME 3 |  |  | **5%** | **0,3** | **2,5%** | **5%** | | OUTCOME 4 | **25%** |  | **25%** | **3** | **25%** | **50%** | | OUTCOME 5 |  |  | **5%** | **0,3** | **2,5%** | **5%** | | OUTCOME 6 |  | **10%** |  | **0,6** | **5%** | **10%** | | OUTCOME 7 |  | **10%** |  | **0,6** | **5%** | **10%** | | OUTCOME 8 |  |  | **10%** | **0,6** | **5%** | **10%** | | Share in ECTS | **1,5** | **1,2** | **3,3** | **6** | **-** | **-** | | Altogether | **25%** | **20%** | **55%** | **100%** | **50%** | **100%** |   **The condition for taking the full exam is a project that is defended on the exam period (oral exam). A written examination is also written on the full exam.**  A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Max | | OUTCOME 1 |  | 5% | **5%** | | OUTCOME 2 |  | 5% | **5%** | | OUTCOME 3 |  | 5% | **5%** | | OUTCOME 4 | 25% | 25% | **50%** | | OUTCOME 5 |  | 5% | **5%** | | OUTCOME 6 |  | 10% | **10%** | | OUTCOME 7 |  | 10% | **10%** | | OUTCOME 8 |  | 10% | **10%** | | Share in ECTS | **1,5** | **4,5** | **-** | | Altogether | **25%** | **75%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | And | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | |
| Title | | | | Number of copies | | | | Number of students | | |
| Authorized Lectures | | | | e-edition | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | |
| 1. Šljivar, A., Kaluža, M.: Proposal of the methodology for building and classifying RESTful web services, Development of business and information systems CASE 29, 27.02.-28.02.2017., Zagreb, ISSN 1334-448X, p. 27-36 2. Kaluža, M., Šljivar, A.: Possibilities of Building REST Web Services and Achieving the HATEOAS RMM Level, Development of Business and Information Systems CASE 28, 06.06.-07.06.2016., Zagreb, ISSN 1334-448X, p. 45-54 3. Kaluža, M., Majkić, D., Sušanj, I., Šimunović, B.: REST web service, Development of business and information systems CASE 25, June 2013, Zagreb, ISSN 1334-448X 4. Španja, H., Kaluža, M., Šuman, S.: Overview of the possibilities of source code protection, Development of business and information systems CASE 2019, 25.02.-26.02.2019., Zagreb, ISSN 1334-448X, p. 43-55 5. Čančar, I., Abazović, D., Kaluža, M.: Use of Relational Database Data Dictionary for the Purpose of Generating Business Web Applications, Development of Business and Information Systems CASE 30, 26.02.-27.02.2018., Zagreb, ISSN 1334-448X, p. 47-56 | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | |

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| **Course holder** | **Marina Rauker Koch - v.lecturer**  **Maria Krajči- assistant** | |
| **Nomenclature** | **Multimedia systems** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Mandatory** | |
| **Year** | **2. / III.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | |
| The course covers methods of creating and editing audio and video recordings into digital formats that are adapted for the web, social networks, digital marketing or presentations. In addition, students acquire the competencies necessary to create a quality user interface (UI) that affects the positive user experience (UX) of using certain software. | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | |
| Acquiring knowledge and skills on editing digital forms of audio and video and creating a multimedia presentation using multimedia standards in selected software tools. Application of guidelines for creating a graphical user interface. | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | |
| No conditions | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | |
| 1. Discuss features, trends and future development of multimedia systems. 2. Interpret the principles and guidelines of designing multimedia elements. 3. Record, process, and adjust video and audio for the web by selecting the appropriate compression standard. 4. Include multimedia tracks in a complete presentation using multimedia standards. 5. Select the appropriate multimedia content and embed it in the HTML document. 6. To build a graphical interface in accordance with theoretical and practical concepts and recommendations for building graphical interfaces and standards and recommendations for the appearance of a graphical interface in the selected graphical operating system. | | | | | | | | | |
| 1. **Course content** | | | | | | | | | |
| * Features of Multimedia Digital Forms * Trends in the use of multimedia - augmented and virtual reality, science, education... * Features of video and audio formats * Video and audio editing. * Embedding multimedia in HTML * Guidelines for creating a multimedia presentation * Creating a multimedia presentation (video format) * UI user interface - application of UX principles * Creating wireframes, screens and prototypes of application interfaces | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☐Exercises**  ☐Distance education  ☐Field Teaching | | | **☐Independent tasks**  **☐Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | |
| Attendance at exercises of at least 70%;  Actively participate in solving practical tasks in lectures and exercises; Present the created project assignment from the selected topic - preparation of documentation | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | |
| Attending classes | 2 | Teaching activity | |  | Seminar paper |  | Experimental work | |  |
| Written exam | 0,5 | Viva voce | |  | Assay |  | Research | |  |
| Project | 1,5 | Continuous Knowledge Assessment | |  | Report |  | Practical work | | 1 |
| Portfolio |  |  | |  |  |  |  | |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written exam** | **Practical task** | **Project work** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **15 %** |  |  | **0,75** | **5%** | **15 %** | | **OUTCOME 2** | **15 %** |  |  | **0,75** | **5%** | **15 %** | | **OUTCOME 3** |  |  | **15%** | **0,75** | **7,5%** | **15%** | | **OUTCOME 4** |  |  | **20%** | **0,75** | **10%** | **20%** | | **OUTCOME 5** |  |  | **20%** | **0,5** | **10%** | **20%** | | **OUTCOME 6** |  | **15%** |  | **1,5** | **7,5%** | **15%** | | **Share in ECTS** | **1,5** | **0,5** | **3** | **5** | **-** | **-** | | **Altogether** | **30 %** | **15%** | **55%** | **100%** | **50 %** | **100 %** |     Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **15 %** |  | **0,75** | **5%** | **15 %** | | **OUTCOME 2** | **15 %** |  | **0,75** | **5%** | **15 %** | | **OUTCOME 3** |  | **15%** | **0,75** | **7,5%** | **15%** | | **OUTCOME 4** |  | **20%** | **0,75** | **10%** | **20%** | | **OUTCOME 5** |  | **20%** | **0,5** | **10%** | **20%** | | **OUTCOME 6** |  | **15%** | **1,5** | **7,5%** | **15%** | | **Share in ECTS** | **3,5** | **1,5** | **5** | **-** | **-** | | **Altogether** | **30 %** | **70%** | **100%** | **50 %** | **100 %** |       If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | |
| Title | | | | | | | Number of copies | Number of students | |
| 1. Dunato, Nela,The human centered brand : a pracitical guide to being yourself in business ,Nela Dunato Art & Design, 2018 | | | | | | | 10 |  | |
| 1. <https://shotcut.org/tutorials/> | | | | | | |  |  | |
| 1. <https://www.figma.com/> | | | | | | |  |  | |
| 1. <https://uizard.io/> | | | | | | |  |  | |
| 1. <https://balsamiq.com/> | | | | | | |  |  | |
| 1. <https://www.w3schools.com/html/html_media.asp> | | | | | | |  |  | |

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| 1. **Supplementary literature (at the time of application for the study programme)** |
| 1. <https://affinity.serif.com/en-gb/learn/> 2. Vaughan, T., Multimedia: Making It Work. Osborne McGraw-Hil, 2008. 3. [Dayley](http://eu.wiley.com/WileyCDA/Section/id-302479.html?query=Brad+Dayley), B., [Dayley](http://eu.wiley.com/WileyCDA/Section/id-302479.html?query=DaNae+Dayley),D.,Adobe Photoshop CS6 Bible,Wiley and Sons, 2012. |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. |

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| **Course holder** | **Dr. sc. human. Tatjana Schepp, Prof. Schlag. Stud.** | |
| **Nomenclature** | **English Language for Designers** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Required** | |
| **Year / Semester** | **2.g. 3. semestar** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **4** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | |
| The course includes work on professional texts that deal with basic concepts in the field of information sciences such as databases, computer networks, object-oriented technologies, programming, multimedia, communication systems, artificial intelligence. | | |
| 1. **Course objectives** | | |
| To introduce students to the basic professional terminology in selected areas of information sciences, the mechanisms of formation of professional terminology, as well as typical grammatical structures and stylistic features of professional texts. Developing language competencies for participation in communication in the profession in oral and written form. | | |
| 1. **Course Enrolment Requirements** | | |
| There are no conditions. | | |
| 1. **Expected learning outcomes for the course** | | |
| Understand and explain the content of professional texts in the field of databases, software engineering, object-oriented technologies, multimedia systems, communication systems, artificial intelligence.  Use the acquired professional vocabulary in a new context.  Explain grammatical structures and rules (contractual sentences, administrative/non-administrative speech) in the context of professional texts.  Use grammatical structures in the new context of professional content.  Understand the main ideas of standard speech on topics in the field of computer science.  Translate a short professional text into English or from English into Croatian.  Prepare and hold an oral presentation on a well-known topic in the field of information sciences and participate in the discussion after the presentation. | | |
| 1. **Course content** | | |
| * Databases * Software Engineering * Object-oriented Technologies * Computer Networks * Multimedia * Communication Systems * Artificial Intelligence * Future Trends * If-clauses (Conditional Clauses) * Reported Speech (Sequence of Tenses) * Phrasal verbs * Collocations * Word formation – Prefixes and Suffixes | | |
| 1. **Types of teaching** | **xLectures**  ☐Seminars and workshops  **xExercises**  ☐Distance education  ☐Field Teaching | **xStandalone tasks**  **☐Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. **Comments** | | |
| 1. **Student obligations** | | |
| Students are obliged to attend classes regularly, actively participate in their implementation and create assignments. They also have the obligation to pass the 5th outcome (presentation) during classes, i.e. before going to the exam periods. Passing the 5th outcome is a condition for attending the exam period, where students can take a maximum of two outcomes out of a total of 4 outcomes that are taken in writing. In exceptional cases (e.g. holding the exam online), the written verification of these four outcomes may be replaced by an oral examination. | | |
| 1. **Monitoring student work** | | |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Colloquij 1** | **Colloquia**  **2** | **Exposure** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **20%** |  |  | **0,75** | **10%** | **20 %** | | **OUTCOME 2** | **20%** |  |  | **0,75** | **10%** | **20 %** | | **OUTCOME 3** |  | **20%** |  | **0,75** | **10%** | **20 %** | | **OUTCOME 4** |  | **20%** |  | **0,75** | **10%** | **20 %** | | **OUTCOME 5** |  |  | **20%** | **1** | **10%** | **20%** | | **Share in ECTS** | **1,25** | **1,25** | **0,50** | **3** |  |  | | **Altogether** | **40 %** | **40%** | **20%** | **100%** | **50 %** |  | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | **20%** |  | **0,75** | **20%** | | **OUTCOME 2** | **20%** |  | **0.75** | **20%** | | **OUTCOME 3** | **20%** |  | **0,75** | **20%** | | **OUTCOME 4** | **20%** |  | **0,75** | **20%** | | **OUTCOME 5** |  | **20%** | **1** | **20%** | | **Share in ECTS** | **2,5** | **0,50** |  |  | | **Altogether** | **2,5** | **0,50** | **3** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | |
| 1. **Mandatory literature** | | |
| 1. E. H. Glendinning, J. McEwan, *Oxford English for Information Technology*,  Oxford University Press, 2014. (dio)  2. Esteras, S. R., Fabré, E. M., *Professional English in Use ICT*, Cambridge  University Press, 2007 (dio). | | |
| 1. **Dopus Literature** | | |
| 1. Emmerson, P., Business Grammar Builder, MacMillan, 2010.  2. Kiš, M., School Informatics Dictionary, Zagreb, Naklada Ljevak, 2003.  3. Bujas, Ž., The Great Croatian-English Dictionary, Globus, Zagreb, 2011. | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | |

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| **Course holder** | **Dr.sc. Bernard Vukelić, prof.struč.stud.**  **Bruno Polonijo- assistant**  **Matea Pešut, assistant** | |
| **Nomenclature** | **Advanced themes from operating systems** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Electoral** | |
| **Year / Semester** | **3/5** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| * 1. **Course description** | | | | | | | | | | | |
| The course teaches advanced knowledge in the field of operating systems. The thematic units of the course deal with current topics: the use of command shells in different operating systems, the functionality of network and mobile operating systems, the application of virtualization at the level of operating systems. Students analyze these topics through examples. | | | | | | | | | | | |
| * 1. **Course objectives** | | | | | | | | | | | |
| The aim of the course is to acquire knowledge about advanced concepts, elements and functionalities of modern operating systems. | | | | | | | | | | | |
| * 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| Attended course Operating Systems | | | | | | | | | | | |
| * 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| * Compare command shells in operating systems * Explain the functionalities of network operating systems * Explain the application of virtualization at the level of operating systems * Determine the types, architecture, and functionality of mobile operating systems | | | | | | | | | | | |
| * 1. **Course content** | | | | | | | | | | | |
| * Advanced Application of Command Shells in GNU Linux and Windows Operating Systems * Automate tasks by applying command scripts * Installation and configuration of the Windows network operating system * Creating and managing Group Policy * Operating system-level virtualization * Running User Application Virtual Space Instances Containers) * Types of mobile operating systems * Architecture of mobile operating systems | | | | | | | | | | | |
| * 1. **Types of teaching** | | | **☒ Lectures**  Seminars and workshops  **☒ Exercises**  Distance education  Field Teaching | | | | **☒ Independent tasks**  **Multimedia & Network**  Laboratory  Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| * 1. **Comments** | | | | | | | | | | | |
| * 1. **Student obligations** | | | | | | | | | | | |
| Access continuous assessments Create an assignment on your own | | | | | | | | | | | |
| * 1. **Monitoring[[2]](#footnote-2) student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam |  | Viva voce | | |  | Essay | |  | | Research |  |
| Project | 1 | Continuous Knowledge Assessment | | | 2 | Report | |  | | Practical work |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| * 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical verification** | **Written practical test** | **Task** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **10%** | **10%** | **30%** | **2,5** | **25%** | **50%** | | **OUTCOME 2** |  | **20%** | **10%** | **1,5** | **15%** | **30%** | | **OUTCOME 3** | **10%** |  |  | **0,5** | **5%** | **10%** | | **OUTCOME 4** | **10%** |  |  | **0,5** | **5%** | **10%** | | **Share in ECTS** | **1,5** | **1,5** | **2** |  | **-** | **-** | | **Altogether** | **30%** | **30%** | **40%** | **100%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | **10%** | **40%** | **2,5** | **50%** | | **OUTCOME 2** |  | **30%** | **1,5** | **30%** | | **OUTCOME 3** | **10%** |  | **0,5** | **10%** | | **OUTCOME 4** | **10%** |  | **0,5** | **10%** | | **Share in ECTS** | **1,5** | **1,5** | 5 |  | | **Altogether** | **30%** | **70%** | **100 %** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| * 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Bertram A.: PowerShell for Administrators, Microbook, 2021. | | | | in the procurement plan (7) | | | | |  | | |
| Materials used in lectures and exercises, available on the Merlin system | | | | e-edition | | | | |  | | |
| * 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. OPERATING SYSTEM CONCEPTS 10th Edition, Silberschatz, Galvine, Gagne, Sixth Edition, John Wiley & Sons, Inc. 2018.; MODERN OPERATING SYSTEMS 2. Dent C.: Mastering PowerShell Scripting: Automate and manage your environment using PowerShell, 2021. 3. Blum R.: Linux Command Line and Shell Scripting Bible, 2021. 4. The Art of Service - Mobile Operating System Publishing, Mobile Operating System A Complete Guide, 2021. | | | | | | | | | | | |
| * 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | | | **dr. sc. tech. Andrea Andrijašević, pred.** | | | | | | | | | | |
| **Nomenclature** | | | **The Basics of Procedural Programming** | | | | | | | | | | |
| **Study program** | | | **Professional Undergraduate Study of Informatics** | | | | | | | | | | |
| **Item Status** | | | **electoral** | | | | | | | | | | |
| **Year** | | | **1.** | | | | | | | | | | |
| **Point value and method of teaching** | | | **ECTS coefficient of student workload** | | | | | | | **6** | | | |
| **Broj sati (P+V+S)** | | | | | | | **2+2+0** | | | |
| 1. **Course description** | | | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | | | |
| The aim of the course is to train students to analyze the problem and apply the basic concepts in creating a computer program in a procedural programming language. | | | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | | | |
| 1. Create a computer program using line and branched structure and show the algorithmic solution with pseudocode and block diagram. 2. Design a computer program using a cyclic structure and present an algorithmic solution using pseudocode and block diagram. 3. Write a complex computer program in a procedural language using complex data types, functions, pointers, and structures to control the flow of the program. 4. Develop a computer program that allows you to read and write to files. | | | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | | | |
| Algorithm. Variable. Data types. Operators. Commands. Implementation of a line algorithmic structure in a selected procedural programming language and its notation with pseudocode and block diagram. Implementation of a branched algorithmic structure in a selected procedural programming language and its recording with pseudocode and block diagram. Implementation of a cyclic algorithmic structure in a selected procedural programming language and its recording with pseudocode and block diagram. One-dimensional and two-dimensional arrays of numbers and signs. Strings. Functions. Cursors. Work with files. | | | | | | | | | | | | | |
| 1. **Types of teaching** | | | | * Lectures * Seminars and workshops * Exercises * Distance education * Field Teaching | | | | | * Independent tasks * Multimedia & Network * Laboratory * Mentoring work * Other   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | | | |
| - | | | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | | | |
| Attendance at classes and control assignments. Creating and defending a practical task. | | | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | | |  | Seminar paper |  | | | | Experimental work |  |
| Pisani ispit\* |  | Oral exam\* | | | |  | Assay |  | | | | Research |  |
| Project | 0,5 | Continuous Knowledge Assessment | | | | 3,5 | Report |  | | | | Practical work |  |
| Portfolio |  |  | | | |  |  |  | | | |  |  |
| \* If the student is not exempt from the exam through colloquiums or continuous testing of knowledge during classes. | | | | | | | | | | | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  Continuous verification:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | 1. Control task | 2. Control task | Practical task | Prague | Max | | OUTCOME 1 | 20 |  |  | 10 | 20 | | OUTCOME 2 | 25 |  |  | 12,5 | 25 | | OUTCOME 3 |  | 35 | 10 | 22,5 | 45 | | OUTCOME 4 |  | 10 |  | 5 | 10 | | Share in ECTS | 2,5 | 2,5 | 1 | - | - | | Altogether | 45 | 45 | 10 | 50 | 100 |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Full exam:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Prague | Max | | OUTCOME 1 | 10 | 10 | 10 | 20 | | OUTCOME 2 | 12,5 | 12,5 | 12,5 | 25 | | OUTCOME 3 | 22,5 | 22,5 | 22,5 | 45 | | OUTCOME 4 | 5 | 5 | 5 | 10 | | Share in ECTS | 3 | 3 | - | - | | Altogether | 50 | 50 | 50 | 100 |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | | | | | | | |
| 1. **Mandatory literature** | | | | | | | | | | | | | |
| 1. Jakupović, A., Šuman, S.: Basics of Programming, Polytechnic of Rijeka, Rijeka, 2020. 2. Jurak, M.: Programming Language C, PMF, Script 3. Mateljan, I.: Programming in C Language, FESB, Script | | | | | | | | | | | | | |
| 1. **Dopus Literature** | | | | | | | | | | | | | |
| 1. Kusalić, D.: Advanced Programming and Algorithms in C and C++, Element, Zagreb, 2014. 2. McConnell, S.: Code from the Inside, Znak, Zagreb, 1995. 3. Čukman, T., Bolt, V.: C/C++, Procon, Zagreb, 1994. 4. Eckel, B.: Thinking in C++ | | | | | | | | | | | | | |
| 1. **Number of copies of compulsory literature in relation to the number of students currently attending classes in the course** | | | | | | | | | | | | | |
| Title | | | | | Number of copies | | | | | | Number of students | | |
| Jakupović, A., Šuman, S.: Basics of Programming, Polytechnic of Rijeka, Rijeka, 2020. | | | | | Online Available | | | | | |  | | |
| Jurak, M.: Programming Language C, PMF, Script | | | | | Online Available | | | | | |  | | |
| Mateljan, I.: Programming in C Language, FESB, Script | | | | | Online Available | | | | | |  | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | | | |
| Quality monitoring is carried out through the procedures of surveying the quality of teaching in courses, checking the methods of testing, evaluation and assessment with teaching methods and learning outcomes, and monitoring passing. Data is collected through online questionnaires when it comes to surveys or by collecting data from key stakeholders (teachers, external associates and students) through prepared tables and forms. | | | | | | | | | | | | | |

