Semester 1		
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:mr.sc. Sergej Lugović MBA S:mag.oec Kristina Perec S: Olivera Međugorac S: Dinko Horvat struč.spec.ing.techn.inf.	Digital Economy	ECTS:5.0
P:mr.sc. Sanja Bračun dipl.oec. P:dr.sc. Mladen Mauher prof.v.šk. A:mr.sc. Sanja Bračun dipl.oec. S:mr.sc. Sanja Bračun dipl.oec.	Asset Management	ECTS:5.0
P: Vesna Alić-Kostešić dipl.ing.stroj. A: Vesna Alić-Kostešić dipl.ing.stroj.	IT Systems Management	ECTS:5.0
P:dr.sc. Igor Urbiha prof.vis.šk. A:dr.sc. Igor Urbiha prof.vis.šk.	Mathematics	ECTS:5.0
P:izv. prof. dr. sc. Petar Jandrić prof. v. šk. A:izv. prof. dr. sc. Petar Jandrić prof. v. šk.	Motivation and Team Work	ECTS:5.0
P: Ljiljana Matuško Antonić S: Ljiljana Matuško Antonić	Business Ethics and Law	ECTS:5.0
P: Maja Pauković L: Maja Pauković	Applied Statistics	ECTS:5.0
P:dr.sc. Mladen Mauher prof.v.šk. L:Dr. sc. Aleksandar Stojanović pred.	Software Engineering and Information Systems	ECTS:5.0
P: Vesna Alić-Kostešić dipl.ing.stroj. A: Vesna Alić-Kostešić dipl.ing.stroj. S: Vida Senci A: Hrvoje Rakić , dipl.ing.stroj., pred.	Project Management	ECTS:5.0
P:dr.sc. Ljubivoj Cvitaš dipl.ing. P:mr. Alenka Poljičak dipl.oec., viši predavač A:dr.sc. Ljubivoj Cvitaš dipl.ing. S:dr.sc. Ljubivoj Cvitaš dipl.ing. A: Sanja Đonlić dipl. ing. stroj. (mag. ing. mech.) S: Sanja Đonlić dipl. ing. stroj. (mag. ing. mech.) A:mr. Alenka Poljičak dipl.oec., viši predavač S:mr. Alenka Poljičak dipl.oec., viši predavač	Quality Management	ECTS:5.0
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P: Ognjen Staničić dipl. ing. L: Ognjen Staničić dipl. ing.	Bridge	ECTS:5.0

Semester 2		
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:izv. prof. dr. sc. Petar Jandrić prof. v. šk. A:izv. prof. dr. sc. Petar Jandrić prof. v. šk. S:izv. prof. dr. sc. Petar Jandrić prof. v. šk.	Digital culture	ECTS:6.0
P: Vesna Uglješić dipl. dizajner L: Vesna Uglješić dipl. dizajner		ECTS:6.0
P:Prof. dr. sc. Jana Žiljak Gršić , mag. design P: Aleksandra Bernašek Petrinec A: Ana Hoić A: Aleksandra Bernašek Petrinec	Documents and Securities Design	ECTS:6.0
P:Prof.dr.sc. Slavica Ćosović Bajić P: Sanja Kraljević , dipl.ing., v. pred. P: Milan Bajić A:Prof.dr.sc. Slavica Ćosović Bajić A: Milan Bajić L: Milan Bajić A: Sanja Kraljević , dipl.ing., v. pred.	Multimedia Systems	ECTS:6.0
P:izv. prof. dr. sc. Petar Jandrić prof. v. šk. A:izv. prof. dr. sc. Petar Jandrić prof. v. šk. S:izv. prof. dr. sc. Petar Jandrić prof. v. šk.	Basics of Digital Education	ECTS:6.0
P: Vesna Uglješić dipl. dizajner P:dr.sc. Maja Turčić pred. L: Vesna Uglješić dipl. dizajner L: Darija Ćutić , mag. ing. graph. techn.	Applied typography design	ECTS:6.0
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P: dr. sc. Darko Galinec , znan. sur., prof. v. š. A: Edmond Krusha , struč.spec.ing.techn.inf., predavač L: Edmond Krusha , struč.spec.ing.techn.inf., predavač	Business Information System architekture and integration	ECTS:6.0
P:mr.sc. Sergej Lugović MBA S: Dinko Horvat struč.spec.ing.techn.inf.	E-business, economics, organization and management	ECTS:6.0
P:mr.sc. Marinko Žagar viši predavač A:mr.sc. Marinko Žagar viši predavač S:mr.sc. Marinko Žagar viši predavač A: Domagoj Tuličić S: Domagoj Tuličić	Information security	ECTS:6.0
P:dr.sc. Mladen Mauher prof.v.šk. A: Edmond Krusha , struč.spec.ing.techn.inf., predavač L: Edmond Krusha , struč.spec.ing.techn.inf., predavač	Business Process Modeling	ECTS:6.0
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:mr.sc. Marinko Žagar viši predavač A:mr.sc. Marinko Žagar viši predavač S:mr.sc. Marinko Žagar viši predavač A: Domagoj Tuličić S: Domagoj Tuličić	Information security	ECTS:6.0
P:dr.sc. Mladen Mauher prof.v.šk.	Office Business and Collaborative technology	ECTS:6.0

P:dr.sc. Mladen Mauher prof.v.šk.	Design and manage a portfolio of capital projects	ECTS:6.0
P:dr.sc. Mladen Mauher prof.v.šk.	Interoperability standards in systems management	ECTS:6.0
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:dr.sc. Miroslav Mađarić dipl.inž.el. P:Prof. dr. sc. Miroslav Slamić profesor visoke škole L: Krešimir Majdenić	Health Information Subsystems	ECTS:6.0
P:dr.sc. Miroslav Mađarić dipl.inž.el. P:Prof. dr. sc. Miroslav Slamić profesor visoke škole L: Denis Jager L: Biserka Klarić	Health Information Systems	ECTS:6.0
P:mr.sc. Marinko Žagar viši predavač P:Prof. dr. sc. Miroslav Slamić profesor visoke škole	Security, interfaces and standardization in health IS	ECTS:6.0
P:Prof. dr. sc. Miroslav Slamić profesor visoke škole S:Prof. dr. sc. Miroslav Slamić profesor visoke škole S: Biserka Klarić	The health system and processes	ECTS:6.0
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P: Vjeran Bušelić viši predavač A: Vjeran Bušelić viši predavač	Management Soft Skills	ECTS:6.0
P:v.pred. Aleksander Radovan , dipl. ing. L:v.pred. Aleksander Radovan , dipl. ing.	Java Programming	ECTS:6.0
P: Marijan Matić dipl.ing. A: Marijan Matić dipl.ing.	IT Systems Development and Implementation	ECTS:6.0

Semester 3		
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:Prof.dr.sc. Slavica Ćosović Bajić P: Sanja Kraljević , dipl.ing., v. pred. P: Milan Bajić A:Prof.dr.sc. Slavica Ćosović Bajić A: Milan Bajić L: Milan Bajić A: Sanja Kraljević , dipl.ing., v. pred. L: Tamara Ivelja mag. ing. geod. et. geoinf.	Digital Image Processing	ECTS:6.0
P:izv. prof. dr. sc. Petar Jandrić prof. v. šk. A:izv. prof. dr. sc. Petar Jandrić prof. v. šk. S:izv. prof. dr. sc. Petar Jandrić prof. v. šk.	Instructional Design	ECTS:6.0
P: Mario Janković mag. ing. graph. techn. P:dr.sc. Maja Turčić pred. L:dr.sc. Maja Turčić pred. S:dr.sc. Maja Turčić pred. L: Mario Janković mag. ing. graph. techn. S: Mario Janković mag. ing. graph. techn.	Advanced Web Design	ECTS:6.0
P: Ivan Rajković	Multimedia Processing	ECTS:6.0
P:Prof. dr. sc. Jana Žiljak Gršić , mag. design P: Ana Hoić A: Ana Hoić S: Ana Hoić	Innovation Engineering	ECTS:6.0
P:izv. prof. dr. sc. Petar Jandrić prof. v. šk. A:izv. prof. dr. sc. Petar Jandrić prof. v. šk. S:izv. prof. dr. sc. Petar Jandrić prof. v. šk.	Strategy and policy of digital education	ECTS:6.0
P:mr.sc. Sergej Lugović MBA L:mr.sc. Sergej Lugović MBA L:mag.oec Kristina Perec L: Dinko Horvat struč.spec.ing.techn.inf.	Strategic technological entrepreneurship	ECTS:6.0
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:mr.sc. Marinko Žagar viši predavač L:mr.sc. Marinko Žagar viši predavač L:prof. Marta Alić	ERP and CRM business information systems	ECTS:6.0
P: Vjeran Bušelić viši predavač A: Vjeran Bušelić viši predavač S: Vjeran Bušelić viši predavač	E-marketing	ECTS:6.0
P:Prof. dr. sc. Goran Klepac Prof. v.š. L:Prof. dr. sc. Goran Klepac Prof. v.š.	Internet databases (NoSQL database in e-business)	ECTS:6.0
P: Željko Kovačević , struč.spec.ing.techn.inf. A: Željko Kovačević , struč.spec.ing.techn.inf. A: Martina Petrovečki struč.spec.ing.techn.inf.	Database modeling and administration	ECTS:6.0
P:dr.sc. Alen Šimec v. predavač L:dr.sc. Alen Šimec v. predavač L: Davor Lozić pred.	Advanced Web Services Programming (open-source,PHP)	ECTS:6.0
P:Prof. dr. sc. Goran Klepac Prof. v.š.	Business intelligence and big data	ECTS:6.0

A:Prof. dr. sc. Goran Klepac Prof. v.š. L:Prof. dr. sc. Goran Klepac Prof. v.š.	analytics	
P:mr.sc. Marinko Žagar viši predavač A:mr.sc. Marinko Žagar viši predavač L:mr.sc. Marinko Žagar viši predavač A: Edmond Krusha , struč.spec.ing.techn.inf., predavač L: Edmond Krusha , struč.spec.ing.techn.inf., predavač	Engineering and design of information systems	ECTS:6.0
P:Prof. dr. sc. Jana Žiljak Gršić , mag. design P: Ana Hoić A: Ana Hoić S: Ana Hoić	Innovation Engineering	ECTS:6.0
P:mr.sc. Sergej Lugović MBA L:mr.sc. Sergej Lugović MBA L:mag.oec Kristina Perec L: Dinko Horvat struč.spec.ing.techn.inf.	Strategic technological entrepreneurship	ECTS:6.0
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:Prof. dr. sc. Miroslav Slamić profesor visoke škole	Database and knowledge base in health care	ECTS:6.0
P:mr.sc. Marinko Žagar viši predavač L:mr.sc. Marinko Žagar viši predavač L:prof. Marta Alić	ERP and CRM business information systems	ECTS:6.0
P:Prof. dr. sc. Miroslav Slamić profesor visoke škole L: Biserka Klarić	Computerization of medical records and records	ECTS:6.0
P:Prof. dr. sc. Miroslav Slamić profesor visoke škole A:Prof. dr. sc. Miroslav Slamić profesor visoke škole A:dr.sc. Miroslav Mađarić dipl.inž.el. S:dr.sc. Miroslav Mađarić dipl.inž.el.	New technologies and trends in the e-Health	ECTS:6.0
P:Prof. dr. sc. Jana Žiljak Gršić , mag. design P: Ana Hoić A: Ana Hoić S: Ana Hoić	Innovation Engineering	ECTS:6.0
P:mr.sc. Sergej Lugović MBA L:mr.sc. Sergej Lugović MBA L:mag.oec Kristina Perec L: Dinko Horvat struč.spec.ing.techn.inf.	Strategic technological entrepreneurship	ECTS:6.0
P:Prof. dr. sc. Miroslav Slamić profesor visoke škole P:dr.sc. Miroslav Mađarić dipl.inž.el. L: Ivica Gospočić	Service Management (ITSM) in healthcare	ECTS:6.0
P:dr.sc. Miroslav Mađarić dipl.inž.el. P:Prof. dr. sc. Miroslav Slamić profesor visoke škole L:Prof. dr. sc. Miroslav Slamić profesor visoke škole L:dr.sc. Miroslav Mađarić dipl.inž.el.	Health Care Information Systems life cycle	ECTS:6.0

Semester 4		
Polytechnic graduate professional study programme specialization in Informatics Engineering elective courses		
P:Prof. dr. sc. Miroslav Slamić profesor visoke škole	Graduation Thesis	ECTS:24.0
P: Doc. dr. sc. Lidija Tepeš Golubić v. pred. S: Sara Slamić Tarade struč. spec. rel. publ.	Methodology of professional and scientific research	ECTS:6.0