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| **Course holder** | | **Assoc. Prof. Prof. Dr. Sc. Socio. Prof. Alen Jakupović, prof. Stud.** | | |
| **Nomenclature** | | **Introduction to IoT Systems** | | |
| **Study program** | | **Professional Undergraduate Study of Informatics** | | |
| **Item Status** | | **Electoral** | | |
| **Year / Semester** | | **2/1** | | |
| **Point value and method of teaching** | | **ECTS coefficient of student workload** | | **5** |
| **Broj sati (P+V+S)** | | **2+2+0** |
| 1. **Course description** | | | | |
| The course deals with the basic concepts related to the development of IoT systems: sensors, actuators and the development of a software solution for an IoT system.  By applying basic concepts, students will create a prototype of a less complex IoT system that includes a hardware and software component. | | | | |
| 1. **Course objectives** | | | | |
| Adopt the basic concepts necessary for the development of the hardware and software part of the IoT system.  Use the technical documentation of the sensor and actuator.  Create a prototype of a less complex IoT system. | | | | |
| 1. **Course Enrolment Requirements** | | | | |
| There are no conditions. | | | | |
| 1. **Expected learning outcomes for the course** | | | | |
| 1. Use the technical documentation of selected sensors and actuators in the IoT system. 2. Create a prototype of a less complex IoT system in accordance with a given specification. 3. Select the appropriate external libraries to control the selected sensors and actuators. 4. Create a software solution for an IoT system with integrated appropriate external libraries. 5. Integrate asynchronous client-server communication | | | | |
| 1. **Course content** | | | | |
| * Establishing a software development environment   + Integrated development environment   + Extensions of the Integrated Development Environment   + Development framework * Basics of programming in the C programming language   + Variable declaration and standard input/output   + Managing during the program   + Features   + Data fields   + Cursors * Microcontrollers   + Basic properties   + Connecting the microcontroller to the development computer * Microcontroller Programming   + Working with digital output   + Work with digital input   + Working with an analogue-to-digital converter   + Working with the sensor   + Connecting to a wireless network   + API Function Call | | | | |
| 1. **Types of teaching** | ☒ Lectures  Seminars and workshops  ☒ Exercises  ☒ Distance education  Field Teaching | | ☒ Independent tasks  ☒ Multimedia & Network  ☒ Laboratory  ☒ Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 1. **Comments** | | | | |
| 1. **Student obligations:** | | | | |
| * + - 1. Create all planned activities in class       2. Access continuous checks | | | | |
| 1. **Monitoring student work** | | | | |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Project defense | Share of ECTS | Prague | Max | | OUTCOME 1 | **10%** |  | **0,5** | **5%** | **10%** | | OUTCOME 2 | **5%** | **25%** | **1,5** | **15%** | **30%** | | OUTCOME 3 |  | **15%** | **0,75** | **7,5%** | **15%** | | OUTCOME 4 | **5%** | **25%** | **1,5** | **15%** | **30%** | | OUTCOME 5 |  | **15%** | **0,75** | **7,5%** | **15%** | | Share in ECTS | **1** | **4** | **5** | **-** | **-** | | Altogether | **20%** | **80%** | **100%** | **50%** | **100%** |   **The condition for taking the full exam is a project that is defended on the exam period (oral exam). A written test consisting of practical tasks is also written during the exam period.**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Max | | OUTCOME 1 | **10%** |  | **5%** | | OUTCOME 2 | **5%** | **25%** | **20%** | | OUTCOME 3 |  | **15%** | **5%** | | OUTCOME 4 | **5%** | **25%** | **10%** | | OUTCOME 5 |  | **15%** | **20%** | | Share in ECTS | **1** | **4** | **-** | | Altogether | **20%** | **80%** | **100%** | | | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | |
| 1. **Mandatory literature** | | | | |
| |  |  | | --- | --- | | Title | Available in the library of the Polytechnic of Rijeka (0, N or e-edition) | | 1. Espressif - Get Started, <https://docs.espressif.com/projects/esp-idf/en/stable/esp32/get-started/index.html> | e-edition | | 1. How to run a C program in Visual Studio Code?, <https://www.javatpoint.com/how-to-run-a-c-program-in-visual-studio-code> | e-edition | | 1. Visual Studio Code, <https://code.visualstudio.com/> | e-edition | | 1. VS Code ESP-IDF Extension - Installation, <https://github.com/espressif/vscode-esp-idf-extension/blob/master/docs/tutorial/install.md> | e-edition | | 1. C Programming Language Tutorial, <https://www.javatpoint.com/c-programming-language-tutorial> | e-edition | | 1. C Tutorial, <https://www.tutorialspoint.com/cprogramming/index.htm> | e-edition | | 1. C Tutorial, <https://www.w3schools.in/c-tutorial> | e-edition | | 1. Jakupović, A.; Šuman, S.: Fundamentals of Programming, <https://www.veleri.hr/sites/default/files/2021-07/osnove_programiranja_konacna_verzija_online_verzija.pdf> | e-edition | | 1. CP210x USB to UART Bridge VCP Drivers, <https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers?tab=downloads> | e-edition | | 1. ESP32-DevKitC V4 Getting Started Guide, [https://docs.espressif.com/projects/esp-idf/en/latest/esp32/hw-reference/esp32/get-started-devkitc.html#](https://docs.espressif.com/projects/esp-idf/en/latest/esp32/hw-reference/esp32/get-started-devkitc.html%23) | e-edition | | 1. Establish Serial Connection with ESP32, <https://docs.espressif.com/projects/esp-idf/en/latest/esp32/get-started/establish-serial-connection.html> | e-edition | | 1. Getting Started with the ESP32 Development Board, <https://randomnerdtutorials.com/getting-started-with-esp32/> | e-edition | | 1. Microcontroller and its Types, <https://www.geeksforgeeks.org/microcontroller-and-its-types/> | e-edition | | 1. Blink Example, <https://github.com/espressif/esp-idf/tree/32472536715d674c160a2565795895e0273f8cde/examples/get-started/blink> | e-edition | | 1. Example: GPIO, <https://github.com/espressif/esp-idf/tree/32472536715d674c160a2565795895e0273f8cde/examples/peripherals/gpio/generic_gpio> | e-edition | | 1. GPIO & RTC GPIO, <https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/peripherals/gpio.html> | e-edition | | 1. Hello World Example, <https://github.com/espressif/esp-idf/tree/32472536715d674c160a2565795895e0273f8cde/examples/get-started/hello_world> | e-edition | | 1. Controlling ESP32 GPIO with ESP-IDF, [https://embeddedexplorer.com/esp32-gpio-tutorial/#:~:text=To%20configure%20a%20GPIO%20pin,pin%200%2C%20pass%20in%20GPIO\_NUM\_0%20.](https://embeddedexplorer.com/esp32-gpio-tutorial/%23:~:text=To%20configure%20a%20GPIO%20pin,pin%200%2C%20pass%20in%20GPIO_NUM_0%20.) | e-edition | | 1. ESP32 Push Button with ESP-IDF (Digital Input), [https://esp32tutorials.com/esp32-push-button-esp-idf-digital-input/#google\_vignette](https://esp32tutorials.com/esp32-push-button-esp-idf-digital-input/%23google_vignette) | e-edition | | 1. FreeRTOS (ESP-IDF), <https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/system/freertos_idf.html> | e-edition | | 1. Analog to Digital Converter (ADC) Oneshot Mode Driver, <https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/peripherals/adc_oneshot.html> | e-edition | | 1. ESP32 ADC – Read Analog Values with Arduino IDE, <https://randomnerdtutorials.com/esp32-adc-analog-read-arduino-ide/> | e-edition | | 1. ESP32 ADC with ESP-IDF Measure Analog Inputs, <https://esp32tutorials.com/esp32-adc-esp-idf/> | e-edition | | 1. DHT, <https://github.com/UncleRus/esp-idf-lib/tree/master/components/dht> | e-edition | | 1. DHT22 with ESP32 ESP-IDF and Display Readings on OLED, <https://esp32tutorials.com/dht22-esp32-esp-idf/> | e-edition | | 1. ESP-IDF Components library, <https://github.com/UncleRus/esp-idf-lib> | e-edition | | 1. ESP-IDF lib helpers, <https://github.com/UncleRus/esp-idf-lib/tree/master/components/esp_idf_lib_helpers> | e-edition | | 1. IDF Component Manager, [https://docs.espressif.com/projects/esp-idf/en/v4.4/esp32s2/api-guides/tools/idf-component-manager.html#](https://docs.espressif.com/projects/esp-idf/en/v4.4/esp32s2/api-guides/tools/idf-component-manager.html%23) | e-edition | | 1. ESP-NETIF, [https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/network/esp\_netif.html#](https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/network/esp_netif.html%23) | e-edition | | 1. Wi-Fi, <https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/network/esp_wifi.html> | e-edition | | 1. Wi-Fi Station Example, <https://github.com/espressif/esp-idf/tree/52bca70b1a73248c9a66095d2cfac8c6ebb1f263/examples/wifi/getting_started/station> | e-edition | | 1. Build a REST API with Node.js, Express, and MySQL, <https://blog.logrocket.com/build-rest-api-node-express-mysql/> | e-edition | | 1. db4free, <https://db4free.net/> | e-edition | | 1. HTTP Request Example, <https://github.com/espressif/esp-idf/blob/52bca70b1a73248c9a66095d2cfac8c6ebb1f263/examples/protocols/http_request> | e-edition | | 1. IoT considerations — cloud services — IaaS, PaaS, SaaS, build your own, <https://medium.com/lattice-research/iot-considerations-server-side-iaas-paas-saas-1f55afc03185> | e-edition | | 1. IaaS vs. PaaS vs. SaaS, <https://www.redhat.com/en/topics/cloud-computing/iaas-vs-paas-vs-saas?sc_cid=7013a000002pgRcAAI&gclid=Cj0KCQjwusunBhCYARIsAFBsUP83DlQbxdVI1A-0PlmnT-t5Zd1O3HKWUfsb_LiMeep8WIuTwQavl8AaAnMnEALw_wcB&gclsrc=aw.ds> | e-edition | | | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | |
| 1. ESP32 Series Datasheet, <https://www.espressif.com/sites/default/files/documentation/esp32_datasheet_en.pdf> 2. ESP32-WROVER-B Datasheet, <https://www.espressif.com/sites/default/files/documentation/esp32-wrover-b_datasheet_en.pdf> 3. ESP32 DevKitC V4, <https://dl.espressif.com/dl/schematics/esp32_devkitc_v4-sch.pdf> 4. SPI Flash API, <https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/storage/spi_flash.html> 5. ESP32 Flash Partition Tables, <https://docs.espressif.com/projects/esp-idf/en/release-v3.2/api-guides/partition-tables.html> | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | |

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| **Course Holder** | | **dr. sc. Socio. Davor Širola, Professor of Professional Studies** | | | | | |
| **The name of the college** | | **Entrepreneurship for IT professionals** | | | | | |
| **Study program** | | **Professional Undergraduate Study of Informatics** | | | | | |
| **Status College** | | **Binding** | | | | | |
| **Year** | | **2.** | **Semester** | | **4.** | | |
| **Point value and method of teaching** | | **ECTS coefficient of student workload** | | | | **4** | |
| **Broj sati (P+V+S)** | | | | **1+1+1** | |
| 1. **Course description** | | | | | | | |
| Understanding the connection and purpose of the purchasing and sales strategy. Identification of trends and market opportunities. Understanding the method of financing entrepreneurial ventures and the process of establishing a company. Introduction to the elements and meaning of business reporting. Analyzing costs and cost movement patterns relevant to business decision-making. Understanding digital business models. | | | | | | | |
| 1. **Objectives of the course** | | | | | | | |
| Identify trends and market opportunities, and recommend sales and purchasing strategies in the development of entrepreneurial ventures. To get acquainted with the different ways of financing entrepreneurial ventures and with the procedure of establishing companies. To valorize financial reporting in the context of calculating modern measures of business performance of the organization. Analyze different digital business models, as well as costs and cost movement patterns that are important for business decision-making. | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | |
| No conditions | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | |
| 1. Explain sales and purchasing strategies in an entrepreneurial venture. 2. Analyze opportunities and ways of financing entrepreneurial ventures. 3. Describe the elements and meaning of financial reporting in the context of calculating modern measures of organizational business performance. 4. Analyze costs and patterns of movement of costs important for making business decisions. 5. Analyze the forms of digital business models | | | | | | | |
| 1. **Types of teaching** | **☒Lectures**  **☒ Seminars and workshops**  **☒Exercises**  ☐Distance education  ☐Field Teaching | | | **☒Independent tasks**  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |  |
| 1. **Comments:/** | | | | | | | |
| 1. **Student obligations** | | | | | | | |
| Fulfill the obligations prescribed by the Study Regulations and the Assessment Regulations. The condition for taking the exam is the creation of a business simulation (according to the teacher's instructions), and team participation in the created simulations. | | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Outcomes** | **Colloquia** | **Project (simulation)** | ***Sim. Game*** | **Exercises/Tasks** | **Prague** | **Max** | | **Outcome 1** | / | 7 % | 2 % | 2 % | 5,5 % | 11 % | | **Outcome 2** | 9 % | 5 % | 3 % | 3 % | 10 % | 20 % | | **Outcome 3** | 9 % | 14 % | 5 % | 2 % | 15 % | 30 % | | **Outcome 4** | 10 % | 12 % | 5 % | 2 % | 14,5 % | 29 % | | **Outcome 5** | 2 % | 6 % | / | 2 % | 5 % | 10 % | | **ECTS credits** | **1,2** | **1,6** | **0,6** | **0,6** | **2** | **4** | | **Altogether** | **30 %** | **40 %** | **15 %** | **15 %** | **50 %** | **100 %** |     A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  Full/partial exam (held in three exam periods: two in February 2025, and the third – the last one in September 2025):   * A student who has **adopted 50% of each of the five learning outcomes** (i.e. **at least three outcomes**), can take these failed outcomes **in a complete (partial) exam**. * A prerequisite for taking the full exam is the successful completion of **the obligation of the seminar paper (creation and participation in a business simulation) within the set deadlines**. * In **the complete exam, all failed outcomes are taken at once**. This means that a student who has not passed certain outcomes, i.e. has not achieved a minimum of 50% during the continuous examination, takes the complete examination period with unpassed outcomes from the beginning (from 0%). * All outcomes (only from the beginning, i.e. from 0%) on the full exam **can be taken by PART-TIME students and THOSE FULL-time students who were justifiably prevented from attending continuous examinations during the semester** (e.g. due to longer sick leave).   **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | 9 % | 2 % | 11 % | | **OUTCOME 2** | 25 % | 5 % | 30 % | | **OUTCOME 3** | 19 % | 3 % | 22 % | | **OUTCOME 4** | 20 % | 3 % | 23 % | | **OUTCOME 5** | 12 % | 2 % | 14 % | | **Share in ECTS** | **3,4** | **0,6** |  | | **Altogether** | **85 %** | **15 %** | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:     |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | |
| 1. **Required literature** | | | | | | | |
| * Rafajac, O. and Širola, D.: Development of Business Ideas, University of Applied Sciences of Rijeka, 2024. * Širola, D.: Entrepreneurship, Polytechnic of Rijeka, Rijeka, 2014 (selected chapters) * Teachers' lectures (taken from the **Merlin** course page after lectures and exercises) | | | | | | | |
| 1. **Dopus Literature** | | | | | | | |
| * Dvorski, S., Ruža, F., Kovšca, V.: Business Economics, TIVA-Tiskara Varaždin, FOI, Varaždin, 2007. * Osterwalder, A. and Pigneur, Y.: Creating Business Models, Školska knjiga, Zagreb, 2014. * Whetten, D.A. i Cameron, K.S.: Developing Management Skills, Pearson Education, Ninth Edition, 2016. * Hisrich, R. D., Peters, M. P., Shepherd, D. A.: Poduzetništvo, Mate d. o. o., Zagreb, 2011. | | | | | | |  |

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| **Course holder** | **Dr. sc. Socio. Marin Kaluža, prof. struč. stud.**  **Bruno Polonijo- assistant** | |
| **Nomenclature** | **Database Systems** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Required** | |
| **Year** | **2/IV** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. **Course description** | | | | | | | | | | |
| In the course, technical models of databases (relational and non-relational) are studied. The capabilities of relational (SQL) databases are compared with non-relational (NoSQL) databases. Various NoSQL databases are analyzed and the possibilities of managing the structure and data in the database are shown. A "generic" data management application is created on the built database. | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | |
| Acquisition of competencies for managing relational and non-relational databases, and competencies for creating a user interface for the implementation of "generic" CRUD operations on the database structure. | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | |
| Introduction to Databases | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | |
| 1. Achieve a satisfactory level of database security in the selected database management system. 2. Compare the ways of performing queries using theoretical interrogation language and interrogative language for working with the database. 3. Analyze different methodologies and tools for creating a conceptual model. 4. Explain the concepts of the physical and logical structure of non-relational (NoSQL) databases. 5. Create a database-based software solution in a given programming environment. | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | |
| Lectures:   1. Data modeling    1. Conceptual data model (ER method, notations).    2. Logical data model (relational model).    3. Comparison of the concepts of the structure of ER and RM, and the rules for translating ER into RM    4. Functional dependency (information), redundancy and anomalies, normalization (1NF, 2NF, 3NF, BCNF, IDNF) 2. Physical Structure and Capabilities of the Database    1. SQL    2. Transforming RM into a Physical Relational Database Structure    3. Types of non-relational databases (forms of structures)    4. Transforming an ER or RM into a physical structure of a non-relational database    5. Methods of Structure and Content Management in Non-Relational Databases    6. BASE properties (relationship with ACID)    7. CAP theorem 3. Database Management    1. Authentication and authorization on databases    2. Database Upgrade    3. Backup i recovery   Exercises:   1. Advanced SQL 2. PL-SQL 3. CRUD operations on NoSQL (e.g. Firebase, Couch, Casandra, Mongo) | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒Lectures  ☐Seminars and workshops  ☒Exercises  ☒Distance education  ☐Field Teaching | | | | | ☒Independent tasks  ☒Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | |
| 1. Take the theoretical and practical written exam 2. Create and present a DBMS analysis according to defined criteria 3. Create and defend a project (part of your study project – creating a system database, creating an application - Access) | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | |  | Seminar paper | | 1 | | Experimental work | |
| Written exam | 1 | Viva voce | |  | Assay | |  | | Research | |
| Project | 1 | Continuous Knowledge Assessment | |  | Report | |  | | Practical work | |
| Portfolio |  |  | |  |  | |  | |  | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Practical written exam – PL-SQL | Seminar paper – DBMS analysis | Project defense | Share of ECTS | Prague | Max | | OUTCOME 1 | **10%** |  | **10%** | **15%** | **1,75** | **17,5%** | **35%** | | OUTCOME 2 |  | **20%** | **10%** |  | **1,5** | **15%** | **30%** | | OUTCOME 3 | **10%** |  |  |  | **0,5** | **5%** | **10%** | | OUTCOME 4 | **10%** |  |  |  | **0,5** | **5%** | **10%** | | OUTCOME 5 |  |  |  | **15%** | **0,75** | **7,5%** | **15%** | | Share in ECTS | **1,5** | **1** | **1** | **1,5** | **5** | **-** | **-** | | Altogether | **30%** | **20%** | **20%** | **30%** | **100%** | **50%** | **100%** |   **The condition for taking the complete exam is a DBMS analysis and a project that is defended on the exam period (oral exam). A written theoretical and practical examination is also written on the complete exam.**    A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:     |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | 10% | 25% | **35%** | | **OUTCOME 2** | 20% | 10% | **30%** | | **OUTCOME 3** | 10% |  | **10%** | | **OUTCOME 4** | 10% |  | **10%** | | **OUTCOME 5** |  | 15% | **15%** | | **Share in ECTS** | **2,5** | **2,5** | **-** | | **Altogether** | **50%** | **50%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | And | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | |
| Title | | | | | | Number of copies | | | | Number of students |
| Materials used in lectures and exercises from the course Database Systems, available in online form on the Moodle system. | | | | | | e-edition | | | |  |
| Kaluža, M: Database Systems, Skripta, University of Applied Sciences of Rijeka, Rijeka, 2008 - chapters | | | | | | e-edition | | | |  |
| Manger, R: Databases, Element, Zagreb, 2012. | | | | | | 3 | | | |  |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | |
| 1. Manger, R: Databases, Skripta, PMF, Zagreb, 2011. Available at: https://dokumen.tips/documents/robert-manger-baze-podatakapdf.html 2. Pavlić, M.: Database Design, University of Rijeka, Rijeka, 2011. 3. Pavlić, M: Information Systems, University of Rijeka, Rijeka, 2009. 4. SQL tutorial, available at: https://www.w3schools.com/sql/default.asp 5. Varga, M.: Databases: Conceptual, Logical, and Physical Data Modeling. Zagreb: own edition, 2021. Available at: https://books.google.hr/books?id=UQPoDwAAQBAJ&lpg=PA1&ots=NosGTXlMAR&lr&hl=hr&pg=PP2#v=onepage&q&f=false 6. Žmarić, S., Kaluža, M.: Comparison of SQL Dialect Distance and RDBMS Capabilities from SQL Standard (ISO/IEC 9075:2016), Development of Business and Information Systems CASE 2021, 22.02.-23.02.2021., Online, ISSN 1334-448X, available at: http://download.case.hr/Zbornici/Knjiga\_2020\_2021\_final.pdf 7. Kaluža, M., Abazović, D.: Hierarchical Representation of Database Schema as a Basis for Search, Mining and OLAP, Development of Business and Information Systems CASE 23, 06.06.-08.06.2011., Zagreb, ISSN 1334-448X, p. 165-170, available at: http://download.case.hr/Zbornici/Zbornik\_CASE23\_final.pdf 8. Kaluža, M.: Modifications on data model, Information and Intelligent Systems (IIS), 18th International Conference 2007, Fakultet organizacije i informatike, Varaždin, 2007, ISBN 978-953-6071-30-2 | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | |

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| **Course holder** | **Vlatka Davidović, prof. v.pred.** | |
| **Nomenclature** | **Desktop application development** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Compulsory** | |
| **Year** | **2/III** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **6** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| 1. **Course description** | | | | | | | | | | | |
| The course covers the basic concepts of application development in different phases of the life cycle, introduction to application development models, different architectural styles and layers of application software. Students create a prototype of a desktop application with an interactive graphical interface, and basic CRUD operations on permanently stored data. The application is created following the basic stages of the development life cycle. At different stages of application development, students use CASE tools, application prototyping tools, application version tracking tools, and configuration, packaging, and delivery tools. A prototype of the application, as well as user and technical documentation are created and delivered. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Acquire competencies for creating application components in a given architectural design. Create a desktop application based on an information system model. Use CASE tools throughout the desktop application development lifecycle. Document the application development process. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Explain the architecture and layers of application software. 2. Distinguish the areas of application of CASE tools. 3. Build a prototype application using the default development tools based on the information system model. 4. Configure the application for the production environment 5. Create documentation for your own software development. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Application Software Architecture   + Stages of the software development life cycle.   + Managing the software development lifecycle.   + Software Development Lifecycle Models   + Application software architecture (monolithic or service-oriented, data-driven, domain-oriented or event-oriented, multi-layered, cloud-native).   + Application design samples. MVC (Eng. *Model-View-Controller*) design and versions.   + Desktop application development. Technologies and tools in the development of desktop applications. * CASE tools for application development.   + Types of CASE (CASE) *Computer Aided Software Engineering*) tools and their purpose - tools for creating diagrams, process modeling, project management, documentation, requirements collection and analysis, software design, configuration management, quality assurance and maintenance.)   + Tools for prototyping.   + IDE (Eng. *Integrated Development Environment*). Development tool capabilities. * Prototype of the application.   + Determination of non-volatile data *persistent data* in the application.   + Determination of the data model.   + Storage of permanent data.   + Mapping and data migration.   + Graphical interface of the application. Graphics components and containers.   + Event model   + CRUD Operations * Application configuration   + Lifecycle Management and Rapid Application Development Systems   + Systems for continuous integration, automatic packaging and delivery.   + Application version tracking systems. * Preparation of technical and user documentation | | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒ Lectures  Seminars and workshops  ☒ Exercises  Distance education  ☒ Field Teaching | | | | ☒ Independent tasks  ☒ Multimedia & Network  Laboratory  Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| 1. Take the theoretical written exam 2. Continuously perform tasks given in class 3. Create a project and present and defend it orally 4. Create technical and user documentation | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | |
| Attending classes | 2,5 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam | 1,5 | Viva voce | | |  | Essay | |  | | Research |  |
| Project | 1 | Continuous Knowledge Assessment | | |  | Report | |  | | Practical work | 1 |
|  |  |  | | |  |  | |  | |  |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Practical work | Project | Share of ECTS | Prague | Max | | OUTCOME 1 | **20 %** |  |  | **1,2** | **10%** | **20 %** | | OUTCOME 2 | **10 %** | **10%** |  | **1,2** | **10%** | **20 %** | | OUTCOME 3 | **10 %** |  | **20%** | **1,8** | **15%** | **30 %** | | OUTCOME 4 |  | **10%** | **10%** | **1,2** | **10%** | **20 %** | | OUTCOME 5 |  |  | **10%** | **0,6** | **5%** | **10 %** | | Share in ECTS | **2,4** | **1,2** | **2,4** |  | **-** | **-** | | Altogether | **40 %** | **20%** | **40%** | **100%** | **50 %** | **100 %** |   The condition for taking the complete exam is a completed project. The defense of the project is taken during the exam period. The written part of the exam period consists of a combination of theoretical part and practical tasks.  Assessment during the exam period:   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | 10 % | 10 % | **20 %** | | **OUTCOME 2** | 10 % | 10 % | **20 %** | | **OUTCOME 3** | 10 % | 20 % | **30 %** | | **OUTCOME 4** | 10 % | 10 % | **20 %** | | **OUTCOME 5** | 10 % |  | **10 %** | | **Share in ECTS** | **3** | **3** | **-** | | **Altogether** | **50 %** | **50 %** | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Dennis, A., Haley Wixom,B., Tegarden, D.: Systems Analysis and Design, An Object-Oriented Approach with UML, 5th Edition, Wiley, 2015. | | | |  | | | | |  | | |
| Chacon,S., Straub,B., Pro Git, Apress, 2022., <https://git-scm.com/book/en/v2> | | | | Available online | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Xu, A., System Design Interview – An insider's guide, Second Edition, Byte Code LLC, 2020. 2. Holt, J., Systems Engineering Demystified: A practitioner's handbook for developing complex systems using a model-based approach, Packt Publishing Ltd., 2021. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Dr. sc. socio. Bernard Vukelić, prof.v.š.**  **Bruno Polonijo- assistant** | |
| **Nomenclature** | **Security of Information and Communication Systems** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Required** | |
| **Year / Semester** | **2/4** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | | | |
| The course includes the acquisition of basic knowledge in the field of security of information and communication systems. It trains students to understand the importance of security and protection of information systems, to get acquainted with risks and threats, and the necessity of using protection mechanisms. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| The aim of the course is to provide an overview of the field of information and communication systems security with an emphasis on understanding the threats and risks related to information systems. Through examples, get acquainted with the most common attacks and vulnerabilities of the system, as well as organizational, software and technical defense measures. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| No conditions | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| * Distinguish between terms in the field of security, protection and management of information system security * Analyze the information system with authentication, authorization and log modules. * Identify possible threats and vulnerabilities of the information system * Analyze protocols in a secure and insecure communication channel. * Use tools to monitor network traffic. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Definition of Information and Cyber Security * The role of information security in business * Security as a process * Stages of security * Confidentiality, integrity and availability as the main principles of security * Security Incident Management Systems * Analysis of threats and vulnerabilities in information systems * Security Mechanisms in Communication Systems and Their Protocols * Using Basic Cryptographic Algorithms * Safeguards, management and monitoring of the security of information and communication systems * Security of mobile systems | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒ Lectures**  Seminars and workshops  **☒ Exercises**  Distance education  Field Teaching | | | | **☒ Independent tasks**  **Multimedia & Network**  Laboratory  Mentoring work  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| Access continuous examinations | | | | | | | | | | | |
|  | | | | | | | | | | | |
| 1. **Monitoring[[3]](#footnote-3) student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam |  | Viva voce | | |  | Essay | |  | | Research |  |
| Project |  | Continuous Knowledge Assessment | | | 3 | Report | |  | | Practical work |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical verification** | **Practical check** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** |  | **20%** | **1** | **10%** | **20%** | | **OUTCOME 2** | **10%** | **20%** | **1,5** | **15%** | **30%** | | **OUTCOME 3** | **10%** |  | **0,5** | **5%** | **10%** | | **OUTCOME 4** | **10%** | **20%** | **1,5** | **15%** | **30%** | | **OUTCOME 5** |  | **10%** | **0,5** | **5%** | **10%** | | **Share in ECTS** | **1,5** | **3,5** | **5** | **-** | **-** | | **Altogether** | **30%** | **70%** | **100%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** |  | **20%** | **1** | **20%** | | **OUTCOME 2** | **10%** | **20%** | **1,5** | **30%** | | **OUTCOME 3** | **10%** |  | **0,5** | **10%** | | **OUTCOME 4** | **10%** | **20%** | **1,5** | **30%** | | **OUTCOME 5** |  | **10%** | **0,5** | **10%** | | **Share in ECTS** | **1,5** | **3,5** | **5** |  | | **Altogether** | **30%** | **70%** | **100%** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Vukelić B. Security of Information Systems, University of Applied Sciences of Rijeka, 2016 | | | | e-edition | | | | |  | | |
| Materials used in lectures and exercises, available on the Merlin system | | | | E-Mail | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Computer Security: Principles and Practice 4th Edition, Stallings W., Brown L., Pearson, 2021. , 2. CompTIASecurity+ Exam Guide, McGraw Hill, 2018., 3. CERT Croatia – www.cert.hr – Documents by Teaching Topic | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Dr.sc. socio. Prof. Alen Jakupović, prof. struč. Stud**  **Dr. sc. Socio. Sabrina Šuman, prof.struč. Stud.**  **Ivan Šimac - lecturer** | |
| **Nomenclature** | **Projektni praktikum** | |
| **Study program** | **Undergraduate Professional Study of Informatics** | |
| **Item Status** | **Binding** | |
| **Year / Semester** | **2. / IV.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Number of hours (P+H+W+Pr)** | **0+6+0+0** |

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| 1. **Course description** | | | | |
| The course contributes to the completion and application of theoretical knowledge with practical knowledge through solving challenges from the real IT sector based on a real need. | | | | |
| 1. **Course objectives** | | | | |
| To complement and apply theoretical knowledge with practical knowledge through solving challenges designed by companies from the real IT sector based on a real need. Students present their results in the form of documentation to the head of professional practice. | | | | |
| 1. **Course Enrolment Requirements** | | | | |
| There are no conditions. | | | | |
| 1. **Expected learning outcomes for the course** | | | | |
| 1. Apply previously acquired professional knowledge in a real work environment. 2. Demonstrate independence, responsibility and self-initiative in solving work tasks. 3. Apply business communication skills in a real work environment. 4. Acquire work habits according to the requirements of the real working environment. 5. Independently and responsibly prepare an expert report on the internship performed. | | | | |
| 1. **Course content** | | | | |
| 1. **Types of teaching** | ☐Lectures  ☐Seminars and workshops  ☐Exercises  ☐Distance education  ☐Field Teaching | | ☒Independent tasks  ☐Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 1. **Comments**   The course is not in a continuous monitoring system. | | | | |
| 1. **Student obligations** | | | | |
| During the professional practice, the student prepares a report showing the completed practice and the completed task (Article 13 of the Act). of the Ordinance on Professional Practice). | | | | |
| 1. **Monitoring student work:** | | | | |
| *Assessment is based on the evaluation of the adoption of learning outcomes in the course.* *A student has passed the course if he or she has completed the number of hours prescribed by the Ordinance on Professional Practice (Article 14), as evidenced by:*  *• Confirmation from the employer on the completed professional practice,*   *• Student's Report on the completed professional practice (written),*  *• Defense of the submitted Report (oral).* | | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | |
| *The grade is defined by the Ordinance on the Evaluation of Students of Undergraduate Professional and Specialist*  *Graduate Professional Studies of the Polytechnic of Rijeka (Article 6).*  ***Verification of the adoption of learning outcomes in the course:***     |  |  |  | | --- | --- | --- | | ***OUTCOMES*** | ***Student Report*** | ***Employer's Certificate*** | | ***OUTCOME 1*** | *Satisfy* | *Satisfy* | | ***OUTCOME 2*** | *Satisfy* | *Satisfy* | | ***OUTCOME 3*** | *Satisfy* | *Satisfy* | | ***OUTCOME 4*** | *Satisfy* | *Satisfy* | | ***OUTCOME 5*** | *Satisfy* | *Satisfy* | | ***Share in ECTS*** | ***4*** | ***1*** | | | | | |
| 1. **Mandatory literature** | | | | |
| Title | | Number of copies | | Number of students |
| Materials available in the e-course on the Moodle system. | | e-edition | |  |
| Ordinance on Professional Practice. | | e-edition | |  |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | |
| Instructions for the professional practice of the head of professional practice at the undergraduate professional study of Informatics. | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | |

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| **Course holder** | **dr.sc.socio. Marin Kaluža, prof.str.stud.**  **Maria Krajči- assistant** | |
| **Nomenclature** | **System infrastructure for software development** | |
| **Study program** | **Professional Undergraduate Study of Informatics** | |
| **Item Status** | **Electoral** | |
| **Year / Semester** | **2 / 4** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | | | |
| The course provides insight into the best practices for using digital cloud systems necessary for modern software development by applying current methodologies and practices within an approach that combines software development and IT operations. Students make an analysis of business requirements and implement and configure appropriate systems to support the software development process. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Adopt concepts in the field of system infrastructure for software development and develop skills in analysis, implementation and configuration of systems in the digital cloud necessary for modern software development by applying best practices. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| Course attendance: Introduction to Information and Communication Technologies, Specification of User Requirements and Process Modeling, Operating Systems and Introduction to Computer Networks. | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Analyze business requirements in the context of the required material, technical and human resources. 2. Compare available technologies to support software development. 3. Independently implement and manage services in public and private digital clouds by applying best practices. 4. Independently configure automation technologies in the software development process by applying best practices. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Requirements analysis using selected modern development methodologies. * Group implementation of documentation using appropriate techniques and technologies through the development of work tasks resulting from the analysis of requirements. * Comparative analysis of digital cloud systems available on the market of IaaS and PaaS systems for software development. * Implementation and configuration of a system for storing and monitoring work tasks in the digital cloud. * Deploy and configure the system in the digital cloud to store source code and use client applications to access the system. * Implementation and configuration of automated continuous integration (CI) software systems. * Implementation and configuration of the virtualization system of the development infrastructure. | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  **☒Distance education**  ☐Field Teaching | | | | **☒Independent tasks**  **☒Multimedia & Network**  ☐Laboratory  **☒Mentoring work**  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| 1. Attendance at a minimum of 50% of classes related to exercises for each individual learning outcome.  2. Approaching continuous checks through theoretical checks, project defense and preparation of project documentation.  3. Activity during class. | | | | | | | | | | | |
| 1. **Tracking1 student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam |  | Viva voce | | |  | Assay | |  | | Research |  |
| Project | 2 | Continuous Knowledge Assessment | | | 1 | Report | |  | | Practical work |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.     |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical verification** | **Project defense** | **Project documentation** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **10%** |  | **10%** | **1** | **10%** | **20 %** | | **OUTCOME 2** | **10%** |  | **10%** | **1** | **10%** | **20 %** | | **OUTCOME 3** |  | **25%** | **5%** | **1,5** | **15%** | **30 %** | | **OUTCOME 4** |  | **25%** | **5%** | **1,5** | **15%** | **30 %** | | **Share in ECTS** | **1** | **2,5** | **1,5** | **5** | **-** | **-** | | **Altogether** | **20 %** | **50%** | **30%** | **100%** | **50 %** | **100 %** |       A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.    Assessment during the exam period:       |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | **10%** | **10%** | **1** | **20 %** | | **OUTCOME 2** | **10%** | **10%** | **1** | **20 %** | | **OUTCOME 3** | **10%** | **20%** | **1,5** | **30 %** | | **OUTCOME 4** | **10%** | **20%** | **1,5** | **30 %** | | **Share in ECTS** | **2** | **3** | **5** | **-** | | **Altogether** | **40%** | **60%** | **100%** | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Materials used in lectures and exercises, available on the Moodle system | | | | E-edition | | | | |  | | |
| Zaal S., Demiliani S., Malik A., Azure DevOps Explained, Packt Publishing, 2020. | | | | E-edition | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. The Developer’s Guide to Azure, Microsoft, 2021. 2. Mukesh K., Azure DevOps: Complete CI/CD Pipeline Practical Guide, 2019. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **mr. sc. Jasminka Tomljanović v.** | |
| **Nomenclature** | **Content and document management systems** | |
| **Study program** | **Undergraduate Professional Study of Informatics** | |
| **Item Status** | **Electoral** | |
| **Year / Semester** | **2 / 4** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | | | |
| The course provides students with an insight into modern content and document management systems and trains students to work with content and document management systems. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Acquire basic concepts in the field of content and document management systems and develop skills in the analysis, implementation and configuration of these systems and content management using these systems. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| * Analyze user requirements that need to be met by content and document management systems. * Select available solutions that best support the identified user requirements. * Implement the selected content and document management system and prepare the content for use in the system. * Set up the selected document management system in the production environment and present and test the implemented solution. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Analysis of requirements and implementation of project documentation using the selected methodology of website development, which includes the creation of sketches of the layout of the interface of the selected website and additional analysis of the requirements of the document management system based on examples from practical business practice. * Comparative analysis of systems available on the market for content and document management. * Implementation of the selected content management system using a set of standard elements: use of an existing design template with possible design adjustments, preparation of several types of templates for specific types of presented content, implementation of navigation and menus, implementation of at least one web form, implementation of data retrieval from a database or an external source, implementation of multilingualism in the system. * Setting up the selected document management system in the production environment with the presentation and testing of the implemented solution on a practical example from business practice. | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒ Lectures**  Seminars and workshops  **☒ Exercises**  **☒ Distance education**  Field Teaching | | | | **☒ Independent tasks**  **☒ Multimedia & Network**  Laboratory  **☒ Mentoring work**  Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| Attendance at a minimum of 50% of classes related to exercises for each individual learning outcome.  Accessing continuous checks through theoretical checks, project defense and preparation of project documentation.  Activity during class. | | | | | | | | | | | |
| 1. **Monitoring[[4]](#footnote-4) student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam |  | Viva voce | | |  | Assay | |  | | Research |  |
| Project | 2 | Continuous Knowledge Assessment | | | 1 | Report | |  | | Practical work |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical verification | Project defense | Project documentation | Share of ECTS | Prague | Max | | OUTCOME 1 | **10%** |  | **10%** | **1** | **10%** | **20 %** | | OUTCOME 2 | **10%** |  | **10%** | **1** | **10%** | **20 %** | | OUTCOME 3 |  | **25%** | **5%** | **1,5** | **15%** | **30 %** | | OUTCOME 4 |  | **25%** | **5%** | **1,5** | **15%** | **30 %** | | Share in ECTS | **1** | **2,5** | **1,5** | **5** | **-** | **-** | | Altogether | **20 %** | **50%** | **30%** | **100%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.  Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Share of ECTS | Max | | OUTCOME 1 | **10%** | **10%** | **1** | **20 %** | | OUTCOME 2 | **10%** | **10%** | **1** | **20 %** | | OUTCOME 3 | **10%** | **20%** | **1,5** | **30 %** | | OUTCOME 4 | **10%** | **20%** | **1,5** | **30 %** | | Share in ECTS | **2** | **3** | **5** | **-** | | Altogether | **40%** | **60%** | **100%** | **100 %** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Materials used in lectures and exercises, available on the Moodle system | | | | E-edition | | | | |  | | |
| Barker D., Web Content Management, O'Reilly Media, 2016. | | | |  | | | | |  | | |
|  | | | | | | | | | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Azad A., Implementing Electronic Document and Record Management Systems, Auerbach Publications, 2008. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Izv.prof.dr.sc.Alen Jakupović, prof.v.š. In the case of t.z.** | |
| **Nomenclature** | **Mobile application development** | |
| **Study program** | **Undergraduate Professional Study of Computer Science** | |
| **Item Status** | **Compulsory** | |
| **Year / Semester** | **3. / V.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| 1. **Course description** | | | | | | | | | | | |
| The course deals with topics necessary for the acquisition of basic competencies in mobile application development (development environment and development framework, REST API, mobile device emulator, connecting a real mobile device, accessing mobile device resources). By applying the concepts covered, students will be able to create a mobile application that includes working with the database, using the resources of the mobile device and calling from the REST API. The application will be created using the selected development framework. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Acquire competencies to work with the chosen development environment and development framework.  Develop a mobile application that includes creating an interface, working with mobile device resources, database and REST API functions. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| There are no conditions. | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Prepare the working environment for application development 2. Configure the application for the production environment 3. Evaluate and recommend an engineering development methodology for mobile application development 4. Justify the choice of server and/or client platform for mobile application development. 5. Select the appropriate database technology for the needs of the mobile application. 6. Critically judge and choose a method of data visualization in mobile applications. 7. Develop a mobile app | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Native and hybrid mobile app * Definition and properties * Examples of native and hybrid mobile apps * Basic technologies for the development of native and hybrid mobile applications * Integrated Development Environment (Definition, Properties, Examples) * Software Development Framework (Definition, Properties, Examples) * Client-server application model (definition, properties) * REST API (Definition, HTTP Methods, Examples) * Database (definition, basic properties) * Mobile Application Development Methodologies * Definition of methodology * Specification of user requirements * Computer program design specification * Establishing a development environment for the development of native and hybrid mobile applications: * Set up the selected integrated development environment * Setting up the selected software development framework * Set up a plug-in to work with the REST API * Set up a database add-in * Mobile Device Emulator * Putting a real mobile device in developer mode * Connect your mobile device to your developer to test your app * Use an emulator to test your app * Development of native and hybrid mobile applications * Development of the interface and logic of the mobile application * Access to mobile device resources * Mobile app integration with REST API * Integration of the mobile application with the database | | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒Lectures  ☐Seminars and workshops  ☒Exercises  ☒Distance education  ☐Field Teaching | | | | ☒Independent tasks  ☒Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| 1. Create all planned activities in class 2. Create and defend the project | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | |
| Attending classes | 2,5 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam | 0,5 | Viva voce | | |  | Assay | |  | | Research |  |
| Project | 2 | Continuous Knowledge Assessment | | |  | Report | |  | | Practical work |  |
|  |  |  | | |  |  | |  | |  |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written exam** | **Project defense** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **5%** | **10%** | **0,75** | **7,5%** | **15%** | | **OUTCOME 2** | **5%** | **10%** | **0,75** | **7,5%** | **15%** | | **OUTCOME 3** | **5%** | **5%** | **0,5** | **5%** | **10%** | | **OUTCOME 4** | **5%** | **5%** | **0,5** | **5%** | **10%** | | **OUTCOME 5** | **5%** | **10%** | **0,75** | **7,5%** | **15%** | | **OUTCOME 6** | **5%** | **10%** | **0,75** | **7,5%** | **15%** | | **OUTCOME 7** |  | **20%** | **1** | **10** | **20%** | | **Share in ECTS** | **1,5** | **3,5** | **5** | **-** | **-** | | **Altogether** | **30%** | **70%** | **100%** | **50%** | **100%** |     **The condition for taking the full exam is a project that is defended on the exam period (oral exam). A written test consisting of theoretical tasks is also written during the exam period.**    A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.    Assessment during the exam period:   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | **5%** | **10%** | **15%** | | **OUTCOME 2** | **5%** | **10%** | **15%** | | **OUTCOME 3** | **5%** | **5%** | **10%** | | **OUTCOME 4** | **5%** | **5%** | **10%** | | **OUTCOME 5** | **5%** | **10%** | **15%** | | **OUTCOME 6** | **5%** | **10%** | **15%** | | **OUTCOME 7** |  | **20%** | **20%** | | **Share in ECTS** | **1,5** | **3,5** | **5** | | **Altogether** | **30%** | **70%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Gerardus Blokdyk: Mobile Application Development Platform A Complete Guide, 5STARCooks, 2021. | | | |  | | | | |  | | |
| Gerardus Blokdyk: Mobile Application Development A Complete Guide, 5STARCooks, 2021 | | | |  | | | | |  | | |
| Authorized Lectures | | | | e-edition | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Mobile Development Tutorials, <https://www.tutorialspoint.com/mobile_development_tutorials.htm>, 3.6.2022. 2. Android Studio Tutorial, <https://www.javatpoint.com/android-tutorial>, 3.6.2022. 3. Vue framework, <https://vuejs.org/>, 3.6.2022. 4. Quasar framewoork, <https://quasar.dev/>, 3.6.2022. 5. Apache Cordova, <https://cordova.apache.org/>, 3.6.2022. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

\*THE SYLLABUS FOR THE FULL-TIME STUDY OF THE COURSE MOBILE APPLICATION DEVELOPMENT (PROF. ŠIMAC) IS MISSING

\*Missing syllabus for the course IT Project Management (Prof. Jakupović)

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| **Course holder** | **Martin Golob, univ.spec.oec., lecturer** | |
| **Nomenclature** | **IT project management** | |
| **Study program** | **Undergraduate Professional Study of Computer Science - Part-time** | |
| **Item Status** | **Compulsory** | |
| **Year / Semester** | **3. / V.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **4** |
| **Broj sati (P+V+S)** | **2P+2S** |

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| 1. **Course description** | | | | | | | | | |
| The course covers the knowledge, methods and techniques necessary for the successful management of IT projects in business entities. On the concrete example of an IT (ICT) project, the student should apply project management techniques and methods, define project goals and link activities, project deliveries and responsibilities to them, prepare project documentation, identify risks and create a detailed plan for their management in the implementation of ICT projects, develop a plan for the implementation, control and acceptance of project deliveries and assess the success factors of ICT projects related to the application of a certain technology and development methodologies in the business environment. | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | |
| Acquire specific knowledge, methods and techniques necessary for the successful management of IT projects, prepare project documentation for the selected IT project, develop a plan for the implementation, control and acceptance of project deliveries, and assess the success factors of ICT projects. | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | |
| There are no conditions. | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | |
| 1. Apply project management techniques and methods to projects for the development and introduction of information and communication technology (ICT). 2. Define and quantify the goals and sub-goals of the project and link activities, project deliveries and responsibilities to them. 3. Prepare project documentation that includes a detailed project implementation plan (time plan for the implementation of activities, budget, necessary human resources and communication plan). 4. Identify risks in the implementation of ICT projects and draft a risk management plan. 5. Develop and implement a plan for the implementation, control and acceptance of project deliveries. 6. Assess the success factors of IT projects related to the application of a certain technology and methodology for the development of ICT systems in the business environment. | | | | | | | | | |
| 1. **Course content** | | | | | | | | | |
| * Basic concepts of IT project management, project management, project life cycle, business environment, digital economy and new business models, digitalization of business entities, European Union funds and financing opportunities in the Republic of Croatia (structure, differences,...). * Project development through a logical approach: stakeholder analysis, problem analysis, goal analysis, strategy analysis, Logical matrix * Project timeline, project sustainability and risk management, feasibility study, business plan development, project evaluation and eligibility, activity planning, budgeting and cost documentation, project selection criteria and project implementation. * Seminars/exercises: Logical matrix, creation of a problem tree, creation of a goal tree, preparation of project documentation (activities, costs,...), project sustainability and risk management plan, creation of project Gantt charts, calculation of project points according to selection criteria | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☐Exercises**  ☐Distance education  ☐Field Teaching | | | **☒Independent tasks**  **☐Multimedia & Network**  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | |
| 1. **Tracking1 student work** | | | | | | | | | |
| Attending classes | 2 | Teaching activity | |  | Seminar paper | | 1 | Experimental work |  |
| Written exam | 0,5 | Viva voce | |  | Assay | |  | Research |  |
| Project | 0,5 | Continuous Knowledge Assessment | |  | Report | |  | Practical work |  |
| Portfolio |  |  | |  |  | |  |  |  |

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| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written verification** | **Seminar / project** | **Project defense** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **25 %** |  |  | **1** | **12,5%** | **25%** | | **OUTCOME 2** |  | **10 %** | **5 %** | **0,6** | **7,5 %** | **15 %** | | **OUTCOME 3** |  | **25 %** | **10 %** | **1,4** | **17,5 %** | **35 %** | | **OUTCOME 4** |  | **2,5 %** | **2,5 %** | **0,2** | **2,5 %** | **5 %** | | **OUTCOME 5** |  | **8 %** | **2 %** | **0,4** | **5 %** | **10 %** | | **OUTCOME 6** |  | **8 %** | **2 %** | **0,4** | **5 %** | **10 %** | | **Share in ECTS** | **1** | **2,14** | **0,86** | **-** | **2** | **4** | | **Altogether** | **25 %** | **53,5 %** | **21,5 %** | **4** | **50 %** | **100 %** |     Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome. | | |
| Grading on  exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | **25 %** |  | **1** | **25%** | | **OUTCOME 2** |  | **15 %** | **0,6** | **15 %** | | **OUTCOME 3** |  | **35 %** | **1,4** | **35 %** | | **OUTCOME 4** |  | **5 %** | **0,2** | **5 %** | | **OUTCOME 5** |  | **10 %** | **0,4** | **10 %** | | **OUTCOME 6** |  | **10 %** | **0,4** | **10 %** | | **Share in ECTS** | **1** | **3** |  | **4** | | **Altogether** | **25 %** | **75 %** | **-** | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | |
| Title | Number of copies | Number of students |
| Teaching materials from the lecture |  |  |
| Tomljanović M., Murić, E. (2023), EU Funds, EFRI, University of Rijeka | Available online |  |
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| 1. **Supplementary literature (at the time of application for the study programme)** |
| 1. Project Management Institute (2017.), *A Guide to the Project Management Body of Knowledge (PMBOK(R) Guide-Sixth Edition / Agile Practice Guide Bundle*, 2. Soriano, J. L. (2016). *Maximizing benefits from IT project management: from requirements to value delivery*. CRC Press. 3. Schwalbe, K. (2014). Information Technology Project Management. 7th Ed. Cengage Learning. 4. Holtsnider, B., Jaffe, B.D. (2012). IT Manager’s Handbook. Elsevier |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. |

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| **Course holder** | **Vlatka Davidović, v.pred.** | |
| **Nomenclature** | **Development of interactive web applications.** | |
| **Study program** | **Undergraduate Professional Study of Computer Science** | |
| **Item Status** | **Compulsory** | |
| **Year** | **3. / V.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **6** |
| **Broj sati (P+V+S)** | **2+3+0** |

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| 1. **Course description** | | | | | | | | | | | |
| Through the course, students acquire concepts and concepts related to the architecture of a web application, the operation of a web client and a web server, as well as protocols and formats for communication and data exchange between clients and servers. The client and server part of the web application is analyzed, and the emphasis is placed on the development of the client part of the web application. Students are introduced to the languages for forming the structure and design of graphic elements and programming interactive parts on the client part of the web application. Through the project, students develop an interactive client web application using a methodological approach, using a selected software development framework. The application connects to the application programming interface developed in the previous course. In preparation for the development of a web application, a working environment and a repository for storing versions of the application are selected and set up. The finished application is configured and switched to an executable form for the production environment. In addition to the application, the output products of this course are technical and user documentation. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Acquire competencies for the development of the client part of the web application. Get to know programming languages and development frameworks for creating a web application. Create a web application using a methodological approach using the selected development framework and set it up in a production environment. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| The condition for enrolling in the course is the course Development of the Application Programming Interface. | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Prepare the working environment for application development 2. Set up a repository and install a versioning tool 3. Design the architecture of a web application with the selection of appropriate technologies (web server, programming languages and frameworks, data storage, etc.) based on a given description. 4. Analyze the characteristics of programming languages and frameworks for the realization of the client part of web applications (front-end). 5. Build an interactive web application using selected technologies. 6. Set up the app in a production environment 7. Prepare technical and user documentation | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Preparing the working environment for web application development. * Installation and configuration of web application development tools * Installation and configuration of the Software Development Framework (SDF). *framework* for the development of the client part (Engl. *The front-end* of the web application. Work with the package manager. * Creating a project. * Repositories and tools for storing software versions. * Creating a repository. * Basic commands in working with the repository * Work with a remote repository. * Work with repository branches in a team environment. * Web Application Architecture * The web client. Web server. * protocols for communication. Data transfer formats. * Data stores. * Programming languages and software development frameworks for the development of the client part of the web application * Basic concepts of a web application (content, design, interaction) * Characteristics of software development frameworks for the realization of the client part of web applications. Project tree. * Document structure in a software development framework. * Arrangement of elements in the software development framework. * The lifecycle of applications in a software development framework. * Interactive web application * Planning the organization and structure of the client part of the web application. * Website design. Graphic elements. * Dynamism of the website. Adding interactivity to graphic elements. * Server-Side Asynchronous Communication (AJAX) * Connecting the application to the API. Performing CRUD operations. * Development and production environment. * The Difference Between Development and Production Environments. * Setting up the production environment for the application. * Configure an app for production * Preparation of technical (development) and user documentation. * Automatic generation of technical documentation from comments. | | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒Lectures  ☐Seminars and workshops  ☒Exercises  ☐Distance education  ☐Field Teaching | | | | | ☒Independent tasks  ☐Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| 1. Take the theoretical written exam 2. Develop planned activities related to the preparation of the project 3. Develop a project and defend it orally 4. Prepare technical and user documentation of the project | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | |
| Attending classes | 2,5 | Teaching activity | | |  | Seminar paper |  | | | Experimental work |  |
| Written exam | 1,5 | Viva voce | | |  | Assay |  | | | Research |  |
| Project | 2 | Continuous Knowledge Assessment | | |  | Report |  | | | Practical work |  |
| Portfolio |  |  | | |  |  |  | | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Project | Share of ECTS | Prague | Max | | OUTCOME 1 |  | **10%** | **1** | **5%** | **10 %** | | OUTCOME 2 | **10 %** | **10%** | **1,25** | **10%** | **20 %** | | OUTCOME 3 | **10 %** |  | **1,25** | **5%** | **10 %** | | OUTCOME 4 | **20 %** |  | **0,5** | **10%** | **20 %** | | OUTCOME 5 |  | **20%** | **1** | **10%** | **20 %** | | OUTCOME 6 |  | **10%** |  | **5%** | **10 %** | | OUTCOME 7 |  | **10%** |  | **5%** | **10 %** | | Share in ECTS | **2** | **3** | **5** | **-** | **-** | | Altogether | **40 %** | **60%** | **100%** | **50 %** | **100 %** |     The condition for taking the complete exam is a completed project. The defense of the project is taken during the exam period as an oral exam.    Assessment during the exam period:   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** |  | **10%** | **10%** | | **OUTCOME 2** | **10%** | **10%** | **20%** | | **OUTCOME 3** | **10%** |  | **10%** | | **OUTCOME 4** | **20%** |  | **20%** | | **OUTCOME 5** |  | **20%** | **20%** | | **OUTCOME 6** |  | **10%** | **10%** | | **OUTCOME 7** |  | **10%** | **10%** | | **Share in ECTS** | **2** | **3** | **5** | | **Altogether** | **40%** | **60%** | **100%** |   If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Durocher, D., HTML and CSS QuickStart Guide: The Simplified Beginners Guide to Developing a Strong Coding Foundation, Building Responsive Websites, and Mastering the Fundamentals of Modern Web Design, ClydeBank Media LLC, 2021. | | | |  | | | | |  | | |
| Flanagan, D., JavaScript - The Definitive Guide: Master the World's Most-Used Programming Language (7th Edition), O'Reilly,2020. | | | |  | | | | |  | | |
| [https://www.w3schools.com](https://www.w3schools.com/), (HTML/CSS/JavaScript) | | | | Available online | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Stoenescu, R., Quasar, https://quasar.dev/, 2022. 2. You,E., Vue.js, <https://vuejs.org/>, 2022. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