Semester 5

Semester 6

Code WEB/ISVU	24001/185934	**ECTS**	6.0	**Academic year**	2018/2019
Name					
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Vesna Uglješić dipl. dizajner Laboratory exercises: Vesna Uglješić dipl. dizajner				
Course objectives	To gain basic knowledge of digital media design				
Learning outcomes:	1.design a digital application. Level:6 2.analyze demands, needs, goals and users. Level:6 3.combine various methods of design process. Level:6,7 4.user experience design. Level:6 5.user interface design. Level:6 6.information architecture. Level:6 7.critically evaluate advantages and disadvantages of specific designs. Level:7 8.make a 2D prototype of application using prototyping software. Level:6 9.test the usability of digital product. Level:6 10.integrate design principles for specific platform. Level:6,7 11.create animations and transitions. Level:6 12.present the designed product and explain its functionality. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Demonstration Simulations Discussion Questions and answers Seminar, students presentation and discussion Homework presentation				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Discussion, brainstorming Mind mapping				
Course content lectures	1.Basic concepts and overview of digital media design, 2h, Learning outcomes:1,7 2.Analyzing demands and defining the problem#8232;, 2h, Learning outcomes:1,2,4 3.User-centered design methodology, creating personas#8232;, 2h, Learning outcomes:1,2,3,4 4.User journey map, user flow#8232;, 2h, Learning outcomes:1,2,4 5.Methods of conceiving and elaborating design ideas#8232;, 2h, Learning outcomes:1,5 6.Workflow, team communication and time management#8232;, 2h, Learning outcomes:1,3,7 7.Information architecture, 2h, Learning outcomes:1,5,6 8.Wireframing, 2h, Learning outcomes:1,5 9.Interaction design#8232;, 2h, Learning outcomes:1,3,5,11 10.User experience design, 2h, Learning outcomes:1,3,4,9,11 11.User interface design#8232;, 2h, Learning outcomes:1,5,9,11 12.Prototyping, 2h, Learning outcomes:1,5,8,11 13.Digital product testing, 2h, Learning outcomes:1,3,4,5,9 14.Specific demands when designing for particular platform#8232;, 2h, Learning outcomes:1,4,5,10,11 15.Student projects presentation and discussion#8232;, 2h, Learning outcomes:1,7,12				
Course content laboratory	1.Choosing and defining project topic#8232;, 2h, Learning outcomes:1,2 2.Topic research and analysis, defining demands and goals#8232;, 2h, Learning outcomes:1,2,4 3.User analysis, defining target groups, creating personas, 2h, Learning outcomes:1,2,3,4 4.Conception of possible solutions, 2h, Learning outcomes:1,3,4,5 5.Mapping user journey, detailing user flow, 2h, Learning outcomes:1,2,4 6.Conceiving and elaborating design ideas using various methods, 2h, Learning outcomes:1,5 7.Information architecture creation, 2h, Learning outcomes:1,5,6 8.Wireframing, 2h, Learning outcomes:1,5 9.Presentation of the current stage of project, 2h, Learning outcomes:1,7,12 10.Project development with focus on UX#8232;, 2h, Learning outcomes:1,3,4,9,11 11.Project development with focus on UI#8232;, 2h, Learning outcomes:1,5,9,11 12.Prototyping, 2h, Learning outcomes:1,5,8,11 13.Digital product testing, 2h, Learning outcomes:1,3,4,5,9 14.Adjusting design for particular platforms#8232;, 2h, Learning outcomes:1,4,5,10,11 15.Student projects presentation and discussion#8232;, 2h, Learning outcomes:1,7,12				
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector Special equipment specialised software for design and prototyping				

Exam literature	D. Pasztor: Product Design, UX Studio, 2017. A. Kholmatova: Design Systems, Smashing Media AG, 2017. K. McElroy: Prototyping for Designers, OReilly Media, 2017. J. Schneider: Understanding Design Thinking, Lean, and Agile, OReilly Media, 2017. D. Hanington: Universal Methods of Design, Rockport Publishers, 2012.	
Students obligations	Regular attendance of lectures and lab exercises (70%); all project elements handed in	
Knowledge evaluation during semester	Submitting and presenting project elements	
Knowledge evaluation after semester	Presentation and defense of designer project; oral exam	
Student activities:	Aktivnost (Oral exam) (Project) (Research)	ECTS 2 2 2
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	Vesna Uglješić, 15.6.2018	

Code WEB/ISVU	23175/130946	**ECTS**	6.0	**Academic year**	2018/2019
Name	Advanced Web Design				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+15+15+0) 120
Teachers	Lectures:1. dr.sc. Maja Turčić pred. Lectures: Mario Janković mag. ing. graph. techn. Laboratory exercises: Mario Janković mag. ing. graph. techn. Laboratory exercises:dr.sc. Maja Turčić pred. Seminar exercises: Mario Janković mag. ing. graph. techn. Seminar exercises:dr.sc. Maja Turčić pred.				
Course objectives	Gaining knowledge in the area of advanced web technologies				
Learning outcomes:	1.differentiate different web technologies and their application . Level:6 2.integrate semantic HTML5 elements into the structure of a web page. Level:6,7 3.organise the separation of presentation part of the web page. Level:6,7 4.estimate the use of CSS3 language on the interactive web. Level:6,7 5.design a responsive web page. Level:6 6.integrate scalable and interactive vector graphics into a web page. Level:6,7 7.relate e-literature and web technologies . Level:6,7 8.organise content centered design. Level:6,7 9.present one's project/assignment . Level:6,7 10.categorize web technologies. Level:6 11.analyse the importance of user experience. Level:6				
Methods of carrying out lectures	Guest lecturer Case studies Discussion Questions and answers Seminar, students presentation and discussion				
Methods of carrying out laboratory exercises	Laboratory exercises, computer simulations Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Workshop				
Methods of carrying out seminars	Discussion, brainstorming Interactive problem solving Workshop				
Course content lectures	1.Development of web and web technologies, 2h, Learning outcomes:1,10 2.New HTML5 elements, 2h, Learning outcomes:1,2,10 3.The importance of semantic web, 2h, Learning outcomes:1,2 4.Separation of the presentational part of web via CSS3 technology , 2h, Learning outcomes:1,2,10 5.Web interactivity via CSS3 technology, 2h, Learning outcomes:1,3,4 6.Vector graphics on web via SVG language, 2h, Learning outcomes:1,6,10 7.Different ways of achieving animation and interactivity on web, 2h, Learning outcomes:1,3,6 8.The concept of emotional web design and the creation of personas, 2h, Learning outcomes:11 9.Content centered design, 2h, Learning outcomes:8 10.New e-book formats and web technologies (EPUB3 and DRM), 2h, Learning outcomes:1,7 11.Responsive web design, 2h, Learning outcomes:1,3,5 12.Examples and discussion of the importance of user experience, 2h, Learning outcomes:11 13.Presenting one, 2h, Learning outcomes:9 14.Presenting one, 2h, Learning outcomes:9 15.Presenting one, 2h, Learning outcomes:9				
Course content laboratory	1.Planning and execution of content centered design, 2h, Learning outcomes:8 2.Creating personas basing on the psychology and emotions of users, 2h, Learning outcomes:11 3.Developing a semantically correct web page using HTML5 elements, 2h, Learning outcomes:1,2 4.Research and integration of user experience in a web page, 2h, Learning outcomes:11 5.Developing the presentational part of a web page using CSS3 technology, 2h, Learning outcomes:1,3 6.Planning of interactive elements via CSS3 technology, 2h, Learning outcomes:1,4 7.Planning and designing a responsive web page, 2h, Learning outcomes:1,5 8.Designing of vector graphics for Web, 2h, Learning outcomes:1,6 9.Programming interactivity of vector graphics using SVG and JavaScript languages , 2h, Learning outcomes:1,6 10.Applying web technologies in developing e-books, 4h, Learning outcomes:1,7 11.No classes 12.No classes 13.No classes 14.No classes, Learning outcomes:11 15.No classes				
Course content seminars	1.Presenting and discussing projects, 8h, Learning outcomes:1,9,10 2.No lesson 3.No lesson				

	4.No lesson 5.No lesson 6.No lesson 7.No lesson 8.No lesson 9.No lesson 10.No lesson 11.No lesson 12.No lesson 13.No lesson 14.No lesson 15.No lesson
Required materials	General purpose computer laboratory Whiteboard with markers Overhead projector
Exam literature	Dive into HTML5, Mark Pilgrim; CSS3 for web designers, Dan Cederholm, ISBN 978-0-9844425-2-2 An SVG primer for today's browsers, David Daley, W3C EPUB3 best practices, Matt Garnish, ISBN 978-1-449-32914-3 Designing for emotion, Aaron Walter, A book apart, ISBN: 978-1-937557-00-3
Students obligations	Izlaganje teme istraivanja: 10 bodova Izlaganje izrag projekta: 20 bodova Izlaganje radionice: 20 bodova Uvjet: 25 bodova
Knowledge evaluation during semester	Izlaganje teme istraivanja: 10 bodova Izlaganje izrag projekta: 20 bodova Izlaganje radionice: 20 bodova Uvjet: 25 bodova
Knowledge evaluation after semester	Predaja seminarskog rada : 50 bodova Finalna ocjena se formira prema bodovima sakupljenim tijekom semestra (izlaganje teme, izlaganje projekta i radionica) i seminarskog rada: Ukupno bodova: 100 90-100 = 5 80-90 = 4 70-80 = 3 60-70 = 2 Do 60 bodova nedovoljno postignu
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Maja Turčić dipl.ing., 24.3.2015

Code WEB/ISVU	23185/130957	**ECTS**	6.0	**Academic year**	2018/2019
Name	Advanced Web Services Programming (open-source,PHP)				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:2. dr.sc. Alen Šimec v. predavač Laboratory exercises: Davor Lozić pred. Laboratory exercises:dr.sc. Alen Šimec v. predavač				
Course objectives	To qualify students to design functional Web services applications in the open source environment (Apache,MySQL,PhP).				
Learning outcomes:	1.ability to organise groups of data into functional sets. Level:6,7 2.ability to compose the XML data schemes and the XML configuration files. Level:6,7 3.ability to devise a model of using configuration files to develop Web services in the open source environment. Level:6,7 4.ability to develop a web service operations in the open source environment. Level:6,7 5.ability to control a web service configuration by using PHP tools. Level:6,7 6.ability to prepare a dynamic wsdl document. Level:6,7 7.ability to connect public Web services. Level:6,7				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 5h in 180h 1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 5h in 180h 1.5.OPĆI Identificirati, modelirati i rješavati inženjerske probleme.: 5h in 180h 1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 5h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 5h in 180h 2.3.OSOBNE Etički i moralni pristup radu.: 5h in 180h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 5h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 5h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 5h in 180h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 5h in 180h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 5h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 5h in 180h 2.12.OSOBNE Fleksibilnost i prilagodljivost u iznalaženju tehničkih rješenja uz neupitno poštivanje temeljnih etičkih načela, pravnih normi i pravila struke.: 5h in 180h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 5h in 180h 3.3.SPECINF Povezati relevantne specifične discipline kao što su informacijsko-računarsko inženjerstvo i tehnologije u poslovnom okruženju: 5h in 180h 3.4.SPECINF Upotrijebiti stečena znanja za samostalno usvajanje novih znanja: 5h in 180h 3.5.SPECINF Realizirati kritičko razmišljanje te logičko stvaranje mišljenja u poslovnim i inženjerskim procesima: 5h in 180h 5.1.E-poslovanje Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa u poslovnim okruženjima: 5h in 180h 5.2.E-poslovanje Primijeniti znanja, metode i alate za formalizaciju poslovnih informacijskih sustava: 10h in 180h 5.3.E-poslovanje Primijeniti formalne metode na analizu zahtjeva kod projektiranja poslovnih informacijskih sustava : 10h in 180h 5.4.E-poslovanje Upotrijebiti metode i alate u modeliranju procesa i podatka poslovnih informacijskih sustava: 10h in 180h 5.5.E-poslovanje Održavati komponente poslovnih informacijskih sustava: 10h in 180h 6.1.E-uprava Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i procesa u okruženjima javne uprave: 10h in 180h 6.2.E-uprava Razumijevati objedinjeno pružanje usluga dionicima u sustavu javne uprave: 10h in 180h 6.3.E-uprava Uspostaviti kolaborativne tehnologije uredskog poslovanja u podsustavima javne uprave: 10h in 180h 6.4.E-uprava Primijeniti formalne metode na analizu zahtjeva kod projektiranja komponenti informacijskih sustava i podsustava uprave: 10h in 180h 6.5.E-uprava Primijeniti standarde interoperabilnosti u sustavima uprave: 10h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Case studies Simulations Modelling Discussion Questions and answers Seminar, students presentation and discussion Homework presentation				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Essay writing Discussion, brainstorming Development of software solutions and solving problems				
Course content lectures	1.Introductory lecture and teach students about the responsibilities and teaching materials., 2h, Learning outcomes:1 2.Introduction to XML (EXtensible Markup Language) standards and syntax of XML documents, preparation of an XML document by the W3C rules., 2h, Learning outcomes:2				

	3.Architecture and publishing of XML documents, XML Schema, XML transformations, and for what they are used., 2h, Learning outcomes:2 4.Students will repeat / learn how it works XML Schema and what is it, and who are writing the rules of XML syntax Scheme., 2h, Learning outcomes:3 5.A client-server architecture, the characteristics of the client and the server, Apache Web server and how it works., 2h, Learning outcomes:3 6.Introduction to PHP scripting language, server side web applications., 2h, Learning outcomes:4 7.Theoretical basics of HTML (HyperText Markup Language) and CSS (Cascading Style Sheets), spelling and structure of an HTML document, 2h, Learning outcomes:4 8.The integration of HTML and CSS documents, page layout using CSS., 2h, Learning outcomes:5 9.PHP (Hypertext Preprocessor) syntax and its application, the PHP variables and labeling rules., 2h, Learning outcomes:5 10.Functionality and application of the loop in the programming environment, data fields, require and include commands., 2h, Learning outcomes:6 11.MySQL database, its application and what they do. Examples of how to create a relational database., 2h, Learning outcomes:6,7 12.Connecting PHP scripting language with the database, query the database and display the search results. Enter, change, and delete data from the database through the form., 2h, Learning outcomes:6,7 13.Presentation of students on independent projects., 2h, Learning outcomes:6,7 14.Repeat the key elements of the material, preparing for the exam., 2h 15.Examination of theory, XML, XML Schema, HTML, CSS, PHP (syntax, data types, data fields, loops), MySQL database, SQL queries to the database., 2h
Course content laboratory	1.Introductory exercises teach students about the duties and educational materials, and prepares the computer to work with the scripting language., 2h, Learning outcomes:1 2.Creating an XML (EXtensible Markup Language) file using a text editor Notepad + +, 2h, Learning outcomes:2 3.Creating XML files and XML Schema using a text editor Notepad + +, linking documents and validation., 2h, Learning outcomes:2 4.Creating a WSDL (Web Services Description Language) documents based on XML rules of writing., 2h, Learning outcomes:3 5.Installing Virtual Server on the computer, learning about their work environment. It takes practice to install Apache, MySQL database and FTP client., 2h, Learning outcomes:4 6.Creating forms using a text editor. Check dunkcionalnosti for HTTP POST and GET. Solving problems with the forms and print text on the screen. Work on the local computer with virtual services in the open source environment, 2h, Learning outcomes:4 7.Introducing the virtual environment Xampp applications, run applications required for operation of the virtual server, solving tasks., 2h, Learning outcomes:5 8.Repetition of knowledge and development of Internet sites on a virtual server using HTML markup text, forms, CSS and getting to know the scripting language PHP., 2h, Learning outcomes:6 9.Solving problems using PHP syntax, PHP variables and labeling rules in HTML., 2h, Learning outcomes:6 10.Solving problems in PHP, data types, strings, use operators and loops., 2h, Learning outcomes:6 11.Applying different loop in PHP programming environment, working with data fields, require and include commands., 2h, Learning outcomes:6 12.Using MySql database, creating databases, tables, fields in the table, define the fields, their values, the determination of the primary and secondary key.,, 2h, Learning outcomes:5,6 13.Connecting to MySQL database with the programming code in PHP, and the appointment of a query to the database, print the data from the database to display the user, making the frontend and backend interfaces., 2h, Learning outcomes:6,7 14.Repeat acquired knowledge, linking HTML, CSS, PHP, MySQL, XML into a single unit. Solving the task within the frontend and backend interfaces for data input via a form and upload the XML file and import the contents of an XML file into the database via the web interface., 2h 15.Examination of HTML, CSS, PHP (syntax, data types, data fields, loops), MySQL database, SQL queries to the database, XML., 2h
Required materials	Special purpose computer laboratory Overhead projector Tools XAMPP application
Exam literature	Šimec, Alen; Programiranje i optimizacija Internet stranica u HTML5 okruženju; Tehničko veleučilište u Zagrebu; 2015; Šimec, Alen; Uvod u HTML, XHTML i CSS; Tehničko veleučilište u Zagrebu; 2011; W3C preporuka; Extensible Markup Language (XML) (www.w3c.org); W3Schools Online Web Tutorials (www.w3schools.com); Fawcett J., Ayers D., Quin L. R. E., Beginning XML, 5th Edition, John Wiley Sons, 2012.; Simon St. Laurent, Michael Fitzgerald; XML Pocket Reference, 3rd Edition; OReilly Media; 2005. Doug Tidwell; XSLT, 2nd Edition; OReilly Media; 2008. Priscilla Walmsley; XQuery, Search Across a Variety of XML Data; OReilly Media; 2007. XML.com, OReilly, www.xml.com; Holzner S., Inside XML, Pearson Education, 2000; Ray E.T., Learning XML, 2nd edition, OReilly, 2003;
Students obligations	Attendance and active participation in lectures 15 points Attendance and active participation in training 15 points Essay and project 20 points
Knowledge evaluation during semester	1st Colloquium (theory and tasks) 25 points 2nd Colloquium (theory and tasks) 25 points
Knowledge evaluation after semester	Written exam 100 points

Student activities:	Aktivnost	ECTS
	(Classes attendance)	1
	(Written exam)	3
	(Project)	2
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	Alen Šimec, Ph.D.	

Code WEB/ISVU	23138/130904	**ECTS**	5.0	**Academic year**	2018/2019
Name	Applied Statistics				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 90
Teachers	Lectures: Maja Pauković Laboratory exercises: Maja Pauković				
Course objectives	To teach students how to think in a probabilistic way				
Learning outcomes:	1.Comparing the differences and limitations of the data, depending on the measuring scale and distribution as well as an understanding of the distribution parameters.. Level:6,7 2.Analyze the differences between dependent and independent samples; the ability to identify a linear connection between two continuous variables. Level:6 3.define bivariate data; define a scatterplot; define the difference between linear and nonlinear dependence; recognize the negative connection from the scatterplot; define the meaning of the Pearson correlation coefficient; identify the perfect linear dependence; recognize non-linear association of two variables. Level:6,7 4.examine the conditions for the implementation of linear regression and interpretation of regression coefficients; least square method. Level:6,7 5.analyze and understand the proportions and frequencies, and creating contingency tables. Level:6 6. formulate a multiple regression; interpretation of the coefficients in the multiple regression and the comparison of the two models in a multiple regression. Level:6,7 7.select the significant variables in the regression model; understanding coefficient R2 of the final model. Level:7 8.testing assumptions for analysis of variance. Level:7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Discussion Questions and answers auditory				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Interactive problem solving In Computer laboratory				
Course content lectures	1.Measuring scales and distribution of some random variables with parameters that define them. Basics transformation of variables, Z - score., 2h, Learning outcomes:1 2.Statistical inference on two samples; comparisons of mean and variance. Testing the difference between means two samples - dependent and independent samples., 4h, Learning outcomes:2 3.Measures of association between two variables - correlation. Introduction to bivariate data and association (correlation)-, 4h, Learning outcomes:3 4.Simple linear regression - Introduction and prerequisites for conducting the analysis; test of homogeneity of variance, independence of observations; influential observations. Evaluation of the regression model - standardized regression coefficient; standardized regression coefficient., 3h, Learning outcomes:4 colloquium, 1h, Learning outcomes:1,2,3,4 5.Analysis of ordinal and nominal variables. Analysis kontingencijke table - speed Association - Chi Square test as a replacement for Fisher, 4h, Learning outcomes:5 6.Multiple regression. Parameter estimation method of least squares. Significance of regression coefficient. Confidence interval regression analysis., 4h, Learning outcomes:6 7.Evaluation of the regression model. Analysis of residuals and influential observations. The selection of variables in the final model. Comparison of the two models. R2, the percentage of variability previously explained, the meaning of standardized and non-standardized regression coefficients; Venn diagram; standard, sequential and stepwise regression., 4h, Learning outcomes:7 8.Analysis of variance - ANOVA. Testing assumptions. Welch ANOVA / regular ANOVA. The one-factor analysis of variance and viefektorska. The ratio of variance F test., 4h, Learning outcomes:8 9.colloqium, 1h, Learning outcomes:5,6,7,8 10.No class 11.No class 12.No class 13.No class 14.No class 15.No class				
Course content laboratory	1.Practical examples and exercizes from the contents of the unit., 2h, Learning outcomes:1 2.Practical examples and exercizes from the contents of the unit., 4h, Learning outcomes:2 3.Practical examples and exercizes from the contents of the unit., 4h, Learning outcomes:3 4.Practical examples and exercizes from the contents of the unit., 4h, Learning outcomes:4 5.Practical examples and exercizes from the contents of the unit., 4h, Learning outcomes:5 6.Practical examples and exercizes from the contents of the unit., 4h, Learning outcomes:6 7.Practical examples and exercizes from the contents of the unit., 4h, Learning outcomes:7 8.Practical examples and exercizes from the contents of the unit., 4h, Learning outcomes:8 9.no exercise				

	10.no exercise 11.no exercise 12.no exercise 13.no exercise 14.no exercise 15.no exercise
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Overhead projector Special equipment R software
Exam literature	Obavezna 1. Walpole, Myres, Myers and Ye Probability and statistics for engineers and scientistc Prantice Hall Dopunska 2. Use R! Springer
Students obligations	maximum of 3 absences from exercises
Knowledge evaluation during semester	Mid-term, numerical exercises, max. 100 points evaluation: 91-100, excellent 5 81-90, very good 4 71-80, good 3 61-70, sufficient 2
Knowledge evaluation after semester	numerical exercises, max. 100 points evaluation: 91-100, excellent 5 81-90, very good 4 71-80, good 3 61-70, sufficient 2
Student activities:	Aktivnost ECTS (Written exam) 5
Remark	This course can not be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Andreja Radović, 15th of July 2014

Code WEB/ISVU	23146/130913	**ECTS**	6.0	**Academic year**	2018/2019
Name	Applied typography design				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:dr.sc. Maja Turčić pred. Lectures: Vesna Uglješić dipl. dizajner Laboratory exercises: Darija Ćutić , mag. ing. graph. techn. Laboratory exercises: Vesna Uglješić dipl. dizajner				
Course objectives	Gaining knowledge in the area of applied typography				
Learning outcomes:	1.identify type categories . Level:6 2.differentiate elements of glyphs. Level:6 3.manage rhythm with space. Level:6,7 4.integrate different font families. Level:6,7 5.design typographic hierarchy . Level:6 6.combine special characters in text formatting . Level:6,7 7.edit page for different purposes. Level:6,7 8.prepare type for a web page. Level:6,7 9.integrate the rules of legibility . Level:6,7				
Methods of carrying out lectures	Guest lecturer Case studies Discussion Questions and answers Seminar, students presentation and discussion Homework presentation				
Methods of carrying out laboratory exercises	Group problem solving Essay writing Discussion, brainstorming Workshop				
Course content lectures	1.History of typography, 2h, Learning outcomes:1 2.Anatomy and classification of type, 2h, Learning outcomes:1,2 3.Rhythm and proportion, 2h, Learning outcomes:3 4.Harmony and contrast, 2h, Learning outcomes:4 5.Hierarchy and text structuring, 2h, Learning outcomes:5 6.Special characters, 2h, Learning outcomes:6 7.Selecting and combining type, 2h, Learning outcomes:1,4 8.Page design, 2h, Learning outcomes:7 9.Typographic grids, 2h, Learning outcomes:7 10.Web typography, 2h, Learning outcomes:8 11.Readability and legibility , 2h, Learning outcomes:9 12.Font families, 2h, Learning outcomes:4,9 13.Different roles of type, 2h, Learning outcomes:1,4,6,7,8 14.Presentation and discussion, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 15.No classes, 2h				
Course content laboratory	1.Shaping typography according to content, 2h, Learning outcomes:1,2 2.Defining and designing rhythm with horizontal and vertical space, 4h, Learning outcomes:3 3.Research and application of harmony via font families, 2h, Learning outcomes:4 4.Designing structural elements, 2h, Learning outcomes:5 5.Use of hierarchy in typography, 2h, Learning outcomes:5 6.Use of special characters in design, 2h, Learning outcomes:6 7.Choosing and combining type for a specific task, 2h, Learning outcomes:4,9 8.Choosing of size, defining margin and text block, 2h, Learning outcomes:7 9.Use of web typography, 2h, Learning outcomes:8 10.Planning and constructing the grid, 2h, Learning outcomes:3,7,9 11.Designing missing characters, 2h, Learning outcomes:2,6,9 12.Research of text justification , 2h, Learning outcomes:5,6,7,9 13.Designing lists and tables, 2h, Learning outcomes:5,9 14.Presentation and discussion , 2h, Learning outcomes:1,2,9 15.Presentation and discussion , 2h, Learning outcomes:1,2,9				
Required materials	General purpose computer laboratory Whiteboard with markers Overhead projector				
Exam literature	The Elements of Typographic Style, Robert Bringhurst, Hartley Marks, Vancouver, 2004, ISBN: 0-88179-205-5 Thinking with Type, Ellen Lupton, Princeton Architectural Press, New York, 2004, ISBN: 1-56898-448-0 The Complete Manual of Typography, James Felici, Peachpit, Berkleley, 2012, ISBN: 978-0-321-77326-5				
Students obligations	Izlaganje teme istraivanja: 10 bodova Izlaganje izrag projekta: 20 bodova Izlaganje radionice: 20 bodova				

	Uvjet: 25 bodova
Knowledge evaluation during semester	Izlaganje teme istraivanja: 10 bodova Izlaganje izrag projekta: 20 bodova Izlaganje radionice: 20 bodova Uvjet: 25 bodova
Knowledge evaluation after semester	Predaja seminarskog rada : 50 bodova Finalna ocjena se formira prema bodovima sakupljenim tijekom semestra (izlaganje teme, izlaganje projekta i radionica) i seminarskog rada: Ukupno bodova: 100 90-100 = 5 80-90 = 4 70-80 = 3 60-70 = 2 Do 60 bodova nedovoljno postignu
Student activities:	Aktivnost — ECTS (Research) — 2 (Project) — 2 (Seminar Work) — 2
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Maja Turčić dipl.ing., 24.3.2015

Code WEB/ISVU	23136/130902	**ECTS**	5.0	**Academic year**	2018/2019
Name	Asset Management				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 90
Teachers	Lectures:1. dr.sc. Mladen Mauher prof.v.šk. Lectures:mr.sc. Sanja Bračun dipl.oec. Auditory exercises:mr.sc. Sanja Bračun dipl.oec. Seminar exercises:mr.sc. Sanja Bračun dipl.oec.				
Course objectives	To empower a student to understand that Asset management is not a separate process, but an integrated part of every business system. As Asset management team members they will be responsible to solve potential challenges and in position to give constant improvements proposals. Through the lessons the student will be familiar with the process of procurement, use and maintenance of the property, as well as planning and investment processes and human resources importance. As Asset management team member the student will be in position to solve various problem situations under realistic market conditions.				
Learning outcomes:	1.Link importance of planning process and market analysis in order to ensure successful asset management. Level:6,7 2.Identify the role and place of asset management within the business system. Level:6 3.Key performance indicators comment of asset management over the lifetime. Level:6 4.Identify the sequence and understand the importance of investment project monitoring. Level:6 5.Critically evaluate results of analysis of use fixed assets and maintenance based on method of reliability of asset management. Level:7 6.Be prepared for active participation in processes of asset management within the business system. Level:6,7				
Involvement of learning outcomes of the course in study programme:	1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 5h in 150h 1.5.OPĆI Identificirati, modelirati i rješavati inženjerske probleme.: 5h in 150h 1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 5h in 150h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 5h in 150h 2.3.OSOBNE Etički i moralni pristup radu.: 5h in 150h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 5h in 150h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 10h in 150h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 5h in 150h 2.12.OSOBNE Fleksibilnost i prilagodljivost u iznalaženju tehničkih rješenja uz neupitno poštivanje temeljnih etičkih načela, pravnih normi i pravila struke.: 5h in 150h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 20h in 150h 3.2.SPECINF Razumijevati domenu inženjerstva i tehnologija sukladno stupnju obrazovanja: 20h in 150h 3.3.SPECINF Povezati relevantne specifične discipline kao što su informacijsko-računarsko inženjerstvo i tehnologije u poslovnom okruženju: 20h in 150h 3.4.SPECINF Upotrijebiti stečena znanja za samostalno usvajanje novih znanja: 20h in 150h 3.5.SPECINF Realizirati kritičko razmišljanje te logičko stvaranje mišljenja u poslovnim i inženjerskim procesima: 20h in 150h				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion The lessons are exhibited in a way that the theoretical framework combines with examples of practice and students are encouraged to give an overview of the examples they have come up with.				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Interactive problem solving Workshop				
Methods of carrying out seminars	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Workshop				
Course content lectures	1.Introductory lecture, 3h, Learning outcomes:1 2.Strategic management with planning and use of fixed asset acquisition , 3h, Learning outcomes:2 3.Life cycle monitoring and competences in asset management, 3h, Learning outcomes:2,3 4.Market analysis, segmentation and marketing processes as tools for successful asset management, 3h, Learning outcomes:3 5.Financial reports as sources of asset management performance indicators , 3h, Learning outcomes:3,4 6.Metrics and asset management standards and preparation of investment projects, 3h, Learning outcomes:4 7.Fixed assets use and maintenance, 3h, Learning outcomes:5 8.Ontology and Integrated Asset Management, 3h, Learning outcomes:6 9.Asset management tools and methodologies , 3h, Learning outcomes:1,2,3,4,5,6 10.Asset management system reliability , 3h, Learning outcomes:1,2,3,4,5,6 11.No lessons 12.No lessons 13.No lessons 14.No lessons				