\*missing syllabus for the course Development of Interactive Web Applications (part-time, prof. Jakupović

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| **Course holder** | **Dr.sc. Sabrina Šuman, Acting Chairman**  **Ivan Šimac - lecturer** | |
| **Nomenclature** | **Basics of Artificial Intelligence** | |
| **Study program** | **Undergraduate Study of Computer Science** | |
| **Item Status** | **binding** | |
| **Year** | **3. / V.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | | | |
| The course is intended for students to get to know the methods of Artificial Intelligence (AI) and their modalities and benefits of application in all aspects of business and life. They will analyze the functionalities that can be realized by an AI method, create machine learning models with the interpretation of the results, and discuss the ethical aspects of the application of AI in general today. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Adopt the basic concepts of artificial intelligence application and the application of machine learning algorithms on concrete practical examples. Critically judge and discuss technological trends in the application of artificial intelligence and their implications for society as a whole. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| No conditions | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Interpret the basic concepts from the application of artificial intelligence 2. Discuss the application and ethical aspects of the application of artificial intelligence 3. Propose machine learning methods to solve specific problems in the field of artificial intelligence. 4. Apply supervised, semi-supervised and unsupervised machine learning methods in the selected business domain. 5. Evaluate and optimize the machine learning model in the context of a business problem. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| Systematization of the field related to artificial intelligence – AI. Basic concepts and concepts related to AI.  Application of Artificial Intelligence, Analysis and Ethical Aspects. Selection of topics for seminar papers. Machine learning – description of the field. basic concepts of machine learning. Unsupervised, supervised and semi-supervised learning. Overview of machine learning methods – classification, regression, grouping. Description and application of perceptron algorithm, support vector machine, k-NN, decision tree, neural network. Interpretation of machine learning performance and methods of optimizing the resulting model. | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☐Exercises**  ☐Distance education   * ☐Field Teaching | | | | | **☐Independent tasks**  **☐Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| Attendance at exercises of at least 70%;  Actively participate in solving practical tasks in lectures and exercises; Present the created project assignment from the selected topic - preparation of documentation | | | | | | | | | | | |
| 1. **Monitoring student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | |  | | Seminar paper | 0,5 | | | Experimental work |  |
| Written exam | 0,5 | Viva voce | |  | | Assay |  | | | Research |  |
| Project | 1 | Continuous Knowledge Assessment | |  | | Report |  | | | Practical work | 1 |
| Portfolio |  |  | |  | |  |  | | |  |  |
| **10. Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome. | | | | | | | | | | | |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written exam** | **Seminar** | **project** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **10 %** |  |  | **0,75** | **15%** | **7,5 %** | | **OUTCOME 2** | **10 %** | **15%** |  | **0,5** | **10%** | **5 %** | | **OUTCOME 3** | **10 %** | **10** |  | **0,5** | **10%** | **5 %** | | **OUTCOME 4** |  |  | **30** | **1,25** | **25%** | **12,5 %** | | **OUTCOME 5** |  |  | **15** | **1,25** | **25%** | **12,5 %** | | **Share in ECTS** | **1,25** | **0,5** | **1,25** | **5** | **-** | **-** | | **Altogether** | **25 %** | **10%** | **25%** | **100%** | **50 %** | **100 %** | | | | | | | | | | | | |
| Assessment during the exam period: | | | | | | | | | | | |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** |  | **10 %** | **0,75** | **15%** | **7,5 %** | | **OUTCOME 2** | **15%** | **10 %** | **0,5** | **10%** | **5 %** | | **OUTCOME 3** | **10 %** | **10%** | **0,5** | **10%** | **5 %** | | **OUTCOME 4** | **30%** |  | **1,25** | **25%** | **12,5 %** | | **OUTCOME 5** | **15%** |  | **1,25** | **25%** | **12,5 %** | | **Share in ECTS** | **1,25** | **0,5** | **5** | **-** | **-** | | **Altogether** | **25 %** | **10%** | **100%** | **50 %** | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | |  |  |  | | | | | | | | | | | | |
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| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | | Number of copies | | | | Number of students | | |
| Šuman, S., Business Intelligence Systems, University of Applied Sciences of Rijeka, Rijeka 2017. | | | | | Online Edition | | | |  | | |
| Šuman, S., Review of Natural Language Processing and Machine Translation Methods, Proceedings of the University of Applied Sciences of Rijeka, Vol 9, No 1, 2021. | | | | |  | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
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| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Dr. sc. Sabrina Šuman, v. pred.**  **Sanja Raspor Janković - prof.struč.stud.** | |
| **Nomenclature** | **Business Analytics & Reporting** | |
| **Study program** | **Undergraduate Professional Study of Informatics** | |
| **Item Status** | **binding** | |
| **Year** | **3. / V.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | |
| 1. **Course objectives** | | |
| Adopt the concepts of the field of business management with the use of software and methods to support decision-making and business analysis. | | |
| 1. **Course Enrolment Requirements** | | |
| No conditions | | |
| 1. **Expected learning outcomes for the course** | | |
| 1. Analyze the role and importance of information systems for business planning and decision support. 2. To determine the characteristics of the observed phenomena using the methods of descriptive statistics 3. Determine the correlation and regression between the two observed phenomena 4. Apply quantitative and qualitative methods for decision-making and risk management methods in ICT projects. 5. Create simple reports based on data from data warehouses (lakes) in the domain of business intelligence 6. Develop models of multi-criteria decision-making and interpretation of results | | |
| 1. **Course content** | | |
| Today's Business Conditions and Analysis of Analytical Needs in Business. Types of decision problems at each of the levels of decision-making. Stages of decision-making. Functionalities of various software support for decision-making. Preparation of data for analysis. Creation of survey questionnaires and interpretation of results.  Basic concepts in statistics. Edit data. Graphical representation of data. Relative numbers. Basic analysis of a numerical sequence (arithmetic mean, mode, median, standard deviation and variance, upper and lower quartile, coefficient of asymmetry and roundness). Regression analysis (simple regression model). Correlation analysis (Pearson correlation coefficient, Spearman correlation coefficient, scattering diagram).  Warehouses and data lakes. Multidimensional modeling and reports – dimensions, measures, hierarchies, groupings, creating new fields.  Multi-criteria modeling and decision-making – concepts and an overview of several known methods. Practical examples created in the selected software. | | |
| 1. **Types of teaching** | * **Lectures** * Seminars and workshops * **Exercises** * **Distance education** * Field Teaching | * **Independent tasks** * **Multimedia & Network** * Laboratory * Mentoring work * Other   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. **Comments** | | |
| 1. **Student obligations** | | |
| 1. **Monitoring student work** | | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Attending classes | 2 | Teaching activity |  | Seminar paper |  | Experimental work |  | | Written exam |  | Viva voce |  | Assay |  | Research |  | | Project | 1 | Continuous Knowledge Assessment | 1 | Report |  | Practical work | 1 | | Portfolio |  |  |  |  |  |  |  | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Practical check | Project | Share of ECTS | Prague | Max | | OUTCOME 1 | 10 % |  |  | 0,5 | 10% | 5 % | | OUTCOME 2 | 5 % | 15% |  | 1 | 20% | 10 % | | OUTCOME 3 | 5% | 15% |  | 1 | 20% | 10 % | | OUTCOME 4 | 5% | 10% |  | 0,75 | 15% | 7,5 % | | OUTCOME 5 |  | 15% |  | 0,75 | 15% | 7,5 % | | OUTCOME 6 |  |  | 20% | 1 | 20% | 10% | | Share in ECTS | 1,25 | 2,75 | 1 | 5 | - | - | | Altogether | 25 % | 55% | 25% | 100% | 50 % | 100 % |       A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.    Assessment during the exam period:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** |  |  |  | 5 % | | **OUTCOME 2** |  |  |  | 10 % | | **OUTCOME 3** |  |  |  | 10 % | | **OUTCOME 4** |  |  |  | 7,5 % | | **OUTCOME 5** |  |  |  | 7,5 % | | **OUTCOME 6** |  |  |  | 10% | | **Share in ECTS** |  |  |  |  | | **Altogether** |  |  |  | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | And | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | |
| |  |  |  | | --- | --- | --- | | Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | Title | Number of copies | Number of students | | Šuman, S., Decision Support and Management Systems – Theory and Solved Examples, University of Applied Sciences of Rijeka, 2016. | Script available in the library on demand |  | | <http://www.promethee-gaia.net/assets/vpgetstarted.pdf> | E-source |  | | <https://support.microsoft.com/en-us/office/create-a-pivottable-to-analyze-worksheet-data-a9a84538-bfe9-40a9-a8e9-f99134456576> | E-source |  | | <https://www.excel-easy.com/data-analysis/analysis-toolpak.html> | E-source |  | | <https://limesurvey.srce.hr/upute/index.html> | E-source |  | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | |
| 1. Turban,E.,Sharda,R.,Delen, D.,Decision support and business intelligence systems, Pearson(international edition),9-th edition,2011. | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | |

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| **Course holder** | **Ph.D. Socio. Jakupović, prof. struč. Stud.**  **Maria Krajči- assistant** | |
| **Nomenclature** | **3D modeling** | |
| **Study program** | **Undergraduate Study of Computer Science** | |
| **Item Status** | **electoral** | |
| **Year** | **3. / V.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| **1. Course description** | | | | | | | | | | | |
| The course covers the procedures of creating 3D graphic objects through the basic phases of 3D modeling as well as the creation of simpler 3D animations in the selected software tool. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Acquiring skills in creating 3D objects and animations in the selected software tool. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| Passed course Computer Graphics | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Explain the mathematical basis of 3D modeling and basic procedures in 3D computer graphics 2. Discuss the application of 3D graphics with a focus on 3D scanning and 3D printing 3. Create a 3D model and a complete virtual scene 4. Design and create a 3D animation based on a defined timeline | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| Overview of the differences between 2D and 3D computer graphics  Mathematical basis and concepts of 3D computer graphics  3D Modeling and Object Representation  Lightening and shading and texture methods  3D geometric transformations  3D Animation Techniques and Basic Animation Principles  Animation timing and scene organization | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  ☐Distance education  ☐Field Teaching | | | | | **☒Independent tasks**  **☒Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| Attendance at exercises of at least 70%;  Actively participate in solving practical tasks in lectures and exercises; Present the created project assignment from the selected topic - preparation of documentation | | | | | | | | | | | |
| 1. **Tracking1 student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper |  | | | Experimental work |  |
| Written exam |  | Viva voce | | |  | Assay |  | | | Research |  |
| Project | 1 | Continuous Knowledge Assessment | | |  | Report |  | | | Practical work | 1 |
| Portfolio |  |  | | |  |  |  | | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written exam** | **Project Model** | **Project Animation** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **15 %** |  |  | **0,75** | **7,5%** | **15 %** | | **OUTCOME 2** | **15%** |  |  | **0,75** | **7,5%** | **15 %** | | **OUTCOME 3** |  | **35** |  | **1,75** | **17,5%** | **35 %** | | **OUTCOME 4** |  |  | **35** | **1,75** | **17,5%** | **35 %** | | **Share in ECTS** | **1,5** | **1,75** | **1,75** | **5** | **-** | **-** | | **Altogether** | **30 %** | **35%** | **35%** | **100%** | **50 %** | **100 %** |     Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.                Assessment during the exam period:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** |  | **15 %** | **0,75** | **7,5%** | **15 %** | | **OUTCOME 2** |  | **15%** | **0,75** | **7,5%** | **15 %** | | **OUTCOME 3** | **35** |  | **1,75** | **17,5%** | **35 %** | | **OUTCOME 4** | **35** |  | **1,75** | **17,5%** | **35 %** | | **Share in ECTS** | **3,5** | **1,5** | **5** | **-** | **-** | | **Altogether** | **30 %** | **35%** | **100%** | **50 %** | **100 %** | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Pandžić, Igor and Authors, Virtual Environments: Interactive 3D Graphics and Its Applications, Zagreb: Element, 2011 | | | | In procurement | | | | |  | | |
| https://www.blender.org/support/tutorials/ | | | |  | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Škaler, Kristina & Authors,Let's Learn the Basics of 3D Printing,Zagreb : Alfa, 2019 | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Doc. dr.sc. Bernard Vukelić, prof.v.š.**  **Bruno Polonijo- assistant**  **Matea Pešut, assistant** | |
| **Nomenclature** | **Advanced topics in the security of information and communication systems** | |
| **Study program** | **Undergraduate Professional Study of Computer Science** | |
| **Item Status** | **Electoral** | |
| **Year / Semester** | **3. / V.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | | | |
| The course teaches advanced knowledge in the field of security. Thematic units of the course contain topics from security: vulnerabilities of web applications, security of web services, modern cryptographic algorithms, biometrics as a modern technology of user authentication. Students analyze these topics through examples. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| The aim of the course is to acquire advanced knowledge on current topics in the security of information and communication systems. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| Attended the course Security of Information and Communication Systems | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Assess the security risks of web applications by applying an appropriate methodology. 2. Simulate attacks and examine web application vulnerabilities using selected tools. 3. Analyze aspects of web service security. 4. Analyze security authentication protocols and encryption protocols in wireless networks 5. Analyze the components of the biometric system and the types of biometric features used in authentication | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Risk assessment of web applications * Types of attacks on web applications * Web Application Vulnerabilities * Vulnerabilities of the web service * Sigurnost API-ja * SSH protocol architecture * Encryption algorithms in wireless networks * Biometrics and user authentication * Elements of biometric systems * Devices in biometric systems * Biometric physical characteristics (characteristics) * Biometric behavioral features (characteristics) | | | | | | | | | | | |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  ☐Distance education  ☐Field Teaching | | | | **☒Independent tasks**  ☐Multimedia & Network  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| Access continuous examinations  Create an assignment on your own | | | | | | | | | | | |
| 1. **Tracking1 student work** | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper | |  | | Experimental work |  |
| Written exam |  | Viva voce | | |  | Assay | |  | | Research |  |
| Project | 1 | Continuous Knowledge Assessment | | | 2 | Report | |  | | Practical work |  |
| Portfolio |  |  | | |  |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.     |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical verification** | **Written practical test** | **Task** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** |  | **10%** |  | **0,5** | **5%** | **10%** | | **OUTCOME 2** |  |  | **30%** | **1,5** | **15%** | **30%** | | **OUTCOME 3** | **10%** | **10%** |  | **1** | **10%** | **20%** | | **OUTCOME 4** | **10%** | **10%** |  | **1** | **10%** | **20%** | | **OUTCOME 5** | **10%** | **10%** |  | **1** | **10%** | **20%** | | **Share in ECTS** | **1,5** | **2** | **1,5** |  | **-** | **-** | | **Altogether** | **30%** | **40%** | **30%** | **100 %** | **50 %** | **100 %** |    A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  Assessment during the exam period:     |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** |  | **10%** | **0,5** | **10%** | | **OUTCOME 2** |  | **30%** | **1,5** | **30%** | | **OUTCOME 3** | **10%** | **10%** | **1** | **20%** | | **OUTCOME 4** | **10%** | **10%** | **1** | **20%** | | **OUTCOME 5** | **10%** | **10%** | **1** | **20%** | | **Share in ECTS** | **1,5** | **3,5** |  |  | | **Altogether** | **30%** | **70%** | **5** | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Materials used in lectures and exercises, available on the Merlin system | | | | E-Mail | | | | |  | | |
| Dujella A., Maretić M: Cryptography, University of Zagreb Textbook  Publisher: Element, Zagreb, 2007 | | | | in the procurement plan (7) | | | | |  | | |
|  | | | | | | | | | | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. OPERATING SYSTEM CONCEPTS 10th Edition, Silberschatz, Galvine, Gagne, Sixth Edition, John Wiley & Sons, Inc. 2018.; 2. MODERN OPERATING SYSTEMS, Andrew S. Tanenbaum, Second Edition, Prentice Hall, Inc, 2015.; 3. OPERATING SYSTEMS - Design and Implementation, Andrew S. Tanenbaum, Albert S. Woodhull, Second Edition Prentice Hall, Inc. 2015., 4. Principles of Operating Systems: Design and Applications, Stuart L Brian, Lulu.com, 2021. | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **Doc.dr.sc. Marin Kaluža, prof.v.š.** | |
| **Nomenclature** | **Software Engineering** | |
| **Study program** | **Undergraduate Professional Study of Informatics** | |
| **Item Status** | **Required** | |
| **Year/Semester** | **3. / VI.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **5** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | | | |
| Activities within the framework of systems engineering are taught in the course. Various models and methodologies of software and system development are studied. Students create software according to the selected model and methodology of software development. Types, methods and procedures of software testing are studied. Students create a software testing plan and conduct software testing that they have developed in previous courses. Students create automated procedures (batch, powershell, shell) scripts for deploying software into the production environment, and scripts for creating backups of the software development environment, and databases on the production environment. | | | | | | | | | | | |
| 1. **Course objectives** | | | | | | | | | | | |
| Acquisition of competencies for the engineering approach in the development of the software system. Adoption of competencies for verifying the compliance of the functionality of the software solution with the initial user specification of the requirements. Adoption of competencies for automated testing of software solutions and delivery of software solutions. | | | | | | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |
| Database Systems, Desktop Application Development, Interactive Web Application Development | | | | | | | | | | | |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |
| 1. Compare different models of the development cycle and the process of software system development. 2. Plan the development of components and their integration into the software system. 3. Design a program component and system using an engineering approach to development and object-oriented methods. 4. Integrate components into the information system and check the components and the system as a whole. 5. Validate the software solution using appropriate tools and designed cases for unit testing. 6. Conduct an analysis of the compliance of the functionality of the software product with user requirements (acceptance test). 7. Create automated procedures for delivery and backup of the software product. | | | | | | | | | | | |
| 1. **Course content** | | | | | | | | | | | |
| * Software Engineering. * Software Engineering Placement * Software product * Information Science and the Relationship with PI * Systems Engineering <> Software Engineering * Process approach to software product development and process development models, value and development costs * Properties of a Good Software Product, Key Challenges of Software Engineering * Professional and ethical responsibility * Software * Types of software systems * Characteristics of socio-technical systems, necessary properties * Reliability * Systems Engineering * Development process: Defining needs, system goals; System design and design problems; Subsystem development; Integration; Installation; Evolution (use and maintenance); Shutting down the system * System, people, and organization - mutual influences. * System procurement, procurement process. * Legacy systems. * Software Development * Software system development and models * Waterfall model i problemi * Evolutionary development i problemi * Component development (incremental delivery, spiral development) * Agile Software Development Models (Extreme Programming, Scrum) * Software Development Activities: Requirements Specification (Model), Design and Construction, Validation and Verification, Evolution * System Testing * Error, Failure * Testing * Software Tester * Software Testing Life Cycle * Test driven development * Testing process and forms (verification, validation, manual, automatic) * Types (levels) of testing (unit, integration, system, acceptance) * Testing techniques (black box, white box) * Types of testing (performance, load, stress) * Acceptance test (alpha, beta, regression) * Static Testing (Informal Review, Formal Review, Walkthrough, Technical Review, Peer Review, Inspection) * Smoke test, sanity test | | | | | | | | | | | |
| 1. **Types of teaching** | | | ☒Lectures  ☐Seminars and workshops  ☒Exercises  ☒Distance education  ☐Field Teaching | | | | | ☒Independent tasks  ☒Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| 1. **Comments** | | | | | | | | | | | |
| 1. **Student obligations** | | | | | | | | | | | |
| 1. Take the theoretical written exam 2. Prepare and present project documentation 3. Develop and defend the project (part of your study project – implementation of new system components and testing) | | | | | | | | | | | |
| 1. Monitoring student work | | | | | | | | | | | |
| Attending classes | 2 | Teaching activity | | |  | Seminar paper |  | | | Experimental work |  |
| Written exam | 1 | Viva voce | | |  | Assay |  | | | Research |  |
| Project | 2 | Continuous Knowledge Assessment | | |  | Report |  | | | Practical work |  |
| Portfolio |  |  | | |  |  |  | | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Theoretical written exam** | **Project documentation** | **Project defense** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | **20%** |  |  | **1** | **10%** | **20%** | | **OUTCOME 2** |  | **10%** |  | **0,5** | **5%** | **10%** | | **OUTCOME 3** |  | **20%** |  | **1** | **10%** | **20%** | | **OUTCOME 4** |  |  | **20%** | **1** | **10%** | **20%** | | **OUTCOME 5** | **10%** | **5%** | **5%** | **1** | **10%** | **20%** | | **OUTCOME 6** |  | **5%** |  | **0,25** | **2,5%** | **5%** | | **OUTCOME 7** |  |  | **5%** | **0,25** | **2,5%** | **5%** | | **Share in ECTS** | **1,5** | **2** | **1,5** | **5** | **-** | **-** | | **Altogether** | **30 %** | **40%** | **30%** | **100%** | **50 %** | **100 %** |     **The condition for taking the full exam is a project that is defended on the exam period (oral exam). A written examination is also written on the full exam.**    A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.      Grading on  exam period:   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | 20% |  | **20%** | | **OUTCOME 2** |  | 10% | **10%** | | **OUTCOME 3** |  | 20% | **20%** | | **OUTCOME 4** |  | 20% | **20%** | | **OUTCOME 5** | 10% | 10% | **20%** | | **OUTCOME 6** |  | 5% | **5%** | | **OUTCOME 7** |  | 5% | **5%** | | **Share in ECTS** | **1,5** | **3,5** | **-** | | **Altogether** | **30%** | **70%** | **100%** | | | | | | | | | | | | |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |
| Title | | | | Number of copies | | | | | Number of students | | |
| Sommerville, I: Software engineering – 9th edition, Addison-Wesley, 2011 | | | |  | | | | |  | | |
| Authorized Lectures | | | | e-edition | | | | |  | | |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |
| 1. Matijević, D., Kaluža, M.: Comparative Analysis of Software Test Automation Tools, Development of Business and Information Systems CASE 28, 06.06.-07.06.2016., Zagreb, ISSN 1334-448X, p. 37-44 2. Pavlić, M.: Information Systems, University of Rijeka, Rijeka, 2009. 3. Kaluža M,, Troskot K,, Vukelić B.: Comparison of front-end frameworks for web applications development, Zbornik Veleučilišta u Rijeka, 2018 4. Kaluža M., Kalanj M., Vukelić B.: A comparison of back-end frameworks for web application development, Zbornik Veleučilišta u Rijeka, 2019 5. Pavlović, M., Kaluža, M.: Comparison of state management on Javascript front-end development frameworks, Development of business and information systems CASE 2021, 22.02.-23.02.2021., Online, ISSN 1334-448X 6. Miljančić, I., Kaluža, M.: Comparison of cross-platform frameworks for building mobile applications, Development of business and information systems CASE 2020, 24.02.-25.02.2020., Zagreb, ISSN 1334-448X 7. Španja, H., Kaluža, M., Šuman, S.: Overview of the possibilities of source code protection, Development of business and information systems CASE 2019, 25.02.-26.02.2019., Zagreb, ISSN 1334-448X, p. 43-55 | | | | | | | | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |

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| **Course holder** | **dr. sc. Socio. Prof. Ozren Rafajac, prof. struč. Stud.** | |
| **Nomenclature** | **Digital Marketing** | |
| **Study program** | **Undergraduate Professional Study of Informatics** | |
| **Item Status** | **Binding** | |
| **Year / Semester** | **3. / VI.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **4** |
| **Broj sati (P+V+S)** | **2+2+0** |