	15.No lessons
Course content auditory	1.No lessons 2.Type and purpose of Assets and the Process of Asset Management Planning, 3h, Learning outcomes:1,2 3.Market Analysis Methods Applying, 4h, Learning outcomes:3 4.Cost and revenue analysis in process of performance indicators calculation , 4h, Learning outcomes:3 5.1st colloquium, 1h, Learning outcomes:1,2,3 6.No lessons 7.No lessons 8.No lessons 9.No lessons 10.2nd colloquium, 1h, Learning outcomes:4,5,6 11.No lessons 12.No lessons 13.No lessons 14.No lessons 15.No lessons
Course content seminars	1.No activities 2.No activities 3.No activities 4.No activities 5.No activities 6.Practical application of process norms in Asset management , 3h, Learning outcomes:4 7.Investment project analysis, 4h, Learning outcomes:5,6 8.Faults and damage monitoring of Fixed assets during their life cycle , 4h, Learning outcomes:5,6 9.Program support and risk management methods of asset management systems, 4h, Learning outcomes:6 10.No activities 11.No activities 12.No activities 13.No activities 14.No activities 15.No activities
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory
Exam literature	Obavezna literatura: 1.prof. dr.sc. Ivo Čala i ostali: Održavanje i gospodarenje imovinom, Hrvatsko društvo održavatelja, Zagreb, 2016. 2.dr.sc. Mladen Mauher i mr.sc. Sanja Bračun: Aktualne elektroničke mape nastavnika pripremljene za predavanja dostupne na LMS sustavu Preporučena literatura: 1.S. Duffuaa; A Raouf, Cham: e-book Planning and control of maintenance systems: modelling and analysis", Springer, 2015. 2.John Woodhouse: ISO 55000: Asset management What to do and why? 2014. 3.David G Cotts; Kathy O Roper; Richard P Payant, Chichester: e-book International facility management, West Sussex, United Kingdom, 2014. 4.Constantin May; Peter Schimek, Ansbach: Total productive management: fundamentals and introduction to TPM - or how to achieve operational excellence", CETPM Publ. 2014. 5.David G Cotts; Kathy O Roper; Richard P Payant: e-book The facility management handbook, New York: American Management Association, 2010. 6.D. J. VANIER, Asset management: "A to Z", Institute for Research in Construction, National Research Council Canada, 1200 Montreal Road, Ottawa, 2001.
Students obligations	70% of attendance on lessons and exercises
Knowledge evaluation during semester	1st and 2nd colloquium
Knowledge evaluation after semester	Oral Exam (in case of non-fulfilment of 1st and 2nd colloquium conditions)
Student activities:	Aktivnost ECTS (Oral exam) 5
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23147/130914	**ECTS**	6.0	**Academic year**	2018/2019
Name	Basics of Digital Education				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:1. izv. prof. dr. sc. Petar Jandrić prof. v. šk. Auditory exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk. Seminar exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk.				
Course objectives	This course introduces students to digital education.				
Learning outcomes:	1.Formulate / define key concepts in digital education . Level:6,7 2.Formulate / define the main concepts in critical pedagogy . Level:6,7 3.Formulate / define key perspectives to digital technologies. Level:6,7 4.Critically assess key perspectives to educational technologies . Level:7 5.Critically assess the relationships between education and technology . Level:7 6.Formulate / define key aspects of the digital divide . Level:6,7 7.Critically assess the metaphor of digital natives and immigrants . Level:7 8.Critically asses the relationships between digital education and various aspects of the contemporary society. Level:7 9.Present conclusions at an appropriate level. Level:6,7 10.Write a critical seminar on digital education . Level:6,7				
Methods of carrying out lectures	Case studies Demonstration Simulations Modelling Discussion Seminar, students presentation and discussion Other e-learning				
Methods of carrying out auditory exercises	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Other e-learning				
Methods of carrying out seminars	Essay writing Other e-learning				
Course content lectures	1.Introduction to digital education , 2h, Learning outcomes:1,9,10 2.Foundations of critical pedagogy (1) , 2h, Learning outcomes:1,2,9,10 3.Foundations of critical pedagogy (2) , 2h, Learning outcomes:1,2,9,10 4.Views and pespectives to educational technologies (1) , 2h, Learning outcomes:3,8,9 5.Views and pespectives to educational technologies (2) , 2h, Learning outcomes:3,9,10 6.Introduction to globalisation , 2h, Learning outcomes:4,8,9 7.Education and globalisation , 2h, Learning outcomes:4,8,9 8.McDonaldisation of education , 2h, Learning outcomes:4,9,10 9.The digital divide , 2h, Learning outcomes:4,5,9,10 10.Digital natives, digital immigrants , 2h, Learning outcomes:4,5,6,7,9,10 11.Digital education as technology , 2h, Learning outcomes:8,9,10 12.Digital education as culture industry , 2h, Learning outcomes:8,9,10 13.Digital education as a message , 2h, Learning outcomes:8,9,10 14.Digital education as culture industry , 2h, Learning outcomes:8,9,10 15.Digital education and social change, 2h, Learning outcomes:8,9,10				
Course content auditory	1.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 2.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 3.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 4.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 5.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 6.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 7.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 8.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 9.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 10.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 11.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 12.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 13.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 14.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 15.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10				
Course content seminars	1.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 2.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 3.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 4.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 5.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10				

	6.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 7.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 8.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 9.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 10.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 11.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 12.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 13.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 14.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 15.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10
Required materials	Special equipment no equipment
Exam literature	Castells, M. (2003). Internet Galaksija: Razmišljanja o Internetu, poslovanju i društvu. Prvo izdanje. Preveo N. Dužanec. Zagreb: Naklada Jesenski i Turk. Freire, P. (2002). Pedagogija obespravljenih. Prvo izdanje. Zagreb: Odraz. Haraway, D. (1991). Simians, cyborgs and women: the reinvention of nature. London: Free Association Books. Heidegger, M. (1981). "Only a God Can Save Us": The Spiegel Interview. U T. Sheehan (Ed.), Heidegger: The Man and the Thinker. Chicago: Precedent Press, str. 45-67. Horkheimer, M. i Adorno, T.W. (2002). Dialectic of Enlightenment: Philosophical Fragments. Stanford: Stanford University Press. Illich, I. (1973). Tools for Conviviality. London: Marion Boyars Publishers Ltd. Jandrić, P. i Boras, D. (2012). Kritičko e-obrazovanje: borba za moć i značenje u umreženom društvu. Zagreb: FF Press i Tehničko veleučilište u Zagrebu. McLaren, P. (2014). Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education. Šesto izdanje. Boulder: Paradigm Publishers. McLaren, P. i Jandrić, P. (2014). Critical revolutionary pedagogy is made by walking in a world where many worlds coexist. Policy Futures in Education, 12(6). Prensky, M. (2005). Digitalni urođenici, digitalne pridošlice: Razmišljaju li doista drugačije?. Edupoint, 5(32). Prensky, M. Digitalni urođenici, digitalni pridošlice. Edupoint, 8(40). Suoranta, J. i Vaden, T. (2010). Wikiworld. London: Pluto Press.
Students obligations	(1)Participation (0-30 points) (2)Coursework (0-70 points) A minimum of 15 points in participation is required for successful completion of the course!
Knowledge evaluation during semester	Continuous assessment of online activity.
Knowledge evaluation after semester	Coursework
Student activities:	Aktivnost — ECTS (Classes attendance) — 2 (Seminar Work) — 4
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Dr Petar Jandrić prof

Code WEB/ISVU	23810/171755	**ECTS**	5.0	**Academic year**	2018/2019
Name	Bridge				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (STARI Specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 90
Teachers	Lectures: Ognjen Staničić dipl. ing. Laboratory exercises: Ognjen Staničić dipl. ing.				
Course objectives	Introduction to Bridge. Learning basic bidding and play rules. Learning most frequently used bidding conventions. Introduction to relevant mathematical principles and card distribution probability analysis. Estimating hand value and reevaluation. Analyzing information from the play and the bidding and making conclusions.				
Learning outcomes:	1.formulate basic bridge rules, bidding flow, declarer play and defense. Level:6,7 2.Analyze different hand types and the way they are bid. Level:6 3.estimate hand value based on partners hand and the bidding. Level:6,7 4.conclude card distribution and the winning move based on the probability model and available information. Level:6,7 5.compare certain lines of play based on their mathematical expectancy. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Discussion Questions and answers Other Practice in the bridge club				
Methods of carrying out laboratory exercises	Group problem solving Discussion, brainstorming Interactive problem solving Other Bridge base online				
Course content lectures	1.Introduction to bridge, 2h, Learning outcomes:1 2.Bidding logic, 2h, Learning outcomes:1,2,3 3.Declaring basics, 2h, Learning outcomes:1,4 4.Opening leads, signals and principles in defense, 2h, Learning outcomes:1,4 5.Trump and notrump play, 2h, Learning outcomes:1,5 6.One of a suit openings, 2h, Learning outcomes:2,3 7.1NT and 2NT opening, 2h, Learning outcomes:2,3 8.2C opening, 2h, Learning outcomes:2,3 9.Preemptive bidding, 2h, Learning outcomes:2,3 10.Probabilities in bridge, 2h, Learning outcomes:4,5 11.Suit combinations, 2h, Learning outcomes:4,5 12.Takeout doubles, 2h, Learning outcomes:2,3 13.Overcalls and competitive bidding, 2h, Learning outcomes:2,3 14.Practice, 2h, Learning outcomes:4,5 15.No classes, 2h				
Course content laboratory	1.No classes, 2h 2.No classes, 2h 3.No classes, 2h 4.Mini bridge, 2h, Learning outcomes:1 5.Mini bridge, 2h, Learning outcomes:1 6.One of a suit openings, 2h, Learning outcomes:2,3 7.1NT and 2NT opening, 2h, Learning outcomes:2,3 8.2C opening, 2h, Learning outcomes:2,3 9.Preemptive bidding, 2h, Learning outcomes:2,3 10.Bridge probabilities, 2h, Learning outcomes:4,5 11.Suit combinations, 2h, Learning outcomes:4,5 12.Takeout doubles, 2h, Learning outcomes:2,3 13.Overcalls and competitive bidding, 2h, Learning outcomes:2,3 14.Tournament and scoring methods, 2h, Learning outcomes:1 15.No classes, 2h				
Required materials	General purpose computer laboratory Whiteboard with markers Overhead projector				
Exam literature	1. Neven Elezović: Naučite bridž za deset dana (i deset noći), Element, Zagreb, 2004.,				
Students obligations	Regular attendance				
Knowledge evaluation during semester	Regular attendance, theoretical and practical exams				

Knowledge evaluation after semester	Written and oral exam	
Student activities:	Aktivnost	ECTS
	(Classes attendance)	2
	(Practical work)	2
	(Constantly tested knowledge)	1
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	dipl. ing. Ognjen Staničić , 6.6.2017	

Code WEB/ISVU	23139/130905	**ECTS**	5.0	**Academic year**	2018/2019
Name	Business Ethics and Law				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				45+15 (0+0+15+0) 90
Teachers	Lectures: Ljiljana Matuško Antonić Seminar exercises: Ljiljana Matuško Antonić				
Course objectives	To introduce students to the theory of stakeholders and basics of civil law				
Learning outcomes:	1.ability to standardise the notions of morals and ethics. Level:6,7 2.ability to present a theory of stakeholders . Level:6,7 3.ability to formulate the CSR as the heart of a business strategy. Level:6,7 4.ability to build ethical theories. Level:6,7 5.ability to formulate/to design a framework for understanding ethics in making decisions. Level:6,7 6.ability to standardise theOCD features. Level:6,7				
Methods of carrying out lectures	Case studies Discussion Questions and answers Interactive lessons				
Methods of carrying out seminars	Group problem solving Discussion, brainstorming				
Course content lectures	1.Introduction to Civil Law, 2h, Learning outcomes:5 2.Principles of Civil Law, 2h, Learning outcomes:5 3.The subjects and objects of civil right, 2h, Learning outcomes:5 4.Introduction to the law of obligations, 2h, Learning outcomes:5 5.Subjects civil obligations relations, 2h, Learning outcomes:5 6.Objects civil obligations relations, 2h, Learning outcomes:5 7.Reinforcement of civil obligations relations, 2h, Learning outcomes:5 8.The sales contract, Services contract, 2h, Learning outcomes:5 9.Construction contract, 2h, Learning outcomes:5 10.Loan Agreement, 2h, Learning outcomes:5 11.The agency agreement, 2h, Learning outcomes:5 12.Termination of an obligation relations, 2h, Learning outcomes:5 13.Introduction to business ethics, principles, 2h, Learning outcomes:5 14.Convention on Human Rights, 2h, Learning outcomes:5 15.The right to freedom of speech, work, family life, 2h, Learning outcomes:5				
Course content seminars	1.The sales contract,, 2h, Learning outcomes:5 2.Liability for defects stufft, 2h, Learning outcomes:5 3.Protection of private life, 2h, Learning outcomes:5 4.The banking secret, 2h, Learning outcomes:5 5.The responsibility of the contractor, 2h, Learning outcomes:5 6.Ineffectiveness of contract, 2h, Learning outcomes:5 7.Relatively be invalid contracts, 2h, Learning outcomes:5 8. Services contract, 2h, Learning outcomes:5 9.Construction contract, 2h, Learning outcomes:5 10.Loan Agreement, 2h, Learning outcomes:5 11.The agency agreement, 2h, Learning outcomes:5 12.Breach of contract, 2h, Learning outcomes:5 13.customer rights, 2h, Learning outcomes:5 14.Right to work, 2h, Learning outcomes:5 15.negotiations, 2h, Learning outcomes:5				
Required materials	Whiteboard with markers Overhead projector				
Exam literature	Hans Jonas, The Imperative of Responsibility, The University of Chicago Press Funky Business Kapital pleše samo s darovitima, Kjell A. Nordstrm Jonas Ridderstr#229;le (Differo) Etika u gospodarstvu : (religije, moral, poslovanje) / Tibor Karpati (Ekonomski fakultet u Osijeku) Business Ethics: Readings and Cases in Corporate Morality, / W. Michael Hoffman, Robert E Frederick, Mark Schwartz (McGraw-Hill Humanities) http://www.kurzweilai.net/ Građansko pravo: Martin Vedriš, Petar Klarić Stvarno pravo: Nikola Gavella, Tatjana Josipović, Igor Gliha, Vlado Belaj, Zlatan Stipković				
Students obligations	maximum of 3 absences from exercises				
Knowledge evaluation during semester	Kolokvij#1#20#0$Usmena provjera znanja#1#80#0$				

Knowledge evaluation after semester	Writing a paper on subject and exam	
Student activities:	Aktivnost	ECTS
	(Written exam)	3
	(Classes attendance)	1
	(Oral exam)	1
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	

Code WEB/ISVU	23151/130918	**ECTS**	6.0	**Academic year**	2018/2019
Name	Business Information System architekture and integration				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+15+0+0) 120
Teachers	Lectures: dr. sc. Darko Galinec , znan. sur., prof. v. š. Auditory exercises: Edmond Krusha , struč.spec.ing.techn.inf., predavač Laboratory exercises: Edmond Krusha , struč.spec.ing.techn.inf., predavač				
Course objectives	Students will receive based knowledge in the field of business information systems architecture.				
Learning outcomes:	1.ability to estimate the feasibility of the application integration solutions within IS architecture of a business system. Level:6,7 2.ability to understand the need for integration of applications within IS architecture of a business system. Level:7 3.ability to distinguish between different possibilities of integration solutions within IS architecture of a business system. Level:6,7 4.ability to provide a solution to integration of applications based on integration topologies and systems within IS architecture. Level:6,7 5.ability to evaluate the application integration solutions within IS architecture of a business system . Level:7				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 7h in 180h 1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 6h in 180h 1.4.OPĆI Povezati inženjerske aktivnosti konstruiranja, proizvodnje i marketinga s potrebama korisnika proizvoda i usluge.: 6h in 180h 1.5.OPĆI Identificirati, modelirati i rješavati inženjerske probleme.: 6h in 180h 1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 6h in 180h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 6h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 6h in 180h 2.3.OSOBNE Etički i moralni pristup radu.: 7h in 180h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 7h in 180h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 6h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 7h in 180h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 7h in 180h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 7h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 7h in 180h 2.12.OSOBNE Fleksibilnost i prilagodljivost u iznalaženju tehničkih rješenja uz neupitno poštivanje temeljnih etičkih načela, pravnih normi i pravila struke.: 7h in 180h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 7h in 180h 3.2.SPECINF Razumijevati domenu inženjerstva i tehnologija sukladno stupnju obrazovanja: 7h in 180h 3.3.SPECINF Povezati relevantne specifične discipline kao što su informacijsko-računarsko inženjerstvo i tehnologije u poslovnom okruženju: 7h in 180h 3.4.SPECINF Upotrijebiti stečena znanja za samostalno usvajanje novih znanja: 9h in 180h 3.5.SPECINF Realizirati kritičko razmišljanje te logičko stvaranje mišljenja u poslovnim i inženjerskim procesima: 9h in 180h 5.1.E-poslovanje Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa u poslovnim okruženjima: 10h in 180h 5.2.E-poslovanje Primijeniti znanja, metode i alate za formalizaciju poslovnih informacijskih sustava: 9h in 180h 5.3.E-poslovanje Primijeniti formalne metode na analizu zahtjeva kod projektiranja poslovnih informacijskih sustava : 7h in 180h 5.4.E-poslovanje Upotrijebiti metode i alate u modeliranju procesa i podatka poslovnih informacijskih sustava: 10h in 180h 5.5.E-poslovanje Održavati komponente poslovnih informacijskih sustava: 7h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Case studies Homework presentation				
Methods of carrying out auditory exercises	Traditional literature analysis Essay writing Discussion, brainstorming				
Methods of carrying out laboratory exercises	Group problem solving Essay writing Discussion, brainstorming Workshop				
Course content lectures	1.IS architecture framework, 4h, Learning outcomes:1 2.IS architecture framework usability, 4h, Learning outcomes:2 3.Business aarchitecture, information systems architecture, technology architecture, 4h, Learning outcomes:2,3 4.Information systems architecture: information architecture and applications architecture, 4h, Learning outcomes:2,3 5.Introduction to enterprise application integration, 4h, Learning outcomes:2,3 6.Real-Time Enterprise, 4h, Learning outcomes:2,3 7.History and development of EAI , 4h, Learning outcomes:2,3 8.Event-Driven Architecture, 2h, Learning outcomes:4,5 9.No classes 10.No classes 11.No classes				

	12.No classes 13.No classes 14.No classes 15.No classes
Course content auditory	1.Introduction to creation of a written work in the field of architecture and integration of business IS., 2h, Learning outcomes:1 2.Examples of papers - approach of processing theoretical pieces related to the architecture and integration of business IS., 2h, Learning outcomes:2,3 3.Examples of papers - approach of analysis that shows an example of business practices., 2h, Learning outcomes:2,3 4.An example of architecture and integration using the canonical form of the data model., 2h, Learning outcomes:2,3 5.An example of architecture and integration using the canonical form of the data model., 2h, Learning outcomes:2,3 6.Presentation of written work and discussion., 2h, Learning outcomes:4,5 7.Presentation of written work and discussion., 2h, Learning outcomes:4,5 8.Presentation of written work and discussion., 1h, Learning outcomes:5 9.No classes. 10.No classes. 11.No classes. 12.No classes 13.No classes 14.No classes 15.No classes
Course content laboratory	1.Introduction to the course and program Enterprise Architect, Zachman Framework and TOGAF., 1h, Learning outcomes:1 2.Exercises in the program Enterprise Architect, Zachman Framework and TOGAF., 1h, Learning outcomes:2,3 3.Exercises in the program Enterprise Architect, Zachman Framework and TOGAF. Generating documentation and code., 1h, Learning outcomes:2,3 4.Eexercises UML., 2h, Learning outcomes:2,3 5.Making simple examples of UML diagrams., 1h, Learning outcomes:2,3 6.Creating complex examples of UML diagrams., 1h, Learning outcomes:2,3 7.Specification of an skill task., 1h, Learning outcomes:2,3 8.Making an skill task., 2h, Learning outcomes:3,4 9.Making an skill task., 2h, Learning outcomes:3,4 10.Making an skill task., 1h, Learning outcomes:3,4 11.Documenting an skill task., 1h, Learning outcomes:3,4 12.Presentation of an skill task., 1h, Learning outcomes:5 13.No classes., Learning outcomes:3 14.No classes. 15.No classes.
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Tools
Exam literature	Op't Land M., Proper E., Waage M., Cloo J., Steghuis C.: Enterprise Architecture Creating Value by Informed Governance, Springer, 2009. Galinec D.: Aplikacijska integracija, radni materijal dostupan na webu, Tehničko veleučilište u Zagrebu, 2012. BuHunter R., Westerman G.,: The Real Business Value of IT: How CIOs Create and Commujnicate Value, Harvarde Business Press Series, 2009. * Khan R. N.: Business Process Management. A Practical Guide, Meghan-Kiffer Press, Tampa, FL, USA, 2004 * Krafzig D., Banke K., Slama D. : Enterprise SOA: Service-Oriented Architecture Best Practices, Prentice Hall PTR, Upper Saddle River, NJ, USA, 2004 * ITtoolbox : EAI Knowledge Base, http://eai.ittoolbox.com, Information Technology Toolbox, Inc., Scottsdale, AZ, USA, 2012
Students obligations	Maximum of 3 absences from exercises. Presented seminar paper.
Knowledge evaluation during semester	Seminar paper. Presentation. 100 points. Evaluation: 90.01 - 100.00 points: excellent (5) 81.01 - 90.00 points: very good (4) 70.01 - 80.00 points: good (3) 60.01 - 69.00 points: sufficient (2).
Knowledge evaluation after semester	Written exam. Evaluation: 90.01 - 100.00 points: excellent (5) 81.01 - 90.00 points: very good (4) 70.01 - 80.00 points: good (3) 60.01 - 69.00 points: sufficient (2).
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	College Professor Darko Galinec, PhD

Code WEB/ISVU	23183/130955	**ECTS**	6.0	**Academic year**	2018/2019
Name	Business intelligence and big data analytics				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+15+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Goran Klepac Prof. v.š. Auditory exercises:Prof. dr. sc. Goran Klepac Prof. v.š. Laboratory exercises:Prof. dr. sc. Goran Klepac Prof. v.š.				
Course objectives	To learn students for applying advanced analytical techniques in business				
Learning outcomes:	1.Holistic anayticalč model. Level:6,7 2.Different methods. Level:6,7 3.Adequate analytical solution model. Level:7 4.Analytical solution model. Level:6,7 5.Analitical solution. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Simulations Modelling Discussion Questions and answers				
Methods of carrying out auditory exercises	Computer simulations Workshop				
Methods of carrying out laboratory exercises	Workshop				
Course content lectures	1.Basic terms. Business intelligence and big data analytics., 2h, Learning outcomes:1,2 2. Data preprocessing.Attribute relevance analysis., 2h, Learning outcomes:1,2 3.Data preprocessing.Attribute relevance analysis., 2h, Learning outcomes:1,2 4.Factor analysis, 2h, Learning outcomes:2,3 5.Factor analysis, 2h, Learning outcomes:2,3 6.Predictive model development, 2h, Learning outcomes:2,3 7.Predictive model development, 2h, Learning outcomes:3,4 8.Predictive model development, 2h, Learning outcomes:3,4 9.Profiling, 2h, Learning outcomes:3,4 10.Profiling, 2h, Learning outcomes:3,4 11.Simulation models development using Bayesian networks, 2h, Learning outcomes:3,4 12.Simulation models development using Bayesian networks, 2h, Learning outcomes:3,4 13.Unstructured data analysis , 2h, Learning outcomes:2,4 14.Social network analysis, 2h, Learning outcomes:2,4 15.Advanced analytical model development, 2h, Learning outcomes:2,4				
Course content auditory	1.Introduction in programming languages for business intelligence and big data analytics, 2h, Learning outcomes:1,2 2.Introduction in programming languages for business intelligence and big data analytics, 2h, Learning outcomes:1,2 3.Attribute relevance analysis , 2h, Learning outcomes:1,2 4.Attribute relevance analysis , 2h, Learning outcomes:1,2 5.Attribute relevance analysis, 2h, Learning outcomes:1,2 6.Predictive model development , 2h, Learning outcomes:1,2,3 7.Predictive model development , 3h, Learning outcomes:3,4,5 8.- 9.- 10.- 11.Simulation model development 12.- 13.- 14.- 15.-				
Course content laboratory	1.Big data analytical model, 2h, Learning outcomes:1 2.Big data analytical model, 2h, Learning outcomes:1 3.Social network analysis, 2h, Learning outcomes:3 4.Social network analysis, 2h, Learning outcomes:3 5.Natural language processing, 2h, Learning outcomes:3 6.Natural language processing, 2h, Learning outcomes:3 7.Natural language processing, 3h, Learning outcomes:3 8.+ 9.+ 10.+ 11.+ 12.+ 13.+, 2h 14.+				