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| 1. **Course description** | | | | | | | | | | | |  |
| The course analyzes strategies, channels, tools, and trends in digital marketing. Students are introduced to digital platforms and social networks, market research methodology, psychology of user behavior and learn how to improve user experiences (UX and CX). Students carry out independent digital marketing projects using various techniques and technologies to create digital promotional content. | | | | | | | | | | | |  |
| 1. **Course objectives** | | | | | | | | | | | |  |
| Use digital platforms, social networks and other tools to create digital promotional content. Apply the methodology of market research and analysis of user behavior with the aim of improving user experiences (UX and CX). Create marketing projects using various techniques and technologies to create digital promotional content. | | | | | | | | | | | |  |
| 1. **Course Enrolment Requirements** | | | | | | | | | | | |  |
| No conditions | | | | | | | | | | | |  |
| 1. **Expected learning outcomes for the course** | | | | | | | | | | | |  |
| 1. Identify elements of the marketing mix within the development of new ICT solutions/products 2. Analyze digital marketing strategies, channels, and tools 3. Integrate information technology into the company's marketing strategies 4. Apply modern CRM methods/tools to create loyal and profitable clients 5. Conduct market research and create a marketing plan for the selected business idea 6. Create promotional content for products and services 7. Propose marketing strategies for the observed company with the aim of achieving a sustainable competitive advantage | | | | | | | | | | | |  |
| 1. **Course content** | | | | | | | | | | | |  |
| * Basic elements of the marketing mix and trends in digital marketing - 4 hours: Definition of digital marketing and multi-channel marketing; Marketing Mix (7P); Trends in digital marketing; Digital disruptors; The benefits of digital marketing; * Digital Marketing Strategies, Channels and Tools – 8 hours: Introduction to Digital Marketing Strategy; Key features of a digital marketing strategy; Key types of digital media channels; Different types of marketing tools: SEO optimization; Google Ads campaigns; Advertising on social networks; E-mail marketing; Native advertising (Paid media content); * Introduction to digital platforms and social networks – 8 hours: The impact of social networks and digital platforms on shopping; Using digital media channels to support business goals; Advantages of digital media; Key challenges of digital communications; Communication concepts of digital marketing; * Psychology of User Behavior and Improving User Experience (UX) - 8 hours: Psychology of Consumers; How do customers feel and what worries them?; Customer characteristics; Introduction to user experience (UX + GUI); Social media and emotions; * Planning a digital marketing campaign - 8 hours: Challenges in developing and leading a digital marketing strategy; Digital business models for e-commerce; Digital revenue models; Creating a marketing plan; * Market research - 12 hours: Competition analysis and benchmarking; Analysis of the online market; Resources for online market analysis; Customer analysis and understanding of the digital consumer; Demand analysis and conversion marketing; Implications for Marketing Planning: Conversion Models; * Creating promotional content – 8 hours: Techniques of writing (web) promotional content (Copywriting); Tools for creating digital sales content; * Socially responsible communication – 4 hours: Recommendations on socially responsible communication. Case studies of socially responsible and irresponsible communication. | | | | | | | | | | | |  |
| 1. **Types of teaching** | | | **☒Lectures**  ☐Seminars and workshops  **☒Exercises**  ☐Distance education  ☐Field Teaching | | | | | **☒Independent tasks**  **☒Multimedia & Network**  ☐Laboratory  ☐Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |  |
| 1. **Comments** | | | | | | | | | | | |  |
| 1. **Student obligations** | | | | | | | | | | | |  |
| Fulfill the obligations prescribed by the Study Regulations and the Assessment Regulations.    Students who take the full exam or partial exam for outcome 5 and outcome 6 are required to submit a presentation and project assignment to the teacher's e-mail address or via the assignment module on the Merlin course page no later than the scheduled date and date of the exam. | | | | | | | | | | | |  |
| 1. **Monitoring student work** | | | | | | | | | | | |  |
| Attendance  teaching |  | Teaching activity | | 0,8 | Seminar paper | |  | | Experimental work | |  |  |
| Written exam |  | Viva voce | |  | Assay | |  | | Research | |  |  |
| Project | 0,8 | Continuous Knowledge Assessment | | 2,4 | Report | |  | | Practical work | |  |  |
| Portfolio |  |  | |  |  | |  | |  | |  |  |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | | | | | | | | |  |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes (table: Monitoring student work) and/or during the examination period, in accordance with the provisions of the Assessment Regulations. A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold of 50% for each learning outcome.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Pisani ispit 1** | **Pisani ispit 2** | **Presentation** | **Project** | **Share of ECTS** | **Prague** | **Max** | | **OUTCOME 1** | 12% |  |  |  | 0,48 | 6 | 12 | | **OUTCOME 2** | 12% |  |  |  | 0,48 | 6 | 12 | | **OUTCOME 3** | 12% |  |  |  | 0,48 | 6 | 12 | | **OUTCOME 4** |  | 12% |  |  | 0,48 | 6 | 12 | | **OUTCOME 5** |  |  |  | 20% | 0,8 | 10 | 20 | | **OUTCOME 6** |  |  | 20% |  | 0,8 | 10 | 20 | | **OUTCOME 7** |  | 12% |  |  | 0,48 | 6 | 12 | | **Share in ECTS** | **1,44** | **0,96** | **0,8** | **0,8** | **-** |  |  | | **Altogether** | **36** | **24** | **20** | **20** | **100%** | **50 %** | **100 %** |     A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.    Assessment during the exam period:     |  |  |  |  |  | | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Share of ECTS** | **Max** | | **OUTCOME 1** | 9 | 3 | 0,48 | 12 | | **OUTCOME 2** | 9 | 3 | 0,48 | 12 | | **OUTCOME 3** | 9 | 3 | 0,48 | 12 | | **OUTCOME 4** | 9 | 3 | 0,48 | 12 | | **OUTCOME 5** | 17 | 3 | 0,8 | 20 | | **OUTCOME 6** | 17 | 3 | 0,8 | 20 | | **OUTCOME 7** | 9 | 3 | 0,48 | 12 | | **Share in ECTS** | 3,16 | 0,84 | **-** |  | | **Altogether** | **79** | **21** | **100%** | **100 %** |     If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:       |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | | | | | | |  |
| 1. **Compulsory literature (at the time of application for the study programme)** | | | | | | | | | | | |  |
| Number of copies of compulsory literature in relation to the number of students currently attending classes in the course | | | | | | | | | | | |  |
| Title | | | | | | Number of copies | | | | Number of students | |  |
| 1. Ellis-Chadwick, F., Chaffey, D. (2019): Digital Marketing, Pearson, 7th Edition | | | | | | 11 - In the procurement procedure | | | |  | |  |
| 2. Kotler, P., Keller, K. L. (2008) MARKETING MANAGEMENT, Zagreb: Mate d.o.o. | | | | | | 5 available in the library. 6 in the procurement procedure. | | | |  | |  |
| 1. Škare, V. (2004); Internet marketing; Chapter 19 in Previšić, J., Ozretić Došen, Đ. (eds.): Marketing, Zagreb: Adverta <https://www.efzg.unizg.hr/UserDocsImages/MAR/tkomarac/UM-Internetski_marketing-separat_19_poglavlje.pdf> | | | | | | e-edition | | | |  | |  |
| 4. Claessens, M. (2020). The 7P Model of the Marketing Mix – A Comprehensive Marketing Strategy Framework. <https://poduzetnik.biz/produktivnost/7p-model-marketing-miksa-sveobuhvatni-okvir-marketinske-strategije/> | | | | | | e-edition | | | |  | |  |
| 1. Jurjević, J. (27/09/2019). Everything you need to know when it comes to user experience design: "People are lazy". Taken from <https://www.netokracija.com/korisnicko-iskustvo-savjeti-psihologija-160240> | | | | | | e-edition | | | |  | |  |
| 1. Viher, M. (2020). Digital Marketing: A Complete Guide for Beginners. <https://gotraffic.hr/blog/digitalni-marketing/> | | | | | | e-edition | | | |  | |  |
|  | | | | | | | | | | | |  |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | | | | | | | | |  |
| 1. Burns, M., (2016). The Customer Experience Management Maturity Model, Vision: The Customer Experience Maturity Playbook. In Forrester Research, Inc.  2. Classon, P (2019). A well-thought-out digital architecture guides an enterprise’s gradual maturation in delivering digital solutions that empower experiences, integrations, and insights, Viewpoint: Digital Architecture. Capgemini.  3. Kingsnorth, S. (2016). Digital Marketing Strategy: An Integrated Approach to Online Marketing, Kogan Page  4. Kotler, P, Kartajaya, H., Setiawan, I. (2016). Marketing 4.0: Moving from Traditional to  <https://www.amazon.com/gp/product/1119341205?utm_source=lookingformarketing&utm_medium=referral>  5. Ferrier, A., & Fleming, J. (2015). The advertising effect: How to change behaviour. Oxford University Press. (Case studies) | | | | | | | | | | | |  |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | | | | | | | | |  |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | | | | | | | | |  |

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| **Course holder** | **Dr.sc. Sabrina Šuman, prof. struč. stud.** | |
| **Nomenclature** | **Semester Professional Practice** | |
| **Study program** | **Undergraduate Professional Study of Informatics** | |
| **Item Status** | **Binding** | |
| **Year / Semester** | **3. / VI.** | |
| **Point value and method of teaching** | **ECTS coefficient of student workload** | **11** |
| **Number of hours (P+H+W+Pr)** | **0+0+0+300 BC** |

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| * 1. **Course description** | | | | |
| The course contributes to the completion and application of theoretical knowledge with practical knowledge in order to gain experience working in the IT profession in a real work environment. | | | | |
| * 1. **Course objectives** | | | | |
| Complete and apply theoretical knowledge with practical knowledge and gain experience of working in the IT profession in a real work environment, which enables a more successful inclusion in professional work | | | | |
| * 1. **Course Enrolment Requirements** | | | | |
| There are no conditions. | | | | |
| * 1. **Expected learning outcomes for the course** | | | | |
| 1. Apply previously acquired professional knowledge in a real work environment. 2. Demonstrate independence, responsibility and self-initiative in solving work tasks. 3. Apply business communication skills in a real work environment. 4. Acquire work habits according to the requirements of the real working environment. 5. Independently and responsibly prepare an expert report on the internship performed. | | | | |
| 1. **Course content** | | | | |
| - | | | | |
| 1. **Types of teaching** | ☐Lectures  ☐Seminars and workshops  ☐Exercises  ☐Distance education  ☐Field Teaching | | ☒Independent tasks  ☐Multimedia & Network  ☐Laboratory  ☒Mentoring work  ☐Other  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| 1. **Comments**   The course is not in a continuous monitoring system. | | | | |
| 1. **Student obligations** | | | | |
| During the professional practice, the student prepares a report showing the completed practice and the completed task (Article 13 of the Act). of the Ordinance on Professional Practice). | | | | |
| 1. **Monitoring student work:** | | | | |
| *Assessment is based on the evaluation of the adoption of learning outcomes in the course.* *A student has passed the course if he or she has completed the number of hours prescribed by the Ordinance on Professional Practice (Article 14), as evidenced by:*  *• Confirmation from the employer on the completed professional practice,*   *• Student's Report on the completed professional practice (written),*  *• Defense of the submitted Report (oral).* | | | | |
| 1. **Assessment and evaluation of students' work during classes and at the final exam** | | | | |
| *The grade is defined by the Ordinance on the Evaluation of Students of Undergraduate Professional and Specialist*  *Graduate Professional Studies of the Polytechnic of Rijeka (Article 6).*  ***Verification of the adoption of learning outcomes in the course:***     |  |  |  | | --- | --- | --- | | ***OUTCOMES*** | ***Student Report*** | ***Employer's Certificate*** | | ***OUTCOME 1*** | *Satisfy* | *Satisfy* | | ***OUTCOME 2*** | *Satisfy* | *Satisfy* | | ***OUTCOME 3*** | *Satisfy* | *Satisfy* | | ***OUTCOME 4*** | *Satisfy* | *Satisfy* | | ***OUTCOME 5*** | *Satisfy* | *Satisfy* | | ***Share in ECTS*** | ***9*** | ***2*** | | | | | |
| 1. **Mandatory literature** | | | | |
| Title | | Number of copies | | Number of students |
| Materials available in the e-course on the Moodle system. | | e-edition | |  |
| Ordinance on Professional Practice. | | e-edition | |  |
| 1. **Supplementary literature (at the time of application for the study programme)** | | | | |
| Instructions for the professional practice of the head of professional practice at the undergraduate professional study of Informatics. | | | | |
| 1. **Ways of quality monitoring that ensure the acquisition of output knowledge, skills and competencies** | | | | |
| A student survey at the end of the semester provides comprehensive feedback from students on the quality of course delivery and the acquisition of relevant knowledge, skills and competencies. | | | | |

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| **The name of the college** | **Undergraduate Thesis** | | | | | |
| **Course Holder** | **Mentor (holder of the selected course)** | | | | | |
| **Study program** | **Professional Undergraduate Study of Informatics** | | | | | |
| **Status College** | compulsory | | | | | |
| **Year** | 3. | **Semester** | YOU. | | **ECTS credits** | 17 |
| **Conduct of classes**  **(P + V + S+ Pr)** | Consultations in agreement with the mentor in accordance with the Ordinance on the final thesis. | | | | | |
| 1. **Objectives of the course** | | | | | | |
| To enable students to develop deeper knowledge, understanding, abilities and attitudes in the context of the study program and to develop the ability to integrate knowledge and present conclusions. | | | | | | |
| 1. **Requirements for the defense of the final thesis** | | | | | | |
| Passed all professional study exams, i.e. 180 ECTS credits were acquired. | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| Independently present professional content in written and spoken form in Croatian and English.  Learning outcomes related to the relevant course. | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Define and solve a professional problem 2. Apply the methodology of writing a professional paper 3. Apply the acquired knowledge and competencies acquired through professional studies 4. Apply the acquired knowledge and specific competencies from the relevant course 5. Respect the ethical principles and rules of literature citation 6. Show research results | | | | | | |
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| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** |  | | | | | |
| 1. **Condition for taking the full exam in the exam period** | | | | | | |
| **-** | | | | | | |
| 1. **Assessment of Adoption of Course Learning Outcomes** | | | | | | |
| The assessment of the adoption of the learning outcomes of the course Final Thesis is carried out in accordance with the Ordinance on Final Work and the Ordinance on Assessment.   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Written part of the final paper | Public Defense | Max | | OUTCOME 1 | **22** |  | **22** | | OUTCOME 2 | **5** |  | **5** | | OUTCOME 3 | **15** |  | **15** | | OUTCOME 4 | **20** |  | **20** | | OUTCOME 5 | **5** |  | **5** | | OUTCOME 6 |  | **35** | **35** | | Share in ECTS | **12** | **5** | **17** | | Altogether | **65** | **35** | **100** |   The monitoring elements and a description of the corresponding assessment are set out below:  **Written part of the final paper**  Excellent (5) – the paper is logically well structured, factually correct, subunits are connected, relevant and recent literature was used.  Very good (4) – the paper is well structured, the facts are presented, the literature is correctly processed, but the approach lacks creativity.  Good (3) – The paper presents only some of the relevant aspects of the topic, the literature is treated correctly, but only partially, the basic professional vocabulary is used.  Sufficient (2) – there are content deficiencies in the paper, the basic concepts are superficially explained and there is no deeper knowledge of the topic.  **Public defense of the final thesis**  Excellent (5) – the presentation is clear and highly informative, the answers to the questions are accurate and creative.  Very good (4) – the presentation is clear and substantive, the answers to the questions are only correct, they do not indicate a deeper reflection on the topic.  Good (3) – The presentation is clear and informative, but without a clear connection between theory and practice. Ability to answer only simple questions.  Sufficient (2) – The presentation is a retelling of the read text, the answers to the questions are scarce. | | | | | | |
| 1. **Required reading** | | | | | | |
| Regulations on Final Work | | | | | | |
| 1. **Dopus Literature** | | | | | | |
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# Syllabus of courses in the professional graduate study of Information Technologies in Business Systems

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| **The name of the college** | **MODELING AND SIMULATIONS** | | | | | |
| **Course Holder** | **Marina Rauker Koch prof., v. pred.** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **binding** | | | | | |
| **Year** | **1.** | **Semester** | **1.** | | **ECTS credits** | **6** |
| **Conduct of classes**  **(P + V + S+ Pr)** | **2+0+2+0** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| To introduce students to the modeling process, implementation methodology and application of simulation models using computer simulation language. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| There are no requirements for enrolling in the course. | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| Outcome 15: Create a simulation model for business process optimization  Outcome 17: Analyze ways to control complex, process and production systems using computers | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Interpret the basic ideas of simulation and ways of approaching simulation modeling. 2. Interpret calculated statistical indicators in a simulation model. 3. Create and interpret a queue simulation model. 4. Apply the selected simulation language in a discrete simulation. 5. Analyze the results obtained by manual and computer simulation. | | | | | | |
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| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** |  | | | | | |
| 1. **Student obligations** | | | | | | |
| Seminar/Project. | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | written verification | Practical tasks | seminar/project | Threshold | Max | | OUTCOME 1 | 20 |  |  | 10 | 20 | | OUTCOME 2 |  | 15 |  | 7,5 | 15 | | OUTCOME 3 |  |  | 25 | 12,5 | 25 | | OUTCOME 4 |  | 15 |  | 12,5 | 25 | | OUTCOME 5 |  |  | 25 | 7,5 | 15 | | Share in ECTS | 1,25 | 1,75 | 3 |  |  | | Altogether | 20 | 30 | 50 | 50 % | 100 % |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Share in ECTS | Max | | OUTCOME 1 | 20 |  | 1 | 20 | | OUTCOME 2 | 15 |  | 1 | 10 | | OUTCOME 3 |  | 25 | 1,5 | 30 | | OUTCOME 4 | 15 |  | 1 | 10 | | OUTCOME 5 |  | 25 | 1,5 | 30 | | Altogether | 50 | 50 | 6 | 100 % |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points for that outcome for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| Čerić, V. (1993). Simulation modeling. School book.  Born, R. G., & Stahl, I. (2004, December). WEBGPSS: the first two hours of simulation education. In Proceedings of the 2004 Winter Simulation Conference, 2004. (Vol. 2, pp. 2066-2074). IEEE. | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| |  |  | | --- | --- | |  | | | Stahl, I. (2019, December). Topics in discrete events simulation for business students. In *2019 Winter Simulation Conference (WSC)* (pp. 3332-3343). IEEE. | | |  | | | | | | | |

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|  | **DATABASE MANAGEMENT** | | | | | |
| **Course Holder** | **Assoc. Prof. dr. sc. Socio. Marin Kaluža, prof. struč. stud.** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **Binding** | | | | | |
| **Year** | 1. | **Semester** | 1. | | **ECTS credits** | 4 |
| **Conduct of classes**  **(P + V + S+ Pr)** | **P – lectures: 2V – exercises: 2** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Acquiring knowledge and competencies on the application of relational theory in database development. Acquiring knowledge and competencies about the procedures of managing the structure and data in the database, as well as the procedures of upgrading and maintaining the database. Acquiring knowledge of the structure and principle of operation of non-relational databases. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| / | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| **Outcome 8**: Apply appropriate methods and techniques for creating and managing databases.  **Outcome 11:** Present development and software solutions within the business organization.  **Outcome 12:** Apply appropriate methods and techniques to manage security and data protection in information and communication systems. | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Explain the application of relational algebra, operators, and normalization methods in database development. 2. Contrast the concepts of physical and logical structure of non-relational (NoSQL) and relational (SQL) databases. 3. Analyze the procedures for managing the physical parts of the selected DBMS, as well as the logical structure and elements of databases. 4. Present the possibilities of managing the physical and logical elements of the analyzed DBMS. | | | | | | |
|  | | | | | | |
| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** | / | | | | | |
| 1. **Student obligations** | | | | | | |
| */* | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical colloquium (written exam) | Practical colloquium 1 – seminar paper (DBMS analysis, group work) | Practical colloquium 2 – presentation (DBMS analyses, independent work) | Practical colloquium 3 – demonstration (DBMS management, independent work) | Threshold | Max | | 1. Explain the application of relational algebra, operators, and normalization methods in database development. | **15%** |  |  |  | **7,5%** | **15%** | | 1. Contrast the concepts of physical and logical structure of non-relational (NoSQL) and relational (SQL) databases. | **15%** |  |  |  | **7,5%** | **15%** | | 1. Analyze the procedures for managing the physical parts of the selected DBMS, as well as the logical structure and elements of databases. |  | **30%** |  |  | **15%** | **30%** | | 1. Present the possibilities of managing the physical and logical elements of the analyzed DBMS. |  |  | **20%** | **20%** | **20%** | **40%** | | Share in ECTS | **1,2** | **1,2** | **0,8** | **0,8** |  |  | | Altogether | **30%** | **30%** | **20%** | **20%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Theoretical part  (oral/written exam) | Practical part  Project | Max | | 1. Explain the application of relational algebra, operators, and normalization methods in database development. | **15%** |  | **15%** | | 1. Contrast the concepts of physical and logical structure of non-relational (NoSQL) and relational (SQL) databases. | **15%** |  | **15%** | | 1. Analyze the procedures for managing the physical parts of the selected DBMS, as well as the logical structure and elements of databases. |  | **30%** | **30%** | | 1. Present the possibilities of managing the physical and logical elements of the analyzed DBMS. |  | **40%** | **40%** | | Share in ECTS | **1,2** | **2,8** |  | | Altogether | **30%** | **70%** | **100 %** |   A student has passed a course if he/she has achieved a minimum of 50% of the predicted points for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points (per outcome) for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | And | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| Manger, R: Databases, Element, Zagreb, 2014.  Brewer, E.: Towards Robust Distributed System, Symposium on Principles of Distributed Computing (PODC), 2000  Materials used in lectures from the course Database Management available on the Merlin system. | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| Fox A., Brewer, E.: Harvest, yield, and scalable tolerant systems. In Proceedings of the 7th Workshop on Hot Topics in Operating Systems, pages 174--178, 1999.  Brewer, E.: CAP twelve years later: How the "rules" have changed. Computer, 45(2):23--29, 2012.  Gilbert, S., Lynch, N.: Brewers Conjunction and the Feasability of Consistent, Available, Partition-Tolerant Web Services. ACM SIGACT News, 2002, p. 33(2)  ISO/IEC 9075:1992,1999, 2003, 2008, 2011, 2016  Pavlić, M.: Database Design, University of Rijeka, Rijeka, 2011. | | | | | | |

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| **The name of the college** | **TOOLS FOR THE DEVELOPMENT OF INFORMATION SYSTEMS** | | | | | |
| **Course Holder** | **Ivan Šimac, mag. educ. Inf., Lecturer** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **binding** | | | | | |
| **Year** | **1.** | **Semester** | **1.** | | **ECTS credits** | **6** |
| **Conduct of classes**  **(P + V + S+ Pr)** | **P – lectures: 1V – exercises: 3** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Acquisition of competencies for planning, analysis and design of an information system. Acquisition of knowledge and competencies in the field of application of CASE and RAD tools. Acquiring competencies for web application development using RAD tools. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| / | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| **Outcome 4**: Create a business information system using appropriate RAD tools  **Outcome 6**: Design a business information system using appropriate CASE tools  **Outcome 8**: Apply appropriate methods and techniques for creating and managing databases.  **Outcome 11:** Present development and software solutions within the business organization. | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Create project documentation of the selected information system that includes user stories, process model, data model and user interface model of the system. 2. Analyze the possibilities of applying CASE and RAD tools in the development of information systems based on the set criteria 3. Create an application using the analyzed RAD tool for creating web applications. 4. Create a presentation that includes: project documentation, capabilities of the RAD tool used and functionalities of the developed software | | | | | | |
|  | | | | | | |
| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** | / | | | | | |
| 1. **Student obligations** | | | | | | |
| */* | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical colloquium (written exam) | Practical colloquium 1 – project (presentation) | Practical colloquium 2 – project (group work) | Practical colloquium 3 – project (independent work) | Threshold | Max | | 1. Create project documentation of the selected information system that includes user stories, process model, data model and user interface model of the system. | **10%** |  | **10%** | **15%** | **17,5%** | **35%** | | 1. Analyze the possibilities of applying CASE and RAD tools in the development of information systems based on the set criteria | **10%** |  | **5%** | **5%** | **10%** | **20%** | | 1. Create an application using the analyzed RAD tool for creating web applications. |  |  | **35%** |  | **17,5%** | **35%** | | 1. Create a presentation that includes: project documentation, capabilities of the RAD tool used and functionalities of the created software |  | **10%** |  |  | **5%** | **10%** | | Share in ECTS | **1,2** | **0,6** | **3,0** | **1,2** |  |  | | Altogether | **20%** | **10%** | **50%** | **20%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Theoretical part  (oral/written exam) | Practical part  Project | Max | | 1. Create project documentation of the selected information system that includes user stories, process model, data model and user interface model of the system. | **10%** | **25%** | **35%** | | 1. Analyze the possibilities of applying CASE and RAD tools in the development of information systems based on the set criteria | **10%** | **10%** | **20%** | | 1. Create an application using the analyzed RAD tool for creating web applications. |  | **35%** | **35%** | | 1. Create a presentation that includes: project documentation, capabilities of the RAD tool used and functionalities of the created software |  | **10%** | **10%** | | Share in ECTS | **1,2** | **4,8** |  | | Altogether | **20%** | **80%** | **100 %** |   A student has passed a course if he/she has achieved a minimum of 50% of the predicted points for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points (per outcome) for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | And | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| G.K.A. D.: Evolvement of Computer Aided Software Engineering (CASE) Tools: A User Experience, University of Colombo School of Computing, University of Colombo, Sri Lanka, 2017  Materials used in lectures from the course Information Systems Development Tools available on the Moodle system. | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| Prashanth Kumar B., Prashanth Y.: Improving the Rapid Application Development process model, 2014 Conference on IT in Business, Industry and Government (CSIBIG), Indore, India, 2014  Beynon-Davies P., Holmes S.: Design breakdowns, scenarios and rapid application development, Information and Software Technology, Volume 44, Issue 10, 2002, pp. 579-592 | | | | | | |

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| **The name of the college** | **COMMUNICATION TECHNOLOGIES** | | | | | |
| **Course Holder** | **Žaklina Šupica, lecturer**  **Lidija Jakovčić** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **binding** | | | | | |
| **Year** | **First** | **Semester** | | **And** | **ECTS credits** | **6** |
| **Conduct of classes**  **(P + V + S+ Pr)** | **2P+2VJ** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Students acquire the basic knowledge, skills and competencies necessary to understand how communication technologies are applied in business systems. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| Attended the course Computer Networks. | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| **Outcome 1:** Select appropriate application solutions to support business functions  **Outcome 11:** Present development and software solutions within the business organization  **Outcome 12:** Apply appropriate methods and techniques to manage security and data protection in information and communication systems. | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Explain the basic concepts of communication technologies (OSI reference model, communication protocols, standardization) 2. Analyze the possibilities and limitations of the application of different communication technologies and protocols in business systems on the given examples 3. Compile project documentation for the implementation of communication technologies in the business environment on the given examples 4. Present possible solutions for the implementation of communication technologies in the business environment on given examples | | | | | | |
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| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other: Work on the computer | | | |
| 1. **Comments** |  | | | | | |
| 1. **Student obligations** | | | | | | |
| Adherence to the Study Regulations and the Assessment Regulations. Create a solo or team project assignment. | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| **Continuous verification:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | Independent tasks | Theoretical written exam | Project assignment | Threshold | Max | | OUTCOME 1 | **5%** | **30%** |  | **17,5%** | **35%** | | OUTCOME 2 | **10%** | **10%** |  | **10%** | **20%** | | OUTCOME 3 | **5%** |  | **25%** | **15%** | **30%** | | OUTCOME 4 |  |  | **15%** | **7,5%** | **15%** | | Share in ECTS | **1,2** | **2,4** | **2,4** | **-** | **6** | | Altogether | **20%** | **40%** | **40%** | **50%** | **100%** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Written exam | Viva voce | Max | | OUTCOME 1 | **34%** | **1%** | **35%** | | OUTCOME 2 | **19%** | **1%** | **20%** | | OUTCOME 3 | **29%** | **1%** | **30%** | | OUTCOME 4 | **1%** | **14%** | **15%** | | Share in ECTS | **4,98** | **1,02** | **6** | | Altogether | **83%** | **17%** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points for that outcome for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| Materials available in the e-learning system (lectures and exercises).  White, C.(2015). Data Communications and Computer Networks: A Business User Approach, Course Technology, Prasad, K. V. K. K. (2003). *Principles of Digital Communication System & Computer Network*. Dreamtech Press.  CarNET Manuals – Communication Protocols  Manuals and guides available online. | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| Grant, A. E., & Meadows, J. H. (Eds.). (2020). *Communication technology update and fundamentals*. Routledge.  Laudon, K., & Laudon, J. (2009). Management Information Systems: International Edition, 11/E. *KC Laudon, Management Information Systems: International Edition*, *11*. | | | | | | |

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| **The name of the college** | **INFORMATION SYSTEMS QUALITY MANAGEMENT** | | | | | |
| **Course Holder** | **Dr. sc. Socio. Sabrina Šuman, prof. struč. Study** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **binding** | | | | | |
| **Year** | **1.** | **Semester** | **2.** | | **ECTS credits** | **4** |
| **Conduct of classes**  **(P + V + S+ Pr)** | **1+0+2+0** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Adopt basic terminology and apply methods in the field of quality assurance and management of information systems. | | | | | | |
| 1. **Course Enrolment Requirements** | | | | | | |
| There are no conditions. | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| **Outcome 2:** Assess the place and role of ICT in the context of organization, management and business processes.  **Outcome 7:** Create an application solution using an appropriate development framework  **Outcome 13:** Identify appropriate standards and apply appropriate quality management methods in the development of business information systems | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| Upon completion of this course, students will be able to:   1. Compare ISO standards, TQM approach and methods, maturity models and models of excellence 2. Plan the integration of quality principles through the phases of information system development 3. Examine the quality of the selected information system based on the selected parameters 4. Compare functional and non-functional requirements and types of information system quality 5. Create test scenarios for the selected information system | | | | | | |
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| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** |  | | | | | |
| 1. **Student obligations** | | | | | | |
| **Completed activities are a condition for access to the full exam.** | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Seminar | Activity | Threshold | Max | | OUTCOME 1 | **10 %** | **10%** |  | **10%** | **20 %** | | OUTCOME 2 | **10 %** | **15%** |  | **12,5%** | **25 %** | | OUTCOME 3 | **10 %** | **15%** |  | **12,5%** | **25 %** | | OUTCOME 4 | **10 %** |  |  | **5%** | **10 %** | | OUTCOME 5 |  |  | **20%** | **10%** | **20 %** | | Share in ECTS | **1,6** | **1,6** | **0,8** | **-** | **-** | | Altogether | **40 %** | **40%** | **20%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical written exam | Viva voce | Prague | Max | | OUTCOME 1 | **10 %** | **10%** | **10%** | **20 %** | | OUTCOME 2 | **10 %** | **15%** | **12,5%** | **25 %** | | OUTCOME 3 | **10 %** | **15%** | **12,5%** | **25 %** | | OUTCOME 4 | **10 %** |  | **5%** | **10 %** | | OUTCOME 5 |  | **20%** | **10%** | **20 %** | | Share in ECTS | **1,6** | **2,6** | **-** | **-** | | Altogether | **40 %** | **60%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points for that outcome for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | A | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| 1. Pezze, M., Young,M.,Software Testing and Analysis:Process, Principles, and Techniques, Wiley and Sons, 2008, http://ix.cs.uoregon.edu/~michal/book/Samples/book.pdf 2. Kondić, Živko, Quality and Methods of Improvement, Varaždin : Government. nakl., 2004 (Čakovec : "Zrinski") 3. Juran, Joseph M., Quality Planning and Analysis: From Product Development to Use, 3rd ed. prepared by Frank M. Gryna, Zagreb, Mate, 1999. 4. <https://www.iso.org/standards-catalogue/browse-by-ics.html> 5. <http://se.ethz.ch/~meyer/publications/testing/principles.pdf> 6. <https://smartbear.com/test-management/testing-scripts-cases-scenarios/> 7. https://www.softwaretestinghelp.com/test-cases-vs-test-scenarios/ | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| 1. Knowles, G.: Quality Management, Graeme Knowles & Ventus Publishing ApS, 2011 2. Sallis, E.:Total Quality Management in Education, Kogan Page, 2012 3. Kemp,S.: Quality management demystified, McGRAW-HILL, PMP, 2006 | | | | | | |

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| **The name of the college** | **PRODUCTION PROCESS CONTROL SYSTEMS** | | | | | |
| **Course Holder** | **M.Sc. Vesna Krajčí, v. pred.** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **Regular** | | | | | |
| **Year** | 1. | **Semester** | And | | **ECTS credits** | 4 |
| **Teaching (P+V+S+Pr)** | **1+2+0+0** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Acquisition of specific competencies in the areas of planning systems for production process management and the application of new technologies in modern production systems and service activities. From general competencies, developing the ability to analyze and synthesize, work independently and work in small groups (teamwork) and the presentation of achieved results. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| There are no conditions. | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| **Outcome 16:** Create a production system plan  **Outcome 17:** Analyze ways to control complex, process and production systems using computers  **Outcome 18:** Analyze the application and automation possibilities of robots. | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Distinguish between types of production and ways of their balancing.  2. Create a structural matrix and network diagram in the process of planning production systems and projects  3. Analyze the hierarchy of complex production systems and SCADA systems and computer-integrated manufacturing.  4. Compare the possibilities of applying robots in flexible production systems and service industries.  5. Argue the choice of an appropriate automation and communication system in the production process. | | | | | | |
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| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** |  | | | | | |
| 1. **Student obligations** | | | | | | |
|  | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **First colloquium** | **Second colloquium** | **Project assignment** | **Threshold** | **Max** | | **OUTCOME 1** | 16 % | - | 4 % | **10 %** | **20 %** | | **OUTCOME 2** | 16 % | - | 4 % | **10 %** | **20 %** | | **OUTCOME 3** | - | 16 % | 4 % | **10 %** | **20 %** | | **OUTCOME 4** | - | 16 % | 4 % | **10 %** | **20 %** | | **OUTCOME 5** | - | 16 % | 4 % | **10 %** | **20 %** | | **Share in ECTS** | 1.28 | 1.92 | 0.8 | **-** | **-** | | **Altogether** | **32 %** | **48 %** | **20 %** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | 16 % | 4 % | **20 %** | | **OUTCOME 2** | 16 % | 4 % | **20 %** | | **OUTCOME 3** | 16 % | 4 % | **20 %** | | **OUTCOME 4** | 16 % | 4 % | **20 %** | | **OUTCOME 5** | 16 % | 4 % | **20 %** | | **Share in ECTS** | 3.2 | 0.8 | **-** | | **Altogether** | **80 %** | **20 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points for that outcome for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| 1. N. Majdandžić: Production Management, Faculty of Mechanical Engineering, Slavonski Brod, 2001.  2. Z. Kovačić, S. Bogdan, V. Krajčí: Basics of Robotics, Graphis, Zagreb, 2002.  3. T. Mikac, D. Blažević: Production Planning and Management, Faculty of Engineering, Rijeka, 2007.  4. teaching materials for the e-course Production Process Management Systems available in the Merlin e-learning system, Polytechnic of Rijeka, 2021 | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| 1. N. Slack, S. Chambers, R. Johnson: Operations management, 6th edition, Pearson, Harlow, 2010.  2. S. Bogdan, F.L. Lewis, Z. Kovačić, J. Mireles: Manufacturing systems control design - A matrix-based approach, Springer-Verlag, London, 2006. | | | | | | |

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| **The name of the college** | **SOFTWARE ENGINEERING** | | | | | |
| **Course Holder** | **Assoc. Prof. dr. sc. Marin Kaluža, prof. struč. stud.** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **Binding** | | | | | |
| **Year** | 1. | **Semester** | 2. | | **ECTS credits** | 4 |
| **Conduct of classes**  **(P + V + S+ Pr)** | **P – lectures: 1V – exercises: 2** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Acquiring knowledge and competencies about the engineering approach in software development and the application of various models of system development. Acquisition of competencies for software development using the selected software development model in the development of project documentation and software development. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| / | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| Outcome 6: Design a business information system using appropriate CASE tools  Outcome 7: Create an application solution using an appropriate development framework  Outcome 9: Integrate the principles of software engineering in the development of information systems.  Outcome 11: Present development and software solutions within the business organization.  Outcome 12: Apply appropriate methods and techniques to manage security and data protection in information and communication systems. | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Explain the scope and scope of activities, models and activities involving system and software engineering. 2. Create a system development plan, and explain the process of the system development process, and the features and problems of legacy systems. 3. Formulate project documentation for the given software being developed, and explain the activities in software development. 4. Create a planned system using a selected software development model. 5. Analyze and criticize the processes of development of other systems, and propose technological and technical improvements. | | | | | | |
|  | | | | | | |
| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** | / | | | | | |
| 1. **Student obligations** | | | | | | |
| */* | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | OUTCOMES | Theoretical colloquium (written exam) | Practical colloquium 1 – project (independent work) | Practical colloquium 2 – project (group work) | Practical colloquium 3 – critical review (independent work) | Threshold | Max | | 1. Explain the scope and scope of activities, models and activities involving system and software engineering. | **10%** |  |  |  | **5%** | **10%** | | 1. Create a system development plan, and explain the process of the system development process, and the features and problems of legacy systems. | **5%** |  | **5%** |  | **5%** | **10%** | | 1. Formulate project documentation for the given software being developed, and explain the activities in software development. | **5%** | **20%** | **5%** |  | **15%** | **30%** | | 1. Create a planned system using a selected software development model. | **5%** | **20%** | **5%** |  | **15%** | **30%** | | 1. Analyze and criticize the processes of development of other systems, and propose technological and technical improvements. |  |  |  | **20%** | **10%** | **20%** | | Share in ECTS | **1** | **1,6** | **0,6** | **0,8** |  |  | | Altogether | **25%** | **40%** | **15%** | **20%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Theoretical part  (oral/written exam) | Practical part  Project | Max | | 1. Explain the scope and scope of activities, models and activities involving system and software engineering. | **10%** |  | **10%** | | 1. Create a system development plan, and explain the process of the system development process, and the features and problems of legacy systems. | **5%** | **5%** | **10%** | | 1. Formulate project documentation for the given software being developed, and explain the activities in software development. | **5%** | **25%** | **30%** | | 1. Create a planned system using a selected software development model. | **5%** | **25%** | **30%** | | 1. Analyze and criticize the processes of development of other systems, and propose technological and technical improvements. |  | **20%** | **20%** | | Share in ECTS | **1** | **3** |  | | Altogether | **25%** | **75%** | **100 %** |   A student has passed a course if he/she has achieved a minimum of 50% of the predicted points for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points (per outcome) for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | And | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| Sommerville, I: Software engineering – 9th edition, Addison-Wesley, 2011  Materials used in lectures from the course Software Engineering available on the Moodle system. | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| Kaluža M,, Troskot K,, Vukelić B.: Comparison of front-end frameworks for web applications development, Zbornik Veleučilišta u Rijeka, 2018  Kaluža M., Kalanj M., Vukelić B.: A comparison of back-end frameworks for web application development, Zbornik Veleučilišta u Rijeka, 2019  Pavlović, M., Kaluža, M.: Comparison of state management on Javascript front-end development frameworks, Development of business and information systems CASE 2021, 22.02.-23.02.2021., Online, ISSN 1334-448X  Miljančić, I., Kaluža, M.: Comparison of cross-platform frameworks for building mobile applications, Development of business and information systems CASE 2020, 24.02.-25.02.2020., Zagreb, ISSN 1334-448X  Čančar, I., Abazović, D., Kaluža, M.: Use of Relational Database Data Dictionary for the Purpose of Generating Business Web Applications, Development of Business and Information Systems CASE 30, 26.02.-27.02.2018., Zagreb, ISSN 1334-448X, p. 47-56  Matijević, D., Kaluža, M.: Comparative Analysis of Software Test Automation Tools, Development of Business and Information Systems CASE 28, 06.06.-07.06.2016., Zagreb, ISSN 1334-448X, p. 37-44 | | | | | | |

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| **The name of the college** | **BUILDING OBJECT-ORIENTED APPLICATIONS** | | | | | |
| **Course Holder** | **Vlatka Davidović, v. pred.**  **Ivan Šimac, lecturer** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **binding** | | | | | |
| **Year** | **1.** | **Semester** | **2** | | **ECTS credits** | **6** |
| **Conduct of classes**  **(P + V + S+ Pr)** | **2 + 3 + 0 + 0** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Acquiring competencies for the selection and application of tools and methods for object-oriented analysis and design in the application development process and implementation using the object-oriented programming language. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
|  | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| **Outcome 7:** Create an application solution using an appropriate development framework  **Outcome 9**: Integrate the principles of software engineering in the development of information systems.  **Outcome 11**: Present development and software solutions within the business organization. | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| Upon completion of this course, students will be able to:   1. Analyze software development models 2. Design and document user requirements using object-oriented analysis in application development 3. Compile project documentation using methods for object-oriented modeling of information systems 4. Select and apply technologies and tools to build an object-oriented application. 5. Create an object-oriented application according to a previously made analysis and design 6. Prepare the application and the associated documentation for delivery. | | | | | | |
|  | | | | | | |
| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** |  | | | | | |
| 1. **Student obligations** | | | | | | |
| If a student takes a complete exam, he or she is obliged to do a project assignment in the prescribed scope beforehand. | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Pisani test** | **Project** | **Documentation** | **Threshold** | **Max** | | 1. Analyze software development models | **20%** |  |  | **10%** | **20%** | | 1. Design and document user requirements using object-oriented analysis in application development |  |  | **10%** | **5%** | **10%** | | 1. Compile project documentation using methods for object-oriented modeling of information systems |  |  | **20%** | **10%** | **20%** | | 1. Select and apply technologies and tools to build an object-oriented application. |  | **10%** |  | **5%** | **10%** | | 1. Create an object-oriented application according to a previously made analysis and design |  | **30%** |  | **15%** | **30%** | | 1. Prepare the application and the associated documentation for delivery. |  | **10%** |  | **5%** | **10%** | | **Share in ECTS** | **1,2** | **3** | **1,8** | **-** | **-** | | **Altogether** | **20%** | **50%** | **30%** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Project** | **Documentation** | **Viva voce** | **Max** | | **OUTCOME 1** | **20%** |  |  |  | **20%** | | **OUTCOME 2** |  |  | **10%** |  | **10%** | | **OUTCOME 3** |  |  | **20%** |  | **20%** | | **OUTCOME 4** |  | **5%** |  | **5%** | **10%** | | **OUTCOME 5** |  | **20%** |  | **10%** | **30%** | | **OUTCOME 6** |  | **5%** |  | **5%** | **10%** | | **Share in ECTS** | **1,2** | **1,8** | **1,8** | **1,2** | **-** | | **Altogether** | **20%** | **30%** | **30%** | **20%** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points for that outcome for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | A | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| 1. Xu, A., System Design Interview – An insider's guide, Second Edition, Byte Code LLC, 2020. 2. Dewailly, L., Building a RESTful Web Service with Spring: A hands-on guide to building an enterprise-grade, scalable RESTful web service using the Spring Framework, Packt Publishing Ltd., 2015. 3. Sommerwille,I. Software Engineering, 10th Edition, Pearson, 2016 4. Dennis, A., Haley Wixom,B., Tegarden, D.: Systems Analysis and Design, An Object-Oriented Approach with UML, 5th Edition, Wiley, 2015. | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| 1. Heckler, M., Spring Boot: Up and Running: Building Cloud Native Java and Kotlin Applications, O'Reilly, 2021. 2. Holt, J., Systems Engineering Demystified: A practitioner's handbook for developing complex systems using a model-based approach, Packt Publishing Ltd., 2021. 3. Gamma,E., Helm,R.,Johnson,R., Vlissides,J., Design Patterns - Elements of Reusable Object-Oriented Software, Addison-Wesley, 2007. 4. McLaughlin,B.D., Pollice,G., West,D., Head First Object-Oriented Analysis and Design, O'Reilly Media, Inc., 2007. | | | | | | |

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| **The name of the college** | **Construction of multimedia systems** | | | | | |
| **Course Holder** | **Marina Rauker Koch** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **binding** | | | | | |
| **Year** | **1.** | **Semester** | **2.** | | **ECTS credits** | **6** |
| **Conduct of classes**  **(P + V + S+ Pr)** | **2+2+0+0** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| To introduce students to the principles, technologies and standards of multimedia, as well as the process and methodology of creating multimedia systems. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| There are no requirements for enrolling in the course. | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| Create an application solution using the appropriate development framework (PI 6)  Identify appropriate standards and apply appropriate quality management methods in the development of business information systems (PI 10) | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| 1. Analyze the features of multimedia data types and multimedia systems. 2. Recommend a suitable technology platform for multimedia. 3. Apply the selected standard for data exchange over existing networks and applications, 4. Create a multimedia system with the help of selected tools. 5. Create documentation for the multimedia system. | | | | | | |
|  | | | | | | |
| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Comments** |  | | | | | |
| 1. **Student obligations** | | | | | | |
| *Create a multimedia system and supporting documentation with the help of selected tools and methodology.* | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| Assessment is based on the evaluation of the adoption of learning outcomes in the course. Assessment is carried out continuously during classes and/or during the examination period, in accordance with the provisions of the Ordinance on Assessment.  **Continuous verification:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **OUTCOMES** | **written verification** | **Practical task** | **project** | **Threshold** | **Max** | | **OUTCOME 1** | **20** |  |  | **10** | **20** | | **OUTCOME 2** | **10** |  |  | **5** | **10** | | **OUTCOME 3** |  | **20** |  | **10** | **20** | | **OUTCOME 4** |  |  | **35** | **17,5** | **35** | | **OUTCOME 5** |  |  | **15** | **7,5** | **15** | | **ECTS-A Program** | **1,75** | **1,25** | **3** |  |  | | **Altogether** | **30** | **20** | **50** | **50 %** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | **OUTCOMES** | **Written exam** | **Viva voce** | **Max** | | **OUTCOME 1** | **20** |  | **20** | | **OUTCOME 2** | **10** |  | **10** | | **OUTCOME 3** |  | **20** | **20** | | **OUTCOME 4** |  | **35** | **35** | | **OUTCOME 5** |  | **15** | **15** | | **Altogether** |  |  | **100 %** |     A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points for that outcome for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:     |  |  |  | | --- | --- | --- | | **Range of points (percentages)** | **Numerical rating** | **ECTS Grade** | | **90,00 – 100,00** | Excellent (5) | And | | **75,00 – 89,99** | Very good (4) | B | | **60,00 – 74,99** | Good (3) | C | | **50,00 – 59,99** | Sufficient (2) | D | | **0,00 – 49,99** | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| Morris Tim: Multimedia systems: delivering, generating, and interacting with multimedia'', Springer, 2000., | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| Vaughan Tay: Multimedia : Making It Work, Mc Graw-Hill, 2011.  Parhi, K. K., & Nishitami, T. (Eds.). (2018). Digital Signal processing for multimedia systems. CRC press.  Guan, L. (Ed.). (2017). Multimedia image and video processing. CRC press.  Tran, H. (2019). A survey of machine learning and data mining techniques used in multimedia system. *Dept. Comput. Sci., Univ. Texas Dallas Richardson, Richardson, TX, USA, Tech. Rep*.  Peláez, C. A., & Solano, A. (2023). A practice for the design of interactive multimedia experiences based on gamification: A case study in elementary education. *Sustainability*, *15*(3), 2385. | | | | | | |

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| **The name of the college** | **CONTROL AND AUDIT OF INFORMATION SYSTEMS** | | | | | |
| **Course Holder** | **dr .sc. Socio. Elena Krelja Kurelović, prof. Stud.** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | **BINDING** | | | | | |
| **Year** | **FIRST** | **Semester** | And | | **ECTS credits** | **4** |
| **Conduct of classes**  **(P + V + S+ Pr)** | **2P+1S** | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Introducing students to the basic knowledge, skills and competencies necessary for the implementation of control and audit of information systems and the importance of the same within the business organization. | | | | | | |
| 1. **Requirements for enrolment in the course** | | | | | | |
| There are no conditions. | | | | | | |
| 1. **Programme-level learning outcomes to which the course contributes** | | | | | | |
| **Outcome 14:** Identify appropriate standards and apply methods of control and audit of the business information system | | | | | | |
| 1. **Expected learning outcomes at course level** | | | | | | |
| * Distinguish the basic concepts in the control and audit of business information systems as a part of business system management. * Explain the relevant standards, methods and tools used in the audit process of information business systems. * Analyze the researched methods of the business information systems audit procedure on the given examples. * To present the explored ways of possible solutions for improving business information systems based on the control and audit carried out on the given examples. | | | | | | |
|  | | | | | | |
| 1. **Types of teaching** | lectures  Auditory exercises  seminars and workshops  Distance education  Field Teaching | | | Independent tasks  Multimedia & Network  laboratory  Mentoring work  Other: Work on the computer | | |
| 1. **Comments** |  | | | | | |
| 1. **Student obligations** | | | | | | |
| Adherence to the Study Regulations and the Assessment Regulations. | | | | | | |
| 1. **Assessment, evaluation and monitoring of student work continuously during classes and during the exam period** | | | | | | |
| **Continuous verification:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | OUTCOMES | Independent tasks | Written theoretical exam | Project assignment | Threshold | Max | | OUTCOME 1 |  | **15%** |  | **7,5%** | **15%** | | OUTCOME 2 | **20%** | **25%** |  | **22,5%** | **45%** | | OUTCOME 3 |  |  | **25%** | **12,5%** | **25%** | | OUTCOME 4 |  |  | **15%** | **7,5%** | **15%** | | Share in ECTS | **0,8** | **1,6** | **1,6** | **-** | **4** | | Altogether | **20%** | **40%** | **40%** | **50%** | **100%** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Exam period:**   |  |  |  |  | | --- | --- | --- | --- | | OUTCOMES | Pisani ispit (e-test) | Viva voce | Max | | OUTCOME 1 | **14%** | **1%** | **15%** | | OUTCOME 2 | **44%** | **1%** | **45%** | | OUTCOME 3 | **24%** | **1%** | **25%** | | OUTCOME 4 | **5%** | **10%** | **15%** | | Share in ECTS | **3,48** | **0,52** | **4** | | Altogether | **87%** | **13%** | **100 %** |   A student has passed a course if he/she has achieved a percentage of points that is higher than or equal to the defined threshold for each learning outcome.  **Assessment:**  A student has passed the exam if he/she has achieved at least 50% of the predicted points for that outcome for each learning outcome in the course.  If the student has passed all the learning outcomes of the course, the points (percentages) of all passed learning outcomes are added up, and the final grade is formed based on the following table:   |  |  |  | | --- | --- | --- | | Range of points (percentages) | Numerical rating | ECTS Grade | | 90,00 – 100,00 | Excellent (5) | And | | 75,00 – 89,99 | Very good (4) | B | | 60,00 – 74,99 | Good (3) | C | | 50,00 – 59,99 | Sufficient (2) | D | | 0,00 – 49,99 | Insufficient (1) | F | | | | | | | |
| 1. **Required reading** | | | | | | |
| Educational content in the e-course.  Bosilj Vukšić, V., Ćurko, K., Jaković, B., Milanović Glavan, L., Pejić Bach, M., Pivar, J., ... & Zoroja, J., (2020), Fundamentals of Business Informatics. *Faculty of Economics and Business Zagreb*, 2020.  Spremić, M. (2017). *Security and Audit of Information Systems in the Digital Economy Environment*. University of Zagreb, Faculty of Economics and Business.  Standards and globally recognized frameworks (CobiT 2019 methodology (<https://www.isaca.org/resources/cobit>), ISO, ITIL)  Manuals and guides for the control and audit of information systems. | | | | | | |
| 1. **Dopus Literature** | | | | | | |
| Panian Ž.: Control and Audit of Information Systems, Sinergija, Zagreb, 2001;  Panian Ž., Spremić M.: Corporate Governance and Audit of Information Systems, Zgombić & Partners, Zagreb, 2007.  Champlain J.: Auditing Information Systems, John Wiley & Sons, 2003. 4.  CISA Review manual | | | | | | |