	15.+
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Overhead projector
Exam literature	Klepac, G. (2014). Data Mining Models as a Tool for Churn Reduction and Custom Product Development in Telecommunication Industries. In P. Vasant (Ed.), Handbook of Research on Novel Soft Computing Intelligent Algorithms: Theory and Practical Applications (pp. 511-537). Hershey, PA: Information Science Reference. doi:10.4018/978-1-4666-4450-2.ch017 Klepac, G. (2013). Risk Evaluation in the Insurance Company Using REFII Model. In S. Dehuri, M. Patra, B. Misra, A. Jagadev (Eds.) Intelligent Techniques in Recommendation Systems: Contextual Advancements and New Methods (pp. 84-104). Hershey, PA: Information Science Reference. doi:10.4018/978-1-4666-2542-6.ch005 Klepac, G. (2010). Preparing for New Competition in the Retail Industry. In A. Syvajarvi, J. Stenvall (Eds.) Data Mining in Public and Private Sectors: Organizational and Government Applications (pp. 245-266). Hershey, PA: Information Science Reference. doi:10.4018/978-1-60566-906-9.ch013 Prof. dr. sc. Goran Klepac, : "SUSTAVI POTPORE ODLUČIVANJU", priručnik. Izdavač: Algebra d.o.o., 2011. ISBN 978-953-322-093-2 Prof. dr. sc. Goran Klepac suradnik : KOMPETITIVNA ANALIZA poslovne i ekspertne kvantitativne analitičke tehnike (2011), dr. sc. Robert Kopal, Darija Korkut, Izdavači: Comminus, Effectus učilište. Klepac Goran, "Integrating Seasonal Oscillations into Basel II Behavioural Scoring Models" u knjizi , "Credit Scoring - Concepts, Perspectives and Models"; editors: Ravi Kumar, Jain B; The Icfai University Press, India, 2008, ISBN: 978-81-314-1577-1 Klepac, Goran ; Mršić, Leo: Poslovna inteligencija kroz poslovne slučajeve, Liderpress/TimPress, Zagreb, 2006, ISBN: 953-95472-1-0 Klepac, Goran ; Panian, Željko: Poslovna inteligencija, Masmedia, Zagreb, 2003, ISBN: 953-157-447-2 Klepac, Goran: Primjena inteligentnih računalnih metoda u menadžmentu, Sinergija, Zagreb, 2001, ISBN: 953-6895-01-3
Students obligations	Attendance on classes
Knowledge evaluation during semester	Exams
Knowledge evaluation after semester	Project wit oral exam
Student activities:	Aktivnost — ECTS (Oral exam) — 1 (Project) — 5
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23152/130920	**ECTS**	6.0	**Academic year**	2018/2019
Name	Business Process Modeling				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+15+0+0) 120
Teachers	Lectures:dr.sc. Mladen Mauher prof.v.šk. Auditory exercises: Edmond Krusha , struč.spec.ing.techn.inf., predavač Laboratory exercises: Edmond Krusha , struč.spec.ing.techn.inf., predavač				
Course objectives	to enable graduate students to work as business analyst, manager, strategic organization and ICT development planner, business excellence consultant				
Learning outcomes:	1.to identify and clarify the taxonomy and ontology of business process. Level:7 2.to elaborate and explain the amin features of a business process model . Level:6,7 3.to compare business process domains and interactions, and clarify difussion and reintegration of business processes. Level:6,7 4.to identify business process specification standards and conceptual models of business processes. Level:7 5.to critically clerify the reasons of transformations of business processes to business services, and standardized models of business processes and business services. Level:7 6.to propose the sequence and ussage methods of business process execution languages, and universal bussiness language messages. Level:7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Modelling Discussion Questions and answers				
Methods of carrying out auditory exercises	Laboratory exercises, computer simulations Group problem solving Discussion, brainstorming Mind mapping Interactive problem solving Workshop				
Methods of carrying out laboratory exercises	Laboratory exercises, computer simulations Group problem solving Essay writing Workshop				
Course content lectures	1.Business process taxonomy; Business process ontology, 2h, Learning outcomes:1 2.Business process ontology; Generic model of business system and business processes, 2h, Learning outcomes:1 3.Conceptual modela and terminology; Functional and process decomposition, 2h, Learning outcomes:2 4.Process models and interactions; Modeling of data, organization and operations , 2h, Learning outcomes:2 5.Business process data features; Process model structure and features; Business process foundations, 2h, Learning outcomes:3 6.Definition scope of business process; Business process performance specification; Business process determinants, 2h, Learning outcomes:3 7.Modeling domains of business process; Business process interaction and integration models, 2h, Learning outcomes:3 8.Business Motivation Model (BMM); Business Model and Notation (BPMN); Business Process Definition Metamodel (BPDM); Business Process Maturity Model (BPMM), 2h, Learning outcomes:4 9.Semantics of Business Vocabulary and Rules (SBVR); Workflow Management Facility; Production Rules Representation (PRR); SOMF Service Oriented Modeling Framework, 2h, Learning outcomes:4 10.Process orchestration and choreography design; Choreography implementation, 2h, Learning outcomes:4 11.Business processes and business services; Externalisation of business processes; Service interaction types, 2h, Learning outcomes:5 12.Business process modeling languages (BPML); Business process execution languages (BPEL), 2h, Learning outcomes:5 13.Management architectures of business process chains, 2h, Learning outcomes:6 14.Universal business process models; Universal business language (UBL), 2h, Learning outcomes:6 15.Business process project development and implementation, 2h, Learning outcomes:6				
Course content auditory	1.Introduction to business process modeling, 1h, Learning outcomes:1 2.Business process modeling notation (BPMN), 1h, Learning outcomes:1 3.Business process modeling notation (BPMN), 1h, Learning outcomes:2 4.Simple business process model - Case study, 1h, Learning outcomes:2 5.Compound business process model - Case study, 1h, Learning outcomes:3 6.Complex business process model - Case study, 1h, Learning outcomes:3 7.Business process CASE diagramming examples, 1h, Learning outcomes:3 8.Business process CASE diagramming examples, 1h, Learning outcomes:3 9.Laboratory assignment design, 1h, Learning outcomes:1,2,3,4 10.Laboratory assignment mentoring, 1h, Learning outcomes:1,2,3,4 11.Laboratory assignment mentoring, 1h, Learning outcomes:1,2,3,4 12.Laboratory assignment mentoring, 1h, Learning outcomes:1,2,3,4 13.Laboratory assignment code generation, 1h, Learning outcomes:1,2,3,4 14.Laboratory assignment documentation, 1h, Learning outcomes:1,2,3,4				

	15.Laboratory assignment presentation, 1h, Learning outcomes:1,2,3,4,6
Course content laboratory	1..Introduction to business process modeling, 1h, Learning outcomes:1 2..Business process modeling notation, 1h, Learning outcomes:1 3..Business process modeling notation, 1h, Learning outcomes:2 4.Simple business process model design, 1h, Learning outcomes:2 5.Compound business process model design, 1h, Learning outcomes:3 6.Complex business process model design, 1h, Learning outcomes:3 7.Complex business process model design, 1h, Learning outcomes:3 8.Specification of laboratory assignment (USE CASE), 1h, Learning outcomes:1,2,3,4 9.Specification of laboratory assignment (USE CASE), 1h, Learning outcomes:1,2,3,4 10.Construction of laboratory assignment (Activity Diagram), 1h, Learning outcomes:1,2,3,4 11.Construction of laboratory assignment (Activity Diagram), 1h, Learning outcomes:1,2,3,4 12.Construction of laboratory assignment (Activity Diagram), 1h, Learning outcomes:1,2,3,4 13.Construction of laboratory assignment (Activity Diagram), 1h, Learning outcomes:1,2,3,4 14.Laboratory assignment documentation, 1h, Learning outcomes:1,2,3,4 15.Laboratory assignment presentation, 1h, Learning outcomes:1,2,3,4,6
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector
Exam literature	1. Mathias Weske: Business Process Management: Concepts, Languages, Architectures, Springer-Verlag Berlin Heidelberg 2007
Students obligations	70% lecture attendance 80% excercise attendance
Knowledge evaluation during semester	n/a
Knowledge evaluation after semester	laboratory assignment outcome (50%) written exam (30%) oral exam (20%)
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23189/130964	**ECTS**	6.0	**Academic year**	2018/2019
Name	Computerization of medical records and records				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole Laboratory exercises: Biserka Klarić				
Course objectives	To introduce students with different ways to store and display medical documents, and learn to form and manage several medical records..				
Learning outcomes:	1.to formulate the components of electronic medical records. Level:6,7 2.to classify the various types of electronic medical records with regard to the purpose. Level:6,7 3.to support system maintenance medical electronic documentation. Level:7 4.to evaluate system of protection and disposition of electronic medical records. Level:7 5.to propose a model of depersonalization of data for research purposes. Level:6,7 6.to rearrange information from electronic medical records for the purpose of determining. Level:6,7 7.to build a new report based on the available data in electronic medical records. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Demonstration Modelling Discussion				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Discussion, brainstorming Mind mapping				
Course content lectures	1.Introduction to the use and management of medical records. Designing medical records., 4h, Learning outcomes:1 2.Institutional level of documentation - electronic medical record (EMR)., 4h, Learning outcomes:2 3.The inter-institutional level of documentation - electronic health records (EHR)., 4h, Learning outcomes:3 4.Electronic patient records (EPR)., 4h, Learning outcomes:4 5.Nursing documentation., 4h, Learning outcomes:4,5 6.The use of electronic medical records in the decision making process., 4h, Learning outcomes:4,5,6 7.The disposal and security management of medical records., 4h, Learning outcomes:4,5,6 8.Monitoring the quality of medical institutions using electronic medical records., 2h, Learning outcomes:4,5,6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content laboratory	1.Practical modeling of electronic medical records., 4h, Learning outcomes:1 2.Analysis of data in electronic medical records of hospital (EMR) on the basis of test cases. , 4h, Learning outcomes:2 3.Analysis of data in electronic medical records in primary health care (EMR) on the basis of test cases. , 4h, Learning outcomes:3 4.Analysis of data in electronic patient records (EPR) on the basis of test cases. , 4h, Learning outcomes:3,4 5.Analysis of the application of the nursing documentation at different levels of health care., 4h, Learning outcomes:4,5 6.Examples of data protection in the processing of electronic medical records - procedures of depersonalization of the data., 4h, Learning outcomes:4,5 7.Examples of generating reports from electronic medical records for the purposes of decision making., 4h, Learning outcomes:5,6 8.Examples of generating reports from electronic medical records for the purposes of quality control., 2h, Learning outcomes:5,6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture				
Required materials	Basic: classroom, blackboard, chalk... Special purpose laboratory General purpose computer laboratory Special purpose computer laboratory Whiteboard with markers Overhead projector				
Exam literature	Nastavni materijali - prezentacije na moj.tvz.hr.				
Students obligations	Attendance of 70% of the lectures and 80% exercises				

Knowledge evaluation during semester	No mid-term exam.	
Knowledge evaluation after semester	Evaluation of the written part of the seminar paper (70% points). Presentation of seminar paper (30% points).	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	

Code WEB/ISVU	23192/130967	**ECTS**	6.0	**Academic year**	2018/2019
Name	Database and knowledge base in health care				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole				
Course objectives	Understanding the information space data in the health care system. Using the data in different models database.				
Learning outcomes:	1.classify data models and databases.. Level:6,7 2.critically assess data structures in health care. Level:7 3.combine data in relational and non relational databases.. Level:6,7 4.to select technologies and tools for working with dimensional databases. Level:7 5.classify structured, unstructured and semi-structured data.. Level:6,7 6.Suggest the use of electronic medical records data in the document and graph databases.. Level:6,7 7.to organize information processing from open database of the World Health Organization. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Traditional literature analysis Mind mapping Computer simulations Workshop				
Course content lectures	1.Introduction to the area of databases in the health system. The area most commonly used databases model (relational, object)., 2h, Learning outcomes:1 2.Selected topics from database design, data structures, modeling and development of database management systems to address problems in health informatics., 4h, Learning outcomes:2 3.Selected Topics in NoSQL database and their importance and place in the health care environment., 4h, Learning outcomes:3,4 4.Selected topics in the field of management and engineering knowledge in the health care environment. Building a knowledge base using NoSQL and RDBMS database., 4h, Learning outcomes:3,4,5 5.Integration and syntax and semantic interoperability of systems for data management. Dimensional base (data warehouse)., 4h, Learning outcomes:2,3,4,5 6.Significance of the use of structured, unstructured and semi-structured information, and the use of metadata, ontologies and semantic information in the environment of the health care system., 4h, Learning outcomes:4,5 7.Document databases and electronic patient record (ERP). Graph databases for geographic mapping of clinical data for purposes of understanding and decision-making in the health care system., 4h, Learning outcomes:5,6 8.View the world, 4h, Learning outcomes:5,6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content laboratory	1.Analysis of the application of different models database., 2h, Learning outcomes:1 2.Practical work on modeling data., 4h, Learning outcomes:2 3.Practical work on modeling data., 4h, Learning outcomes:3 4.Analysis of simple examples of using NoSQL databases., 4h, Learning outcomes:4,5 5.Analysis of simple examples of connecting relational and non relational databases., 4h, Learning outcomes:4,5,6 6.Analysis of structured, unstructured and semi-structured information in the information environment of health., 4h, Learning outcomes:5,6 7.Analysis of simple examples of using document and graph database in healthcare., 4h, Learning outcomes:5,6 8.Data Analysis of Open Database World Health Organization and HIMSS., 4h, Learning outcomes:5,6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Required materials	Special purpose laboratory General purpose computer laboratory Special purpose computer laboratory Whiteboard with markers Overhead projector				

Exam literature	Nastavni materijali - prezentacije na moj.tvz.hr	
Students obligations	Attendance of 70% of the lectures and 80% exercises	
Knowledge evaluation during semester	No mid-term exam.	
Knowledge evaluation after semester	Evaluation of the written part of the seminar paper (70% points). Presentation of seminar paper (30% points).	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	

Code WEB/ISVU	23637/157928	**ECTS**	6.0	**Academic year**	2018/2019
Name	Database modeling and administration				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (30+0+0+0) 120
Teachers	Lectures:1. Željko Kovačević , struč.spec.ing.techn.inf. Auditory exercises: Željko Kovačević , struč.spec.ing.techn.inf. Auditory exercises: Martina Petrovečki struč.spec.ing.techn.inf.				
Course objectives	Teach students on how to use relational databases with an emphasis on modeling, analytics and administration of professional databases such as MS SQL Server.				
Learning outcomes:	1.Install and configure database server.. Level:6,7 2.Create ER database model. Level:6,7 3.Perform dabatase normalization. Level:6,7 4.Create SQL quaries, procedures and triggers. Level:6,7 5.Create database schemas, users and roles. Level:6,7 6.Create database replication. Level:6,7 7.Create client application using ADO components. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Simulations Modelling Discussion Questions and answers Seminar, students presentation and discussion				
Methods of carrying out auditory exercises	Laboratory exercises, computer simulations Group problem solving Discussion, brainstorming Computer simulations Interactive problem solving				
Course content lectures	1.Database types, ACID properties, Objects, Data types, SQL queries, 4h, Learning outcomes:1 2.ER model, Conceptual, logical and physical modeling, advanced SQL queries, 4h, Learning outcomes:2,4 3.Database normalization, indexes, 3h, Learning outcomes:3 4.Views, stored procedures, triggers, scalar, aggregate and table functions, 4h, Learning outcomes:4 5.Replication (Snapshot, Transactional, Peer to peer, Merge), 4h, Learning outcomes:6 6.SQL Server administration(schemas, roles, user privilegues), 4h, Learning outcomes:5 7.Developing DB client applications usig ADO components, 4h, Learning outcomes:7 8.Concurrency in multi-user environment, 3h, Learning outcomes:7 9.No class 10.No class 11.No class 12.No class 13.No class 14.No class 15.No class				
Course content auditory	1.Install and configure MS SQL database server, 3h, Learning outcomes:1 2.Conceptual, logical and physical database modeling, 4h, Learning outcomes:2,4 3.Basic and advanced SQL queries, 4h, Learning outcomes:2,4 4.Database normalization, 3h, Learning outcomes:3 5.Views, stored procedures and triggers, 4h, Learning outcomes:2,4 6.Database replication, 4h, Learning outcomes:6 7.Database administration, 4h, Learning outcomes:5 8.Developing database client applications, 4h, Learning outcomes:7 9.No class 10.No class 11.No class 12.No class 13.No class 14.No class 15.No class				
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector				
Exam literature	1. Radovan, M.: Baza podataka, Informator, Zagreb, 1993. 2. Date, C.J.: An Introduction to Database Systems, Addison-Wesley publishing Company, New York. 1994.				
Students obligations	Maximum of 3 absences from exercises and classes				

Knowledge evaluation during semester	Practical work. Oral presentation. Written exam. 100 points. evaluation: 90.01 to 100.00 points: excellent (5) 81.01-90.00 points: very good (4) 70.01-80.00 points: good (3) 60.01-69.00 points: sufficient (2)	
Knowledge evaluation after semester	Practical work. Oral presentation. Written exam 100 points. evaluation: 90.01 to 100.00 points: excellent (5) 81.01-90.00 points: very good (4) 70.01-80.00 points: good (3) 60.01-69.00 points: sufficient (2)	
Student activities:	Aktivnost (Practical work)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	Željko Kovačević struč.spec.ing.techn.inf., 8.6.2016	