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| **The name of the college** | **COMPUTERIZED MANAGEMENT OF COMPLEX SYSTEMS** | | | | | |
| **Course Holder** | **M.Sc. Vesna Krajčí, v. pred.** | | | | | |
| **Study program** | **Professional Graduate Study of Information Technologies in Business Systems** | | | | | |
| **Status College** | Regular | | | | | |
| **Year** | 1. | **Semester** | II | | **ECTS credits** | 6 |
| **Teaching (P+V+S+Pr)** | 2+0+2+0 | | | | | |
| 1. **Objectives of the course** | | | | | | |
| Acquisition of specific competencies in the areas of modeling, analysing and controlling complex systems and their connection to computers for controlling and monitoring systems of different architectures and control loops. From general competencies, developing the ability to analyze and synthesize, work independently and work in small groups (teamwork) and the presentation of achieved results. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| Nema uvjeta. | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 16:** Izraditi plan proizvodnog sustava.  **Ishod 17:** Analizirati načine upravljanja složenim, procesnim i proizvodnim sustavima pomoću računala.  **Ishod 18:** Analizirati mogućnosti primjene i automatizacije robotima. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| 1. Procijeniti mogućnost modeliranja složenih sustava različitim metodama.  2. Analizirati složene sustave u vremenskom području i području kompleksne varijable.  3. Primijeniti osnovne metode upravljanja sustavima i analize stabilnosti sustava.  4. Usporediti različite načine povezivanja složenog sustava s računalima za upravljanje i nadzor.  5. Argumentirati prijedlog sklopovske izvedbe računalno upravljanog sustava. | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
|  | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **ISHODI** | **Prvi**  **kolokvij** | **Drugi kolokvij** | **Seminarski rad** | **Prag** | **Max** | | **ISHOD 1** | 16 % | - | 4 % | **10 %** | **20 %** | | **ISHOD 2** | 16 % | - | 4 % | **10 %** | **20 %** | | **ISHOD 3** | 16 % | - | 4 % | **10 %** | **20 %** | | **ISHOD 4** | - | 16 % | 4 % | **10 %** | **20 %** | | **ISHOD 5** | - | 16 % | 4 % | **10 %** | **20 %** | | **Udio u ECTS** | 2.88 | 1.92 | 1.2 | **-** | **-** | | **Ukupno** | **48 %** | **32 %** | **20 %** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | **ISHODI** | **Pisani ispit** | **Usmeni ispit** | **Max** | | **ISHOD 1** | 16 % | 4 % | **20 %** | | **ISHOD 2** | 16 % | 4 % | **20 %** | | **ISHOD 3** | 16 % | 4 % | **20 %** | | **ISHOD 4** | 16 % | 4 % | **20 %** | | **ISHOD 5** | 16 % | 4 % | **20 %** | | **Udio u ECTS** | 4.8 | 1.2 | **-** | | **Ukupno** | **80 %** | **20 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | **Raspon bodova (postotaka)** | **Brojčana ocjena** | **ECTS ocjena** | | **90,00 – 100,00** | Izvrstan (5) | A | | **75,00 – 89,99** | Vrlo dobar (4) | B | | **60,00 – 74,99** | Dobar (3) | C | | **50,00 – 59,99** | Dovoljan (2) | D | | **0,00 – 49,99** | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| 1. Z. Vukić, Lj. Kuljača: Automatsko upravljanje - analiza linearnih sustava, Kigen, Zagreb, 2005.  2. Z. Kovačić, S. Bogdan, V. Krajčí: Osnove robotike, Graphis, Zagreb, 2002.  3. N. Perić, I. Petrović, M. Vašak: Procesna automatizacija, Skripta Zavoda za ARI, Fakultet elektrotehnike i računarstva, Zagreb, 2013.  4. nastavni materijali za e-kolegij Računalno upravljanje složenim sustavima dostupni u sustavu za e-učenje Merlin, Veleučilište u Rijeci, 2021. | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| 1. N. Perić: Automatsko upravljanje - Predavanja, Skripta Zavoda za APR, Fakultet elektrotehnike i računarstva, Zagreb, 2005.  2. Z. Vrhovski: Mikroupravljači, Visoka tehnička škola u Bjelovaru, Bjelovar, 2020. | | | | | | |

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| **Naziv kolegija** | **SUČELJE POSLOVNIH I PROCESNIH SUSTAVA** | | | | | |
| **Nositelj kolegija** | **Marina Rauker Koch, prof. v. pred.**  **Žaklina** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **obvezan** | | | | | |
| **Godina** | **1.** | **Semestar** | **2.** | | **ECTS bodovi** | **4** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **1+2+0+0** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Upoznati studente s uporabom, ulogom i funkcioniranjem računalno upravljanih složenih, procesnih i proizvodnih sustava u proizvodnim poduzećima. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| Nema uvjeta za upis kolegija. | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 1:** Odabrati odgovarajuća aplikativna rješenja za potporu poslovnim funkcijama  **Ishod 13:** Identificirati primjerene standarde i primijeniti odgovarajuće metode upravljanja kvalitetom u razvoju poslovnog informacijskih sustava  **Ishod 17:** Analizirati načine upravljanja složenim, procesnim i proizvodnim sustavima pomoću računala. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| 1. Postaviti problem funkcionalnog povezivanja procesnih i poslovnih sustava. 2. Analizirati temeljne funkcije sučelja između procesnih i poslovnih sustava. 3. Analizirati kvalitetu sučelja koje povezuje procesni i poslovni sustav temeljem standardizacijskih preporuka. 4. Procijeniti svrhu sučelja koje povezuje vođenje proizvodnih procesa i planskih funkcija poslovnog sustava. 5. Analizirati primjenu sučelja između poslovnih i procesnih sustava u odabranom poduzeću. | | | | | | |
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| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
|  | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | ISHODI | pisana provjera | seminar/  izvješće | prezentacija | Prag | Max | | ISHOD 1 | **15** |  |  | **7,5** | **15** | | ISHOD 2 | **15** |  |  | **7,5** | **15** | | ISHOD 3 |  | **20** | **5** | **12,5** | **25** | | ISHOD 4 |  | **20** | **5** | **12,5** | **25** | | ISHOD 5 |  | **20** |  | **10** | **20** | | Udio u ECTS-u | **2,5** | **3** | **0,5** |  |  | | Ukupno | **40** | **50** | **10** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Pisani ispit | Usmeni ispit | Max | | ISHOD 1 | **15** |  | **15** | | ISHOD 2 | **15** |  | **15** | | ISHOD 3 | **15** | **10** | **25** | | ISHOD 4 |  | **25** | **25** | | ISHOD 5 |  | **20** | **20** | | Ukupno | **45** | **55** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Meyer H., Fuchs F.:, Manufacturing Execution Systems (MES): Optimal Design, Planning, and Deployment, 2009.; | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| ISA S95 i S88 standard  Das, S., Roy, K., & Nampi, T. (2020). Manufacturing, Control, and Automation. In Handbook of Research on Developments and Trends in Industrial and Materials Engineering (pp. 123-144). IGI Global.  Kletti, J. (Ed.). (2007). Manufacturing execution system-MES. Springer Science & Business Media.  Barenji, A. V. (2018). Cloud-based manufacturing execution system: case study FMS. International Journal of Industrial and Systems Engineering, 30(4), 449-467. | | | | | | |

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| **Naziv kolegija** | **DISTRIBUIRANI SUSTAVI** | | | | | |
| **Nositelj kolegija** | **doc. dr. sc. socio. Marin Kaluža, prof. struč.stud.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **Obvezan** | | | | | |
| **Godina** | **1.** | **Semestar** | **2.** | | **ECTS bodovi** | **4** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **P – predavanja: 2 S – seminari: 1** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Usvajanje znanja iz područja distribuiranih sustava. Usvajanje kompetencija za planiranje i izradu istraživačkog rada, prezentaciju istraživanja, te analizu drugih istraživačkih radova iz područja distribuiranih sustava. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
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| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 10:** Istražiti i primijeniti koncepte modularne i distribuirane arhitekture u razvoju softvera | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| 1. Suprotstaviti karakteristike distribuiranih i centraliziranih sustava. 2. Objasniti vrste, svojstva i principe rada distribuiranih sustava. 3. Planirati istraživački rad iz područja distribuiranih sustava. 4. Prezentirati rezultate provedenog istraživačkog rada iz područja distribuiranih sustava. | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** | / | | | | | |
| 1. **Obveze studenata** | | | | | | |
| */* | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | ISHODI | Teorijski kolokvij (pisani ispit) | Praktični kolokvij 1 – plan seminarskog rada (početni dijelovi istraživačkog rada) | Praktični kolokvij 2 – prezentacija (istraživačkog rada) | Praktični kolokvij 3 – seminarski rad (istraživački rad) | Prag | Max | | 1. Suprotstaviti karakteristike distribuiranih i centraliziranih sustava. | **15%** |  |  |  | **7,5%** | **15%** | | 1. Objasniti vrste, svojstva i principe rada distribuiranih sustava. | **15%** |  |  |  | **7,5%** | **15%** | | 1. Planirati istraživački rad iz područja distribuiranih sustava. |  | **25%** |  |  | **12,5%** | **25%** | | 1. Prezentirati rezultate provedenog istraživačkog rada iz područja distribuiranih sustava. |  |  | **15%** | **30%** | **22,5%** | **45%** | | Udio u ECTS | **1,2** | **1** | **0,6** | **1,2** |  |  | | Ukupno | **30%** | **25%** | **15%** | **30%** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Teorijski dio  (usmeni/pisani ispit) | Praktični dio  istraživački rad | Max | | 1. Suprotstaviti karakteristike distribuiranih i centraliziranih sustava. | **15%** |  | **15%** | | 1. Objasniti vrste, svojstva i principe rada distribuiranih sustava. | **15%** |  | **15%** | | 1. Planirati istraživački rad iz područja distribuiranih sustava. |  | **25%** | **25%** | | 1. Prezentirati rezultate provedenog istraživačkog rada iz područja distribuiranih sustava. |  | **45%** | **45%** | | Udio u ECTS | **1,2** | **2,8** |  | | Ukupno | **30%** | **70%** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario minimalno 50% predviđenih bodova.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50% predviđenih bodova (po ishodu).  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Coulouris, Dollimore, Kindberg: Distributed Systems, Concepts and Design, Addison-Wesley, 2001, www.cdk3.net  Materijali korišteni na predavanjima iz kolegija Distribuirani sustavi dostupno na sustavu Moodle. | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| Tanenbaum, van Steen: Distributed Systems, Principles and Paradigms, Prentice Hall, 2002, www.prenhall.com/tanenbaum  Krishna Nadiminti, Marcos Dias de Assunção, Rajkumar Buyya: Distributed Systems and Recent Innovations: Challenges and Benefits  Lee: Introduction to Distributed Systems, 2007 | | | | | | |

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| **Naziv kolegija** | **MODULARNO PROGRAMSKO INŽENJERSTVO** | | | | | |
| **Nositelj kolegija** | **izv. prof. dr. sc. socio. Alen Jakupović, prof. struč. stud.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **obvezan** | | | | | |
| **Godina** | **2**. | **Semestar** | **3.** | | **ECTS bodovi** | **4** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **1+2+0+0** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Usvojiti kompetencije za razvoj računalnih programa u modularnoj višeslojnoj arhitekturi. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| Nema uvjeta | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 10:** Istražiti i primijeniti koncepte modularne i distribuirane arhitekture u razvoju softvera | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| Završetkom ovog kolegija studenti će moći:   1. utvrditi korisničke zahtjeve za računalnim programom primjenom odgovarajućih metoda 2. oblikovati računalni program primjenom odgovarajućih metoda tako da zadovoljava utvrđene korisničke zahtjeve 3. izraditi računalni program s modularnom višeslojnom arhitekturom 4. sastaviti projektnu dokumentaciju razvoja računalnog programa s modularnom višeslojnom arhitekturom. 5. komercijalno i tehnički prezentirati računalni program | | | | | | |
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| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
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| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | ISHODI | Projektna dokumentacija | Obrana projekta | Prag | Max | | ISHOD 1 | 5 % | 5 % | **5 %** | **10 %** | | ISHOD 2 | 5 % | 5 % | **5 %** | **10 %** | | ISHOD 3 | 5 % | 15 % | **10 %** | **20 %** | | ISHOD 4 | 5 % | 45 % | **25 %** | **50 %** | | ISHOD 5 | 10 % |  | **5 %** | **10 %** | | Udio u ECTS | **1,2** | **2,8** | **-** | **-** | | Ukupno | **30 %** | **70 %** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Pisani ispit | Usmeni ispit | Max | | ISHOD 1 | 5 % | 5 % | **10 %** | | ISHOD 2 | 5 % | 5 % | **10 %** | | ISHOD 3 | 5 % | 15 % | **20 %** | | ISHOD 4 | 5 % | 45 % | **50 %** | | ISHOD 5 | 10 % |  | **10 %** | | Udio u ECTS | **1,2** | **2,8** | **-** | | Ukupno | **30 %** | **70 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| 1. Autorizirana predavanja | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| 1. Javascript Tutorial, <https://www.tutorialspoint.com/javascript/index.htm>, 5.9.2021. 2. VueJS Tutorial, <https://www.tutorialspoint.com/vuejs/index.htm>, 5.9.2021. 3. Learn JavaScript Tutorial, <https://www.javatpoint.com/javascript-tutorial>, 5.9.2021. 4. Express.js Tutorial, <https://www.javatpoint.com/expressjs-tutorial>, 5.9.2021. 5. Quasar, <https://quasar.dev/>, 5.9.2021. 6. Vue.js, <https://vuejs.org/v2/guide/>, 5.9.2021. 7. Express, <https://expressjs.com/>, 5.9.2021. 8. Heineman, G.T., Councill, W.T.: Component-Based Software Engineering: Putting the Pieces Together. Addison-Wesley, 2001 9. Cheesman, J., Daniels ,J.: UML Components: A Simple Process for Specifying Component-Based Software, Addison-Wesley, 2000. | | | | | | |

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| **Naziv kolegija** | **SIGURNOST WEB APLIKACIJA** | | | | | |
| **Nositelj kolegija** | **doc. dr. sc. socio. Bernard Vukelić prof. struč. stud.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **obvezni** | | | | | |
| **Godina** | **2.** | **Semestar** | 3. | | **ECTS bodovi** | 4 |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **2+1+0+0** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Cilj kolegija je upoznati studente sa najčešćim ranjivostima koje su vezane uz sigurnost web aplikacija. Primijeniti metode i tehnike za podizanje razine sigurnosti web aplikacija kroz praktične primjere. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| - nema uvjeta | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 2:** Procijeniti mjesto i ulogu IKT-a u kontekstu organizacije, menadžmenta i poslovnih procesa. **Ishod 12**: Primijeniti odgovarajuće metode i tehnike za upravljanje sigurnošću i zaštitom podataka u informacijskim i komunikacijskim sustavima. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| * Odabrati odgovarajuća aplikativna rješenja za potporu poslovnim funkcijama * Procijeniti mjesto i ulogu IKT-a u kontekstu organizacije, menadžmenta i poslovnih procesa * Primijeniti odgovarajuće metode i tehnike za upravljanje sigurnošću i zaštitom podataka u informacijskim i komunikacijskim sustavima | | | | | | |
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| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
| **Predati na ocjenu riješeni Zadatak i Aktivnost te prezentirati iste.** | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **ISHODI** | **Pisani test** | **Zadatak** | **Prag** | **Max** | | ISHOD 1 | 10% | 20% | 15% | 30% | | ISHOD 2 |  | 40% | 20% | 40% | | ISHOD 3 |  | 20% | 10% | 20% | | ISHOD 4 | 10% |  | 5% | 10% | | **Udio u ECTS** | **0,8** | **3,2** | - | - | | **Ukupno** | **20%** | **80%** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Pisani ispit | Zadatak | Max | | ISHOD 1 | 10% | 20% | 30% | | ISHOD 2 |  | 40% | 40% | | ISHOD 3 |  | 20% | 20% | | ISHOD 4 | 10% |  | 10% | | Udio u ECTS | **0,8** | **3,2** | **-** | | Ukupno | **20%** | **80%** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Debogović A., Delija D., Sirovatka G.: Alati za penetracijsko testiranje web aplikacija na operacijskom sustavu Kali Linux, Intus informatika, 2020. | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| Web Application Security Testing A Complete Guide - 2021., The Art of Service - Web Application Security Testing Publishing, Blokdyk G.,2020; Web Application Security: Exploitation and Countermeasures for Modern Web Applications, Hoffman A., ORailly, 2020.; | | | | | | |

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| **Naziv kolegija** | **PLANIRANJE INFORMACIJSKIH SUSTAVA** | | | | | |
| **Usmjerenje** | **POSLOVNI INFORMACIJSKI SUSTAVI** | | | | | |
| **Nositelj kolegija** | **izv. prof. dr. sc. socio. Alen Jakupović, prof. struč. stud.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **obvezan** | | | | | |
| **Godina** | **2.** | **Semestar** | **4** | | **ECTS bodovi** | **4** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **2+0+1+0** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Usvojiti kompetencije za izradu strateškog plana razvoja informacijskog sustava. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| Nema uvjeta | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 1:** Odabrati odgovarajuća aplikativna rješenja za potporu poslovnim funkcijama  **Ishod 3:** Izraditi strateški plan razvoja  poslovnih informacijskih sustava.  **Ishod 5:** Implementirati internetske tehnologije i e-poslovanje u poslovni informacijski sustav  **Ishod 11:** Prezentirati razvojna i programska rješenja u okviru poslovne organizacije. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| Završetkom ovog kolegija studenti će moći:   1. utvrditi smjer razvoja poslovne organizacije primjenom odgovarajućih metoda (analiza poslovne dokumentacije, intervjuiranje, analiza trenutne poslovne situacije, analiza trendova u pripadajućem poslovnom sektoru, analiza zahtjeva poslovanja i kupaca, SWOT) 2. analizirati trenutno stanje informacijskog sustava primjenom odgovarajućih metoda (analiza dokumentacije ISa, intervjuiranje, analiza trendova u tehnologiji, analiza konkurencije, SWOT) 3. izraditi prijedlog smjera razvoja informacijskog sustava temeljem smjera razvoja poslovne organizacije i trenutnog stanja njezina informacijskog sustava 4. izraditi plan razvoja informacijskog sustava temeljem njegova smjera razvoja 5. sastaviti strateški plan razvoja informacijskog sustava | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
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| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | ISHODI | Pisani test | Strateški plan | Prezentacija | Prag | Max | | ISHOD 1 | 5 % | 10 % | 5 % | **10 %** | **20 %** | | ISHOD 2 | 5 % | 15 % | 5 % | **12,5 %** | **25 %** | | ISHOD 3 | 5 % | 15 % | 5 % | **12, 5 %** | **25 %** | | ISHOD 4 | 5 % | 10 % | 5 % | **10 %** | **20 %** | | ISHOD 5 |  | 10 % |  | **5 %** | **10 %** | | Udio u ECTS | **0,8** | **2,4** | **0,8** | **-** | **-** | | Ukupno | **20 %** | **60 %** | **20 %** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Pisani ispit | Usmeni ispit | Max | | ISHOD 1 | 5 % | 15 % | **20 %** | | ISHOD 2 | 5 % | 20 % | **25 %** | | ISHOD 3 | 5 % | 20 % | **25 %** | | ISHOD 4 | 5 % | 15 % | **20 %** | | ISHOD 5 |  | 10 % | **10 %** | | Udio u ECTS | **0,8** | **3,2** | **-** | | Ukupno | **20 %** | **80 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod. Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| 1. Autorizirana predavanja | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| 1. Pavlić, M., Jakupović, A., Čandrlić, S.: Modeliranje procesa, Sveučilište u Rijeci, Rijeka 2014. 2. Pavlić, M.: Informacijski sustavi, Sveučilište u Rijeci, Rijeka 2009. 3. Anita Cassidy: A Practical Guide to Information Systems Strategic Planning, New York, 2005. | | | | | | |

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| **Naziv kolegija** | **ERGONOMIJA I UPORABA RAČUNALA** | | | | | |
| **Usmjerenje** | **POSLOVNI INFORMACIJSKI SUSTAVI** | | | | | |
| **Nositelj kolegija** | **Kristina Dundović, dipl. ing., v. pred.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **obvezan** | | | | | |
| **Godina** | **2**. | **Semestar** | **III.** | | **ECTS bodovi** | **4** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **1 + 0 +2** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| **Upoznati studente s ergonomskim načelima oblikovanja radnog mjesta s računalom pritom se koristeći analizom elemenata računalnog sustava te analizom radnog okoliša.** | | | | | | |
| 1. **Uvjeti upisa na kolegij** | | | | | | |
|  | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 19:** Primijeniti prikladne ergonomske mjere u području uporabe računala na radnom mjestu. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| **Ishod 1:** Interpretirati definiciju i zakonitosti ergonomije.  **Ishod 2:** Analizirati elemente računalnog sustava s posebnim osvrtom na njezino ergonomsko oblikovanje.  **Ishod 3:** Analizirati radni okoliš i optimalne uvjete istog kao i karakteristične zdravstvene anomalije kod uporabe računala.  **Ishod 4:** Utvrditi potrebu za osiguranjem optimalnih uvjeta rada prilikom korištenja računalne opreme. | | | | | | |
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| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
|  | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **ISHODI** | **Test** | **Projektni zadatak** | **Prezentacija projektnog zadatka** | **Prag** | **Max** | | **ISHOD 1** | 25 % |  |  | **12,5 %** | **25 %** | | **ISHOD 2** |  | 15 % | 10 % | **12,5 %** | **25 %** | | **ISHOD 3** |  | 15 % | 10 % | **12,5 %** | **25 %** | | **ISHOD 4** |  | 15 % | 10 % | **12,5 %** | **25 %** | | **Udio u ECTS** | **1,0** | **2,0** | **1,0** | **-** | **-** | | **Ukupno** | **25 %** | **45 %** | **30 %** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | **ISHODI** | **Pisani ispit** | **Usmeni ispit** | **Max** | | **ISHOD 1** | 25 % |  | **25 %** | | **ISHOD 2** |  | 25 % | **25 %** | | **ISHOD 3** |  | 25 % | **25 %** | | **ISHOD 4** | 25 % |  | **25 %** | | **Udio u ECTS** | 2 | 2 |  | | **Ukupno** | **50 %** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | **Raspon bodova (postotaka)** | **Brojčana ocjena** | **ECTS ocjena** | | **90,00 – 100,00** | Izvrstan (5) | A | | **75,00 – 89,99** | Vrlo dobar (4) | B | | **60,00 – 74,99** | Dobar (3) | C | | **50,00 – 59,99** | Dovoljan (2) | D | | **0,00 – 49,99** | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| • Nastavni materijali objavljeni na stranicama kolegija  • Pravilnik o zaštiti na radu radnika izloženih statodinamičkim, psihofiziološkim i drugim naporima na radu NN 73/21 | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| • Kroemer, K.H.E.: Prilagođavanje rada čovjeku, Ergonomski priručnik, Naklada Slap, Jastrebarsko, 2000.  • Kirin, S.: Uvod u ergonomiju, Veleučilište u Karlovcu, Karlovac, 2019. | | | | | | |