Code WEB/ISVU	23157/130925	**ECTS**	6.0	**Academic year**	2018/2019
Name	Design and manage a portfolio of capital projects				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:1. dr.sc. Mladen Mauher prof.v.šk.				
Course objectives	to teach students to design and implement capital project portfolio management system on selected technology platform				
Learning outcomes:	1.to present elements and composition of capital project portfolio. Level:6,7 2.to identify and select capital project and portfolio management methodology. Level:7 3.to create optimal capital project portfolio. Level:6,7 4.to reasses the sensitivity of capital project portfolio. Level:6,7 5.to identify the components of capital project portfolio technology. Level:7 6.to justify interoperability requirements for capital project portfolio management sytem. Level:7				
Involvement of learning outcomes of the course in study programme:	1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 5h in 180h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 5h in 180h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 10h in 180h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 5h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 5h in 180h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 10h in 180h 6.1.E-uprava Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i procesa u okruženjima javne uprave: 50h in 180h 6.3.E-uprava Uspostaviti kolaborativne tehnologije uredskog poslovanja u podsustavima javne uprave: 50h in 180h 6.4.E-uprava Primijeniti formalne metode na analizu zahtjeva kod projektiranja komponenti informacijskih sustava i podsustava uprave: 20h in 180h 6.5.E-uprava Primijeniti standarde interoperabilnosti u sustavima uprave: 20h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Discussion Questions and answers				
Methods of carrying out auditory exercises	Traditional literature analysis Discussion, brainstorming Mind mapping				
Methods of carrying out seminars	Data mining and knowledge discovery on the Web Essay writing				
Course content lectures	1.Introduction: Capital project, capital project portfolio, project and portfolio management technology, 4h, Learning outcomes:1 2.Capital project management methodology, 4h, Learning outcomes:2 3.Capital project portfolio composition and design, 4h, Learning outcomes:2,3 4.Capital project portfolio implementation and optimization, 4h, Learning outcomes:3 5.Capital project portfolio sensitivity analysis , 4h, Learning outcomes:3,4 6.Capital project portfolio technology and integration, 4h, Learning outcomes:5 7.Capital project portfolio organization and management, 4h, Learning outcomes:3,4,5,6 8.Interoperability of capital project and portfolio management systems , 2h, Learning outcomes:6 9.n/a 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a 15.n/a				
Course content auditory	1.n/a 2.n/a 3.n/a 4.n/a 5.National capital project portfolio Case Study and discussion, 4h, Learning outcomes:1,2,3,4,5,6 6.City/local government capital project portfolio: Case Study and discussion, 4h, Learning outcomes:1,2,3,4,5,6 7.Public sector capital project portfolio: Case Study and discussion, 4h, Learning outcomes:1,2,3,4,5 8.Capital project portfolio interoperability: Case Study and discussion, 3h, Learning outcomes:3,4,5 9.n/a 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a 15.n/a				

Course content seminars	1.Seminar topic selection, 2h, Learning outcomes:1 2.Web literature research, 2h, Learning outcomes:1,2 3.Requirement analysis and achievement of capital project portfolio management in student working environment , 2h, Learning outcomes:1,2,3,4 4.Seminar work, 2h, Learning outcomes:1,2,3,4,5,6 5.Seminar work, 2h, Learning outcomes:1,2,3,4,5,6 6.Seminar work, 2h, Learning outcomes:1,2,3,4,5,6 7.Seminar work, 2h, Learning outcomes:1,2,3,4,5,6 8.Seminar delivery, 1h, Learning outcomes:1,2,3,4,5,6 9.n/a 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a 15.n/a
Required materials	Basic: classroom, blackboard, chalk... Overhead projector
Exam literature	Bayney, R.M.: Enterprise Project Portfolio Management, J.Ross Publishing, 2012 Kaganova, O.: Guidebook on Capital Investment Planning in Local Government, Worldbank, 2011.
Students obligations	course attendance 70% auditory exercises attendance 70%
Knowledge evaluation during semester	no
Knowledge evaluation after semester	written exam 50% points oral exam 30% points seminar 20% points
Student activities:	Aktivnost (Written exam) — ECTS 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Prof. Mladen Mauher, Ph.D.

Code WEB/ISVU	23145/130912	**ECTS**	6.0	**Academic year**	2018/2019
Name	Digital culture				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:izv. prof. dr. sc. Petar Jandrić prof. v. šk. Auditory exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk. Seminar exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk.				
Course objectives	This course develops kritical understanding of digital cultures.				
Learning outcomes:	1.Formulate / define the main features of digital cultures . Level:6,7 2.Critically assess the relationships between information technologies and globalisation . Level:7 3.Critically assess development and media representations of digital cultures . Level:7 4.Critically assess the relationships between virtual reality, media and identity . Level:7 5.Formulate / define organisational paradigms in technology development . Level:6,7 6.Formulate / define the main features of hacker ethic . Level:6,7 7.Critically assess the relationships between technology and ideology . Level:7 8.Present conclusions at an appropriate level . Level:6,7 9.Write a critical seminar on digital cultures . Level:6,7				
Methods of carrying out lectures	Guest lecturer Case studies Modelling Discussion Questions and answers Seminar, students presentation and discussion Other e-learning				
Methods of carrying out auditory exercises	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Other e-learning				
Methods of carrying out seminars	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Other e-learning				
Course content lectures	1.Introduction to digital cultures. , 2h, Learning outcomes:1,2,8,9 2.Technologies and globalisation , 2h, Learning outcomes:1,2,8,9 3.Developement and media representations of digital cultures (1) , 2h, Learning outcomes:1,2,3,8,9 4.Developement and media representations of digital cultures (2) , 2h, Learning outcomes:1,2,3,8,9 5.Virtual reality, 2h, Learning outcomes:4,8,9 6.Media and identity , 2h, Learning outcomes:4,7,8,9 7.Feminist critique of technologies , 2h, Learning outcomes:4,7,8,9 8.Postmodernism , 2h, Learning outcomes:4,7,8,9 9.Liquid modernity, 2h, Learning outcomes:4,7,8,9 10.Organisational paradigms in technology development (1) , 2h, Learning outcomes:5,7,8,9 11.Organisational paradigms in technology development (2) , 2h, Learning outcomes:5,7,8,9 12.Hacker ethic and the spirit of information age (1) , 2h, Learning outcomes:6,7,8,9 13.Hacker ethic and the spirit of information age (2) , 2h, Learning outcomes:6,7,8,9 14.Technology and ideology , 2h, Learning outcomes:5,6,7,8,9 15.The role of information scientists in digital cultures, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9				
Course content auditory	1.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 2.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 3.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 4.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 5.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 6.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 7.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 8.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 9.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 10.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 11.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 12.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 13.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 14.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 15.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9				
Course content seminars	1.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 2.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9				

	3.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 4.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 5.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 6.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 7.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 8.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 9.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 10.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 11.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 12.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 13.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 14.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9 15.Individual coursework , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9
Required materials	Special equipment no equipment
Exam literature	Assange, J.; Appelbaum, J.; Mller-Maguhn, A. i Zimmermann, J. (2012). Cypherpunks: Freedom and the Future of the Internet. New York: OR Books. Bauman, Z. (2011). Tekuća modernost. Zagreb: Pelago. Chomsky, N. (2003). Mediji, propaganda i sistem. Zagreb: Društvo za promicanje književnosti na novim medijima i Što čitaš?. Haraway, D. (1991). A Cyborg Manifesto. U D. Haraway, Simians, Cyborgs, and Women: The Reinvention of Nature. New York: Routledge. Himanen, P. (2002). Hakerska etika i duh informacijskog doba. Prvo izdanje. Zagreb: Jesenski i Turk. Jandrić, P. i Boras, D. (2012). Kritičko e-obrazovanje: borba za moć i značenje u umreženom društvu. Zagreb: FF Press i Tehničko veleučilište u Zagrebu. Lanier, J. (2011). You Are Not a Gadget: A Manifesto. London: Vintage. Peović Vuković, K. (2012). Mediji i kultura: ideologija medija nakon decentralizacije. Zagreb: Jesenski i Turk. Raymond, E. C. (2002). The Cathedral and the Bazaar. Shirky, C. (2011). Cognitive Surplus: Creativity and Generosity in a Connected Age. London: Penguin. Stallman, R. M. (2002). Free Software, Free Society: Selected Essays of Richard M. Stallman. Prvo izdanje. Boston: Free Software Foundation. Standing, G. (2011). The Precariat: The New Dangerous Class. London: Bloomsbury Academic. Turkle, S. (2012). Alone Together: Why We Expect More from Technology and Less from Each Other. New York: Basic Books.
Students obligations	(1)Participation (0-30 points) (2)Coursework (0-70 points) A minimum of 15 points in participation is required for successful completion of the course!
Knowledge evaluation during semester	Continuous assessment of online activity.
Knowledge evaluation after semester	Coursework
Student activities:	Aktivnost ECTS (Seminar Work) 4 (Classes attendance) 2
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Dr Petar Jandrić prof

Code WEB/ISVU	23137/130903	**ECTS**	5.0	**Academic year**	2018/2019
Name	Digital Economy				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+0+30+0) 90
Teachers	Lectures:mr.sc. Sergej Lugović MBA Seminar exercises: Dinko Horvat struč.spec.ing.techn.inf. Seminar exercises: Olivera Međugorac Seminar exercises:mag.oec Kristina Perec				
Course objectives	The aim of the course is to introduce students with the development of digital economy in the platform economy model				
Learning outcomes:	1.Analyze the underlying concepts related to the development of the platform economy. Level:6 2.Formulate the underlying factors that determine the difference between the classic linear and circular model of production. Level:6,7 3.Assess the underlying factors that affect the economic trends in the post-industrial society. Level:6,7 4.Evaluate new models and forms of economic development in the post-industrial society. Level:7 5.Compare old and new factors that determine economic development in the platform economy. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Seminar, students presentation and discussion				
Methods of carrying out seminars	Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing				
Course content lectures	1.Defining the business model of the platform economy, 3h, Learning outcomes:1 2.Defining changes within the industry under the influence of the platform economy, 3h, Learning outcomes:1 3.The process of transforming a classic linear business into a platform model. Platform model, 3h, Learning outcomes:2 4.Capitalization of a company from a platform model. The value of brands from the platform economy model, 3h, Learning outcomes:2 5.Colloquium, 3h, Learning outcomes:2 6.The platform strategy is not a software strategy, a historical review strategy, 3h, Learning outcomes:3 7.Linear business model. A platform-based business model, 3h, Learning outcomes:3 8.Platforms change industrial environments, 3h, Learning outcomes:3 9.Architecture platform. Network effect, 3h, Learning outcomes:4 10.Colloquium, 3h, Learning outcomes:4 11.Platform launch models, Learning outcomes:4 12.Metrics on platforms, Learning outcomes:5 13.Management Platform Strategies, Learning outcomes:5 14.Monetization on platforms, Learning outcomes:5 15.Colloquium, Learning outcomes:5				
Course content seminars	1.Explain and put into context the development of economic systems through history, 30h, Learning outcomes:1 2.Explain the basics of the development of different models of the economy of the platform, Learning outcomes:1 3.Determining key management strategies in the process of transforming classical linear business into a platform economy model, Learning outcomes:2 4.Determining the key factors that have affected the change of business paradigm, Learning outcomes:2 5.Determining Key Factors Affecting the Value of Brands in Platform Economics, Learning outcomes:2 6.Determining Key Factors Affecting Managerial Processes Managing the , Learning outcomes:3 7.Evaluate and analyze the underlying factors that affect the architecture of the platform, Learning outcomes:3 8.Evaluate and analyze the underlying factors that affect building network effect, Learning outcomes:3 9.Evaluate and identify the underlying factors that affect platform launch strategies, Learning outcomes:4 10.Evaluate and Identify Fundamental Factors Determining the Power of Network Effect After Launching Platforms, Learning outcomes:4 11.Evaluate the underlying metric factors in the different phase metrics on platforms, Learning outcomes:4 12.Evaluate the underlying factors in the growth and maturity of the platform, Learning outcomes:5 13.Evaluate the underlying factors of managerial strategies in the platform economy, Learning outcomes:5 14.Evaluate the underlying factors of ecosystem development as a management strategy, Learning outcomes:5 15.Determininranje temeljnih benika koji utjena na monetizacije na platformi , Learning outcomes:5				
Required materials	Basic: classroom, blackboard, chalk... Overhead projector				
Exam literature	Peitz, Martin, and Joel Waldfogel, eds. The Oxford Handbook of the Digital Economy. Oxford University Press, 2012. Varian, Hal R., and Carl Shapiro. "Information rules: a strategic guide to the network economy." Harvard Business School Press, Cambridge (1999). Benkler, Yochai. The wealth of networks: How social production transforms markets and freedom. Yale University Press, 2006. Coyle, Diane. The weightless world: strategies for managing the digital economy. Mit Press, 1999. Negroponte, Nicholas. Being digital. Random House LLC, 1996. Tapscott, Don, Alex Lowy, and David Ticoll. Blueprint to the Digital Economy: Creating Wealth in the Era of E-business. McGraw-Hill Professional, 1998.				

Students obligations	Attendance at lectures; seminar work	
Knowledge evaluation during semester	Colloquium	
Knowledge evaluation after semester	Written exam	
Student activities:	Aktivnost	ECTS
	(Classes attendance)	1
	(Seminar Work)	1
	(Constantly tested knowledge)	1
	(Research)	1
	(Written exam)	1
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	PhD Joško Lozić, 05.06.2018.	