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| **Naziv kolegija** | **INTERNET TEHNOLOGIJE I E-POSLOVANJE** | | | | | |
| **Usmjerenje** | **POSLOVNI INFORMACIJSKI SUSTAVI** | | | | | |
| **Nositelj kolegija** | **Mr. sc. Jasminka Tomljanović, v.pred.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **Obvezan** | | | | | |
| **Godina** | **2** | **Semestar** | **3** | | **ECTS bodovi** | **4** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **2+0+1+0** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Promicanje suradnje studenata i nastavnika u timskom okružju tijekom izrade 2 projektna zadatka. Uključivanje istraživanja potrebne literature na Internetu, analizu postojećih rješenja, identifikaciju zahtjeva i potreba vezanih uz projekte, planiranje i upravljanje vremenom, analiziranje i ocjenjivanje izrađenih projekata. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| Nema uvjeta | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 3:** Izraditi strateški plan razvoja poslovnih informacijskih sustava  **Ishod 5:** Implementirati internetske tehnologije i e-poslovanje u poslovni informacijski sustav  **Ishod 11:** Prezentirati razvojna i programska rješenja u okviru poslovne organizacije. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| Izgraditi web sjedište za prikaz odabrane internetske tehnologije.  Prezentirati utjecaje odabrane internetske tehnologije na ePoslovanje odabrane tvrtke.  Ocijeniti odabrana web sjedišta prema zadanim kriterijima ePoslovanja.  Implementirati odabrane internetske tehnologije kao potporu ePoslovanju segmenta poslovnog sustava.  Izraditi vremenski plan i upravljati projektnim aktivnostima u odabranom softveru. | | | | | | |
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| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
| Izrada 1 projektnog zadatka (individualno), izrada 2 projektnog zadatka (timski), analiza i ocjenjivanje projekata | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | ISHODI | Prvi projekt | Drugi projekt | Analiza projekta | Prag | Max | | ISHOD 1 | **20%** |  |  | **10%** | **20%** | | ISHOD 2 | **20%** |  |  | **10%** | **20%** | | ISHOD 3 | **5%** | **5%** | **10%** | **10%** | **20%** | | ISHOD 4 |  | **20%** |  | **10%** | **20%** | | ISHOD 5 |  | **20%** |  | **10%** | **20%** | | Udio u ECTS | **1,5%** | **1,5%** | **1%** |  |  | | Ukupno | **45%** | **45%** | **10%** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Pisani ispit | Usmeni ispit | Max | | ISHOD 1 | **10%** | **10%** | **20%** | | ISHOD 2 | **10%** | **10%** | **20%** | | ISHOD 3 | **10%** | **10%** | **20%** | | ISHOD 4 | **10%** | **10%** | **20%** | | ISHOD 5 | **10%** | **10%** | **20%** | | Udio u ECTS | **2** | **2** |  | | Ukupno | **50%** | **50%** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Gary Schneider, E-Business, Cengage Learning, 10th edition, 2013.  Gary Schneider, Electronic Commerce, Cengage Learning,12th edition, 2016. | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| Drago Ružić, Antun Biloš, Davorin Turkalj, E-marketing, 2014.  <https://redbrick.hr/digitalni-marketing-ebook/>  <http://www.infotrend.hr/clanak/2015/7/sve-je-digitalno,84,1173.html>  <https://ec.europa.eu/croatia/what_is_digital_transformation_changing_hr>  <https://about.google/products/>  <https://trello.com/> | | | | | | |

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| **Naziv kolegija** | **METODIKA STRUČNOG I ISTRAŽIVAČKOG RADA** | | | | | |
| **Nositelj kolegija** | **doc. dr. sc. human. Sanja Grakalić Plenković** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **izborni** | | | | | |
| **Godina** | **4.** | **Semestar:** | **I** | | **ECTS bodovi** | **6** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **1P + 1S + 2V** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Osposobiti studente za samostalno izvođenje i prezentiranje stručnog rada. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| - nema uvjeta | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 8:** Primijeniti odgovarajuće metode i tehnike za kreiranje i upravljanje bazama podataka.  **Ishod 11:** Prezentirati razvojna i programska rješenja u okviru poslovne organizacije. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| |  |  | | --- | --- | | 1. Klasificirati suvremenu znanost | | | 1. Obrazložiti kako djelotvorno i racionalno upravljati vlastitim znanjima i teorijsko-praktičnim postupcima transformacije | | | 1. Formulirati rezultate istraživanja i na sustavan, jednostavan i konkretan način prezentirati ih ciljanoj skupini | | | 1. Izraditi gantogram aktivnosti izrade stručnog rada 2. Primjenjivati zakonitosti, pravila i postupke metodologije i tehnologije znanstvenog istraživanja 3. Primijeniti različite znanstvene metode pri izradi stručnog rada. | | |  | |  | | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  x mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
| Ispuniti obveze propisane Pravilnikom o studiranju i Pravilnikom o ocjenjivanju.  Studenti koji pristupaju cjelovitom ispitu ili parcijalnom ispitu za **ishod 6** obavezni su najkasnije do zakazanog datuma i termina ispita na adresu e-pošte nastavnika dostaviti seminarski rad.  Studenti koji pristupaju cjelovitom ispitu ili parcijalnom ispitu za **ishod 3** obavezni su najkasnije do zakazanog datuma i termina ispita na adresu e-pošte nastavnika dostaviti prezentaciju te na usmenom ispitu prezentirati rezultate. | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | ISHODI | Prvi  kolokvij | Drugi  kolokvij | Prezentacija | Seminarski rad | Prag | Max | | ISHOD 1 | 14% |  |  |  | 7 | 14 | | ISHOD 2 | 14% |  |  |  | 7 | 14 | | ISHOD 3 |  |  | 22% |  | 11 | 22 | | ISHOD 4 |  | 14% |  |  | 7 | 14 | | ISHOD 5 |  | 14% |  |  | 7 | 14 | | ISHOD 6 |  |  |  | 22% | 11 | 22 | | Udio u ECTS | **1,68** | **1,68** | **1,32** | **1,32** |  |  | | Ukupno | **28** | **28** | **22** | **22** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Pisani ispit | Usmeni ispit | Max | | ISHOD 1 | 11 | 3 | 14 | | ISHOD 2 | 11 | 3 | 14 | | ISHOD 3 | 11 | 11 | 22 | | ISHOD 4 | 11 | 3 | 14 | | ISHOD 5 | 11 | 3 | 14 | | ISHOD 6 | 19 | 3 | 22 | | Udio u ECTS | **4,44** | **1,56** |  | | Ukupno | **74** | **26** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F |   Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice: | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Zelenika, R. (2011). Metodologija i tehnologija izrade znanstvenog i stručnog djela. 4. knjiga: Znanstvena, znanstvenostručna i stručna pisana djela. Rijeka: Ekonomski fakultet u Rijeci.  Wasserbauer, B., Varičak, I. (2009), Znanstveni i stručni rad – načela i metode. Karlovac: Veleučilište u Karlovcu  Zelenika, R. (2000). Metodologija i tehnologija izrade znanstvenog i stručnog djela, četvrto izdanje. Rijeka: Ekonomski fakultet Sveučilišta u Rijeci | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| Baban, Lj*. et al*. (2000). Primjena metodologije stručnog i znanstvenog istraživanja. Osijek: Ekonomski fakultet  Babbie, E., Roberts, L. W. (2018). Fundamentals of Social Research. Nelson Education  Ivanović, Z. (1996). Metodologija izrade znanstvenog i stručnog djela. Opatija: Hotelijerski fakultet  Saunders, M., Lewis, Ph., Thornhill, A. (2000). Research Methods for Business Students, Harlow (etc.): Financial Times, Prentice Hall.  Tkalac Verčić, A., Sinčić Čorić, D., Pološki Vokić, N. (2010). Priručnik za metodologiju istraživačkog rada: Kako osmisliti, provesti i opisati znanstveno i stručno istraživanje. Zagreb: M.E.P. d.o.o.  Verčić, A. T., Čorić, D. S., Vokić, N. P. (2013). Priručnik za metodologiju istraživačkog rada u društvenim istraživanjima. Zagreb: MEP d. o. o.  Oraić Tolić, D. (2011) Akademsko pismo : Strategije i tehnike klasične retorike za suvremene studentice i studente. Zagreb: Naklada Ljevak | | | | | | |

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| **Naziv kolegija** | **AUTOMATIZACIJA UREDSKOG POSLOVANJA** | | | | | |
| **Nositelj kolegija** | **doc. dr. sc. socio. Bernard Vukelić, prof. struč. stud.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **izborni** | | | | | |
| **Godina** | **2.** | **Semestar** | **3.** | | **ECTS bodovi** | **6** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **1+1+2+0** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Razviti kod studenta znanja i vještine iz područja uredskog poslovanja u suvremenim uvjetima poslovanja. Kroz kolegij trebaju steći vještine potrebne za upotrebu informacijsko-komunikacijske tehnologije koja omogućuje automatizaciju u sustavu uredskog poslovanja. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| - nema uvjeta | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 1:** Odabrati odgovarajuća aplikativna rješenja za potporu poslovnim funkcijama. **Ishod 2:** Procijeniti mjesto i ulogu IKT-a u kontekstu organizacije, menadžmenta i poslovnih procesa. **Ishod 11:** Prezentirati razvojna i programska rješenja u okviru poslovne organizacije. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| Završetkom ovog kolegija studenti će moći:   1. Analizirati funkcije i načela ureda i uredskog poslovanja. 2. Razlikovati karakteristike i funkcije uredskog informacijskog sustava. 3. Utvrditi utjecaj korištenja informacijsko-komunikacijske tehnologije na uredske poslove. 4. Primijeniti softverske alate za pomoć u automatizaciji uredskih procesa. 5. Izraditi prijedlog rješenja programske podrške (uz specifikaciju potrebnog hardvera) uredskom informacijskom sustavu. | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
| **Predati na ocjenu seminar odnosno riješeni Zadatak i prezentirati isti.**  **Napomena: označeno žutim.** | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | ISHODI | Pisani test | Seminar | Zadatak | Prag | Max | | ISHOD 1 | 10% |  |  | 5% | 10% | | ISHOD 2 | 10% |  |  | 5% | 10% | | ISHOD 3 | 20% |  |  | 10% | 20% | | ISHOD 4 |  |  | 40% | 20% | 40% | | ISHOD 5 |  | 20% |  | 10% | 20% | | Udio u ECTS | **2,4** | **1,2** | **2,4** | **-** | **-** | | Ukupno | **40%** | **20%** | **40%** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Teorijski dio/ Pisani ispit | Praktični dio/ Zadatak/Seminar | Max | | ISHOD 1 | 10% |  | 10% | | ISHOD 2 | 10% |  | 10% | | ISHOD 3 | 20% |  | 20% | | ISHOD 4 |  | 40% | 10% | | ISHOD 5 |  | 20% | 40% | | Udio u ECTS | **2,4** | **3,6** | **-** | | Ukupno | **40%** | **60%** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Vojković G.: Uredsko poslovanje, spisovodstvo i upravljanje pismohranom, NN, 2018. | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| The Office: Procedures and Technology (Business Procedures) 7th Edition by Mary Ellen Oliverio (Author), William R. Pasewark (Author), Bonnie R. White (Author); Technology in the Law Office By Thomas F.Goldman Thomas Edison State College, 2018. | | | | | | |

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| **Naziv kolegija** | **INFORMACIJSKI SUSTAV ZA POTPORU ODLUČIVANJU** | | | | | |
| **Nositelj kolegija** | **dr. sc. socio. Sabrina Šuman, prof. struč. stud.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **izborni** | | | | | |
| **Godina** | **2.** | **Semestar** | **1.** | | **ECTS bodovi** | **6** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **1+2+1+0** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Usvojiti osnovnu terminologiju i primijeniti metode upravljanja poslovnim učinkom kroz rad u odabranim softverskim alatima. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| Nema uvjeta. | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| **Ishod 1:** Odabrati odgovarajuća aplikativna rješenja za potporu poslovnim funkcijama. **Ishod 2:** Procijeniti mjesto i ulogu IKT-a u kontekstu organizacije, menadžmenta i poslovnih procesa.  **Ishod 8:** Primijeniti odgovarajuće metode i tehnike za kreiranje i upravljanje bazama podataka. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| Završetkom ovog kolegija studenti će moći:   1. Argumentirati važnost upravljanja poslovnim učinkom uz navođenje primjera ključnih pokazatelja performansi. 2. Analizirati karakteristike big data ere sa naglaskom na kontekst upravljanja poslovnim učinkom. 3. Procijeniti primjenu različitih metoda i tehnika analize podataka za odabrane izvorišne podatke 4. Kreirati modele rudarenja podataka koristeći algoritme strojnog učenja uz interpretaciju rezultata 5. Kreirati modele za obradu teksta uz interpretaciju rezultata 6. Kreirati više-dimenzionalne interaktivne poslovne izvještaje za odabrane izvorišne podatke | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Obveze studenata** | | | | | | |
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| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju. Ocjenjivanje se provodi kontinuirano tijekom nastave i/ili na ispitnom roku, u skladu s odredbama Pravilnika o ocjenjivanju.  **Kontinuirana provjera:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | ISHODI | Pisani test | Projekt 1 | Projekt 2 | Projekt 3 | Prag | Max | | ISHOD 1 | 10 % |  |  |  | **5%** | **10 %** | | ISHOD 2 | 10 % |  |  |  | **5%** | **10 %** | | ISHOD 3 | 10 % |  |  |  | **5%** | **10 %** | | ISHOD 4 |  | **25%** |  |  | **12,5%** | **25 %** | | ISHOD 5 |  |  | 20% |  | **10%** | **20 %** | | ISHOD 6 |  |  |  | 25% | **12,5%** | **25%** | | Udio u ECTS | **1,8** | **1,5** | **1,2** | **1,5** | **-** | **-** | | Ukupno | **30 %** | **25 %** | **20%** | **25%** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ispitni rok:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | ISHODI | Teorija | Praktični zadatci | Prag | Max | | ISHOD 1 | 10 % |  | **5%** | **10 %** | | ISHOD 2 | 10 % |  | **5%** | **10 %** | | ISHOD 3 | 10 % |  | **5%** | **10 %** | | ISHOD 4 |  | 25% | **12,5%** | **25 %** | | ISHOD 5 |  | 20% | **10%** | **20 %** | | ISHOD 6 |  | 25% | **12,5%** | **25%** | | Udio u ECTS | **1,8** | **4,2** | **-** | **-** | | Ukupno | **30 %** | **70 %** | **50 %** | **100 %** |   Student je položio kolegij ako je za svaki ishod učenja ostvario postotak bodova koji je veći ili jednak definiranom pragu.  **Ocjenjivanje:**  Student je položio ispit ako je za svaki ishod učenja na kolegiju ostvario najmanje 50 % predviđenih bodova za taj ishod.  Ako je student položio sve ishode učenja kolegija, zbrajaju se ostvareni bodovi (postoci) svih položenih ishoda učenja, a konačna ocjena se formira temeljem sljedeće tablice:   |  |  |  | | --- | --- | --- | | Raspon bodova (postotaka) | Brojčana ocjena | ECTS ocjena | | 90,00 – 100,00 | Izvrstan (5) | A | | 75,00 – 89,99 | Vrlo dobar (4) | B | | 60,00 – 74,99 | Dobar (3) | C | | 50,00 – 59,99 | Dovoljan (2) | D | | 0,00 – 49,99 | Nedovoljan (1) | F | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| 1. Šuman, S.,Sustavi poslovne inteligencije, Veleučilište u Rijeci,2017. Skripta- Dostupno na Merlinu u sklopu kolegija. 2. Šuman, PREGLED METODA OBRADE PRIRODNIH JEZIKA I STROJNOG PREVOĐENJA, Zbornik Veleučilišta u Rijeci, 2021., Vol. 9 No. 1, 2021., dostupno na <https://hrcak.srce.hr/257657> 3. <https://academy.rapidminer.com/learning-paths/get-started-with-rapidminer-and-machine-learning> 4. https://help.tableau.com/current/guides/get-started-tutorial/en-us/get-started-tutorial-home.htm | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| 1. Turban,E.,Sharda,R.,Delen, D.,Decision support and business intelligence systems, Pearson (international edition),9-th edition,2011. | | | | | | |

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| **Naziv kolegija** | **SPECIJALISTIČKA PRAKSA** | | | | | |
| **Nositelj kolegija** | **dr. sc. socio. Sabrina Šuman prof. struč. stud.** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **obvezan** | | | | | |
| **Godina** | **Druga** | **Semestar** | **IV.** | | **ECTS bodovi** | **15** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **OP + OV + OS + 350 Pr** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Upotpuniti i primijeniti teoretsko znanje s praktičnim te steći iskustvo rada u informatičkoj struci  u realnom radnom okruženju, što omogućuje uspješnije uključivanje u profesionalni rad. | | | | | | |
| 1. **Uvjeti za upis kolegija** | | | | | | |
| Nema uvjeta. | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| Kolegij može pridonijeti svim ishodima učenja na razini programa (ovisno o poslodavcu) | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| |  | | --- | | Ishod 1: Primijeniti ranije stečena specijalizirana stručna znanja u realnom radnom okruženju.  Ishod 2: Samostalno analizirati i predlagati unapređenja tijekom rješavanja radnih zadataka u realnom okruženju.  Ishod 3: Prepoznati mogućnosti i predlagati unapređenja pristupa komuniciranju poslovnih sadržaja, motiviranju suradnika te funkcioniranju timova u svrhu postizanja ciljeva.  Ishod 4: Steći radne navike prema zahtjevima realnog radnog okruženja.  Ishod 5: Samostalno i odgovorno izraditi stručno izvješće o obavljenoj praksi. | | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** | Kolegij nije u sustavu kontinuiranog praćenja. | | | | | |
| 1. **Obveze studenata** | | | | | | |
| Tijekom obavljanja specijalističke prakse, student izrađuje izvješće s prikazom obavljene prakse i izvršenog  zadatka (članak 13. Pravilnika o stručnoj praksi). | | | | | | |
| 1. **Ocjenjivanje, vrednovanje i praćenje rada studenta kontinuirano tijekom nastave i na ispitnom roku** | | | | | | |
| Ocjenjivanje se temelji na vrednovanju usvojenosti ishoda učenja na kolegiju.  Student je položio kolegij ako je odradio *Pravilnikom o stručnoj praksi* (članak 14.) propisan broj predviđenih sati što dokazuje:  • Potvrdnicom poslodavca o obavljenoj specijalističkoj praksi, • Izvješćem studenta o obavljenoj stručnoj praksi (pisano), • Obranom dostavljenog Izvješća (usmeno). Ocjena je definirana Pravilnikom o ocjenjivanju studenata preddiplomskih stručnih i specijalističkih  diplomskih stručnih studija Veleučilišta u Rijeci (članak 6.). | | | | | | |
| **Provjera usvojenosti ishoda učenja na kolegiju:**   |  |  |  | | --- | --- | --- | | ISHODI | Izvješće  studenta | Potvrdnica  poslodavca | | ISHOD 1 | zadovoljio | zadovoljio | | ISHOD 2 | zadovoljio | zadovoljio | | ISHOD 3 | zadovoljio | zadovoljio | | ISHOD 4 | zadovoljio | zadovoljio | | ISHOD 5 | zadovoljio | zadovoljio | | Udio u ECTS | **13** | **2** | | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Pravilnik o stručnoj praksi. | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
| Upute za obavljanje specijalističke prakse voditeljice specijalističke prakse na specijalističkom diplomskom stručnom studiju Informacijske tehnologije u poslovnim sustavima. | | | | | | |

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| **Naziv kolegija** | **SPECIJALISTIČKI ZAVRŠNI RAD** | | | | | |
| **Nositelj kolegija** | **Mentor (nositelj odabranog kolegija)** | | | | | |
| **Studijski program** | **Stručni diplomski studij Informacijske tehnologije u poslovnim sustavima** | | | | | |
| **Status kolegija** | **obavezan** | | | | | |
| **Godina** | **2.** | **Semestar** | **IV.** | | **ECTS bodovi** | **15** |
| **Izvedba nastave**  **(P + V + S+ Pr)** | **Konzultacije u dogovoru s mentorom sukladno Pravilniku o završnom radu.** | | | | | |
| 1. **Ciljevi kolegija** | | | | | | |
| Osposobiti studenta da razvije dublje znanje, razumijevanje, sposobnosti i stavove u kontekstu studijskog programa odnosno produbljivanje znanja o pripadnom kolegiju / temi rada, uključujući dublji uvid u trenutni istraživački rad. Razviti sposobnosti kritičkog promišljanja te samostalnog prepoznavanja, formuliranja i rješavanja stručnog/znanstvenog problema te razviti sposobnost rasprave o prezentiranim zaključcima. | | | | | | |
| 1. **Uvjeti za obranu završnog rada** | | | | | | |
| Položeni svi ispiti specijalističkog studija, odnosno stečeno 120 ECTS bodova. | | | | | | |
| 1. **Ishodi učenja na razini programa kojima kolegij pridonosi** | | | | | | |
| Ishodi učenja vezani za pripadni kolegij. | | | | | | |
| 1. **Očekivani ishodi učenja na razini kolegija** | | | | | | |
| 1. Definirati i samostalno riješiti stručni/znanstveni problem 2. Primijeniti metodologiju pisanja stručnog i/ili znanstvenog rada 3. Primijeniti usvojena znanja i kompetencije stečene kroz specijalistički studij 4. Primijeniti usvojena znanja i specifične kompetencije iz pripadnog kolegija 5. Poštovati etičke principe i pravila citiranja literature 6. Prikazati i interpretirati rezultate istraživanja | | | | | | |
|  | | | | | | |
| 1. **Vrste izvođenja nastave** | predavanja  auditorne vježbe  seminari i radionice  obrazovanje na daljinu  terenska nastava | | | samostalni zadaci  multimedija i mreža  laboratorij  mentorski rad  ostalo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| 1. **Komentari** |  | | | | | |
| 1. **Uvjet za pristupanje cjelovitom ispitu na ispitnom roku** | | | | | | |
| **-** | | | | | | |
| 1. **Ocjenjivanje usvojenosti ishoda učenja kolegija** | | | | | | |
| Ocjenjivanje usvojenosti ishoda učenja kolegija Završni rad provodi se sukladno Pravilniku o završnom radu odnosno Pravilniku o ocjenjivanju.   |  |  |  |  | | --- | --- | --- | --- | | ISHODI | Pisani dio spec. završnog rada | Javna obrana | Max | | ISHOD 1 | **20** |  | **20** | | ISHOD 2 | **5** |  | **5** | | ISHOD 3 | **15** |  | **15** | | ISHOD 4 | **20** |  | **20** | | ISHOD 5 | **5** |  | **5** | | ISHOD 6 |  | **35** | **35** | | Udio u ECTS | **10** | **5** | **15** | | Ukupno | **65** | **35** | **100** |   Elementi praćenja i opis pripadajuće ocjene navedeni su u nastavku:  **Pisani dio završnog rada**  Odličan (5) – rad je logički dobro strukturiran, činjenično točan, podcjeline su povezane, korištena je relevantna i recentna literatura.  Vrlo dobar (4) – rad je dobro strukturiran, iznesene su činjenice, literatura je korektno obrađena no pristupu nedostaje kreativnosti.  Dobar (3) – U radu su prikazani samo neki od relevantnih aspekata teme, literatura je obrađena korektno, ali samo djelomično, koristi se temeljni stručni vokabular.  Dovoljan (2) – u radu postoje sadržajni nedostaci, osnovni pojmovi su površno objašnjeni i nema dubljeg poznavanja teme.  **Javna obrana završnog rada**  Odličan (5) – izlaganje je jasno i visoko informativno, odgovori na pitanja su točni i kreativni.  Vrlo dobar (4) – izlaganje je jasno i sadržajno, odgovori na pitanja su samo korektni, ne ukazuju na dublje promišljanje o temi.  Dobar (3) – Izlaganje je jasno i informativno, ali bez jasnog povezivanja teorije s praksom. Sposobnost odgovaranja samo na jednostavna pitanja.  Dovoljan (2) – Izlaganje je prepričavanje pročitanog teksta, odgovori na pitanja su oskudni. | | | | | | |
| 1. **Obvezna literatura** | | | | | | |
| Pravilnik o završnom radu | | | | | | |
| 1. **Dopunska literatura** | | | | | | |
|  | | | | | | |

1. [↑](#footnote-ref-1)
2. VAŽNO: Uz svaki način praćenja rada studenata treba unijeti odgovarajući udio u ECTS bodovima pojedinih aktivnosti tako da ukupni broj ECTS bodova odgovara bodovnoj vrijednosti predmeta. Prazna polja možete upotrijebiti za dodatne aktivnosti. [↑](#footnote-ref-2)
3. VAŽNO: Uz svaki način praćenja rada studenata treba unijeti odgovarajući udio u ECTS bodovima pojedinih aktivnosti tako da ukupni broj ECTS bodova odgovara bodovnoj vrijednosti predmeta. Prazna polja možete upotrijebiti za dodatne aktivnosti. [↑](#footnote-ref-3)
4. VAŽNO: Uz svaki način praćenja rada studenata treba unijeti odgovarajući udio u ECTS bodovima pojedinih aktivnosti tako da ukupni broj ECTS bodova odgovara bodovnoj vrijednosti predmeta. Prazna polja možete upotrijebiti za dodatne aktivnosti. [↑](#footnote-ref-4)