Code WEB/ISVU	23179/130950	**ECTS**	6.0	**Academic year**	2018/2019
Name	Digital Image Processing				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+15+0+0) 120
Teachers	Lectures:1. Prof.dr.sc. Slavica Ćosović Bajić Lectures:2. Sanja Kraljević , dipl.ing., v. pred. Lectures:3. Milan Bajić Auditory exercises: Milan Bajić Auditory exercises:Prof.dr.sc. Slavica Ćosović Bajić Auditory exercises: Sanja Kraljević , dipl.ing., v. pred. Laboratory exercises: Milan Bajić Laboratory exercises: Tamara Ivelja mag. ing. geod. et. geoinf.				
Course objectives	To transfer to students the technical knowledge related to digital processing and analysis of image				
Learning outcomes:	1.ability to formulate the possibilities of digital image processing implementation . Level:6,7 2.ability to choose the area of implementation, depending on a course module chosen. Level:7 3.ability to generate new information as a result of a processing . Level:6,7 4.ability to choose open source programs and present images related to the area chosen. Level:7 5.ability to provide a critical review of the possibilities of implementation of various programs (ImageJ, IrAnalyser, FLIR Researcher, TNTmipsFree,Multispec). Level:7 6.ability to propose procedures of a quantity based digital image processing. Level:6,7 7.ability to interpret images for various engineering needs. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Simulations				
Methods of carrying out auditory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Data mining and knowledge discovery on the Web Computer simulations				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Discussion, brainstorming Workshop				
Course content lectures	1.Digital images, definitions, formats, analysis of the characteristics., 4h, Learning outcomes:1,2 2.Digital images, definitions, formats, analysis of the characteristics., 4h, Learning outcomes:1,2 3.Electro optical digital cameras and principles imaginary acquisitions. Multispectral, hyperspectral and thermal IR sensors., 4h, Learning outcomes:4 4.Principles and methods of global and local processing and image analysis. Enrichment, filtering, extraction and reduction., 4h, Learning outcomes:3,4 5.Principal component analysis. Image Compression. Basic methods of classification. The spatial transformation., 4h, Learning outcomes:3,4 6.The application of image processing in the industry, radars, surveillance systems in buildings, and in space., 4h, Learning outcomes:1,2,7 7.The application of software for processing and analyzing images., 4h, Learning outcomes:1,2,4,5 8.HTML5 image processing., 2h, Learning outcomes:6,7 9.No classes. 10.No classes. 11.No classes. 12.No classes. 13.No classes. 14.No classes. 15. No classes.				
Course content auditory	1.No classes. 2.No classes. 3.No classes. 4.No classes. 5.No classes. 6.No classes. 7.No classes. 8.Digital images, definitions, formats, analysis of the characteristics., 1h, Learning outcomes:1,2 9.Digital images, definitions, formats, analysis of the characteristics., 2h, Learning outcomes:1,2 10.Electro optical digital cameras and principles imaginary acquisitions. Multispectral, hyperspectral and thermal IR sensors., 2h, Learning outcomes:4 11. Principles and methods of global and local processing and image analysis. Enrichment, filtering, extraction and reduction., 2h, Learning outcomes:3,4 12. Principal component analysis. Image Compression. Basic methods of classification. The spatial transformation., 2h, Learning outcomes:3,4 13.The application of image processing in the industry, radars, surveillance systems in buildings, and in space., 2h, Learning outcomes:1,2,7 14.The application of software for processing and analyzing images., 2h, Learning outcomes:1,2,4,5				

	15.The application of software for processing and analyzing images., 2h, Learning outcomes:1,2,4,5
Course content laboratory	1.No classes. 2.No classes. 3.No classes. 4.No classes. 5.No classes. 6.No classes. 7.No classes. 8.Application of stereoscopic methods to achieve a virtual 3D effect., 1h, Learning outcomes:3,4,5,6,7 9.Application of stereoscopic methods to achieve a virtual 3D effect., 2h, Learning outcomes:3,4,5,6,7 10.Detection of objects smaller than the area of spatial resolution of moving by principal component analysis (PCA), 2h, Learning outcomes:3,4,6,7 11.Detection of objects smaller than the area of spatial resolution of moving by principal component analysis (PCA), 2h, Learning outcomes:3,4,5,6,7 12.Technique of producing and reproduction of infrared images., 2h, Learning outcomes:4,5,6,7 13.Technique of producing and reproduction of infrared images., 2h, Learning outcomes:4,5,6,7 14.The presentations student papers., 2h, Learning outcomes:1,2,3,4,5,7 15.The presentations student papers., 2h, Learning outcomes:1,2,3,4,5,6,7
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector Video equipment
Exam literature	1. Jain A. K. 1989. Fundamentals of Digital Image Processing, Prentence /Hall 2. T.M. Lillesand, R.W. Kiefer, Remote sensing and image interpretation, III-rd edition, John Wiley and Sons, New York, 1994. 3. J. A. Richards, J. Xiuping, Remote Sensing Digital Image Analysis, An Introduction, Berlin, 1999. 4. G. C. Holst, CCD arrays, cameras and displays, SPIE Optical Engineering Press, Bellingham, USA, 1996 5. R. Steinmetz, K. Nahrstedt - Multimedia Applications (University of Illinois, Department of computer science)
Students obligations	Done exercises, defined project / seminar task
Knowledge evaluation during semester	Redovitost pohaa#10#10#30$Seminarski rad#1#90#70$
Knowledge evaluation after semester	Seminarski rad#1#100#70$
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	01.06.2017.

Code WEB/ISVU	23143/130910	**ECTS**	6.0	**Academic year**	2018/2019
Name	Documents and Securities Design				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (30+0+0+0) 120
Teachers	Lectures:1. Aleksandra Bernašek Petrinec Lectures:Prof. dr. sc. Jana Žiljak Gršić , mag. design Auditory exercises: Aleksandra Bernašek Petrinec Auditory exercises: Ana Hoić				
Course objectives	The acquisition of new knowledge in the field of security graphics, design graphic material and visual communication. Introduction to the process of individualization and development of new solutions, which are difficult to forge..				
Learning outcomes:	1.analyzing of securities. Level:6 2.analyzing of documents. Level:6 3.distinguish between vector and raster graphics. Level:6 4.creating required securities elements. Level:6,7 5.managing of screen transformations. Level:6,7 6.creating complex graphics solutions, line graphics. Level:6,7 7.form and implement new forms of protection. Level:6 8.create different typographic solutions, the microtext typography. Level:6,7 9.Color management in a screen graphics. Level:6,7 10.constructing individualized solutions with Bezier curves. Level:6,7 11.designing an individualized graphics. Level:6				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 10h in 180h 1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 10h in 180h 1.5.OPĆI Identificirati, modelirati i rješavati inženjerske probleme.: 10h in 180h 1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 20h in 180h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 10h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 10h in 180h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 10h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 10h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 10h in 180h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 10h in 180h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 10h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 10h in 180h 2.12.OSOBNE Fleksibilnost i prilagodljivost u iznalaženju tehničkih rješenja uz neupitno poštivanje temeljnih etičkih načela, pravnih normi i pravila struke.: 10h in 180h 7.3.Dizajn Primijeniti na kreativan način alate i načela digitalnog grafičkog dizajna za širok raspon korisnika i različite sadržaje i medije.: 20h in 180h 7.4.Dizajn Procijeniti potencijalna multimedijska rješenja s obzirom na njihovu izvedivost, logičku osnovu, povijesnu perspektivu, najbolju praksu programiranje te utjecaj na okolinu.: 10h in 180h 7.5.Dizajn Koristiti širok raspon aktualnih medija, naprednih informacijskih tehnologija, tehnika, alata te audio-vizualnih komunikacijskih formata.: 10h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Demonstration Discussion The lectures with interactive computer projection. Studying the theoretical structure and application in practice.				
Methods of carrying out auditory exercises	Laboratory exercises, computer simulations Group problem solving Discussion, brainstorming				
Course content lectures	1.Introduction to security graphics, 2h, Learning outcomes:3 2.Basics of vector graphics, 2h, Learning outcomes:3 3.Analysis of the basic elements on securities and documents, 2h, Learning outcomes:1,2,4 4.Designing security graphics, 2h, Learning outcomes:6 5.Designing of documents and securities, 2h, Learning outcomes:1,2,6,7,11 6.Modern achievements in security design, 2h, Learning outcomes:7,9,10 7.Designing personalized raster solutions, 2h, Learning outcomes:5,6,7,10,11 8.The mutant screens, 2h, Learning outcomes:5,6,9 9.The line graphic on documents and securities, 2h, Learning outcomes:1,2 10.Attempts in design falsification, ways of falsifying, 2h, Learning outcomes:6 11.The microtext typography, 2h, Learning outcomes:8,10 12.Intellectual property in the field of design, 2h, Learning outcomes:5,11 13.Critical review of contemporary design solutions, 2h, Learning outcomes:1,2 14.Advantages of good visual communication, 2h, Learning outcomes:8,9,10,11 15.Advanced protection and design of securities, 2h, Learning outcomes:5,8,9,10,11				
Course content auditory	1.Designing basic elements in the security graphics (Part 1), 2h, Learning outcomes:1,2,3,4 2.Designing basic elements in the security graphics (Part 2), 2h, Learning outcomes:1,2,3,4 3.Analysis and comparison of new and old securities on the device for digital forensics, 2h, Learning outcomes:1,2 4.Creating graphics with bezier curve, 2h, Learning outcomes:10 5.Creating line graphics, 2h, Learning outcomes:6,10 6.Working with color in a line graphics, 2h, Learning outcomes:9 7.Creating monochrome screen graphics, 2h, Learning outcomes:6,9				

	8.Creating a multi-color screen graphics, 2h, Learning outcomes:6,9 9.Working with screen mutants, 2h, Learning outcomes:5,6 10.Working with microtypography, 2h, Learning outcomes:8 11.Defining the project; designing documents and securities, 2h, Learning outcomes:4,6,7,8,9,10,11 12.Presentation of plan for design development, 2h, Learning outcomes:6 13.Development, analysis and progress of the project / design, 2h, Learning outcomes:11 14.Presentation of the project, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 15.Presentation of the project, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11
Required materials	Basic: classroom, blackboard, chalk... Special purpose computer laboratory Whiteboard with markers Overhead projector Video equipment The device for digital forensics
Exam literature	1. J. Žiljak Vujić, Sigurnosna grafika, Tehničko veleučilište u Zagrebu, ISBN: 978 953 7048 33 4, 2014 2. Tomiša, Mario; Milković, Marin, "Grafički dizajn i komunikacija", , Varaždin, Veleučilište u Varaždinu, 2013. 3. Golden marketing-Tehnička knjiga, "Teorija i povijest dizajna: kritička antologija", Zagreb, Arhitektonski fakultet Sveučilišta u Zagrebu, 2012.
Students obligations	Regular attendance in both lectures and exercises, constantly tested knowledge
Knowledge evaluation during semester	Research + practical work + seminar paper
Knowledge evaluation after semester	Presenting of seminar paper, oral exam
Student activities:	Aktivnost — ECTS (Classes attendance) — 1 (Seminar Work) — 1 (Practical work) — 1 (Constantly tested knowledge) — 1 (Research) — 1 (Oral exam) — 1
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Aleksandra Bernašek Petrinec, lecturer

Code WEB/ISVU	23153/130921	**ECTS**	6.0	**Academic year**	2018/2019
Name	E-business, economics, organization and management				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+0+30+0) 120
Teachers	Lectures:1. mr.sc. Sergej Lugović MBA Seminar exercises: Dinko Horvat struč.spec.ing.techn.inf.				
Course objectives	To introduce students to the influence of new technologies on business; to teach students how to create an added value to a product by using new technologies				
Learning outcomes:	1.ability to choose the best business practice option in the Internet environment. Level:7 2.ability to measure the influence of technologies on business results. Level:7 3.ability to classify technologies relevant for running business. Level:6,7 4.ability to combine several technologies to reach a business goal. Level:6,7 5.ability to discover new areas of business excellence by using the Internet technologies. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Simulations				
Methods of carrying out seminars	Laboratory exercises, computer simulations Traditional literature analysis				
Course content lectures	1.Course introduction, 3h, Learning outcomes:1,2 2.Mutation of Capital, 3h, Learning outcomes:2,4 3.Transaction Cost Theory, 3h, Learning outcomes:2,3 4.Information Rules (Based on Carl Shapiro and Hal Varian, 3h, Learning outcomes:4 5.Virtual Value Chain, 3h, Learning outcomes:2,4 6.12 strategies for digital age, 3h, Learning outcomes:1 7.Open Innovation, 3h, Learning outcomes:1,4,5 8.Crowdsourcing and Crowdfunding, 3h, Learning outcomes:2,4,5 9.Long Tail and Freemium, 3h, Learning outcomes:2,4 10.ICT and Business Strategy, 3h, Learning outcomes:3,4 11.na 12.na 13.na 14.na 15.na				
Course content seminars	1.Seminar, 30h, Learning outcomes:1,2,3,4,5 2.na 3.na 4.na 5.na 6.na 7.na 8.na 9.na 10.na 11.na 12.na 13.na 14.na 15.na				
Required materials	Basic: classroom, blackboard, chalk... Overhead projector				
Exam literature	INFORMACIJSKOM TEHNOLOGIJOM DO POSLOVNOG USPJEHA, Spremić, Mario; Srića, Velimir				
Students obligations	70% attendance, seminar				
Knowledge evaluation during semester	Seminar				
Knowledge evaluation after semester	Seminar				
Student activities:	Aktivnost (Written exam)			ECTS 6	
Remark	This course can be used for final thesis theme				
Prerequisites:	No prerequisites.				
Proposal made by	mr.sc. Sergej Lugović MBA, 11.7.2014				

Code WEB/ISVU	23187/130959	**ECTS**	6.0	**Academic year**	2018/2019
Name	E-marketing				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:1. Vjeran Bušelić viši predavač Auditory exercises: Vjeran Bušelić viši predavač Seminar exercises: Vjeran Bušelić viši predavač				
Course objectives	To understand marketing strategy working on individual cases of marketing planning				
Learning outcomes:	1.strategic role of marketing. Level:6,7 2.product analysisy. Level:7 3.customer analysis. Level:7 4.SWOT analysis. Level:6,7 5.product promotion by use of interastive wwb 2.0 communication channels and tools. Level:6,7 6.communication plan. Level:6,7 7.pitch in front of investor. Level:7				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 10h in 180h 1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 10h in 180h 1.4.OPĆI Povezati inženjerske aktivnosti konstruiranja, proizvodnje i marketinga s potrebama korisnika proizvoda i usluge.: 40h in 180h 1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 10h in 180h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 10h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 10h in 180h 2.3.OSOBNE Etički i moralni pristup radu.: 10h in 180h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 20h in 180h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 10h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 10h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 10h in 180h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 10h in 180h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 10h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 10h in 180h 2.12.OSOBNE Fleksibilnost i prilagodljivost u iznalaženju tehničkih rješenja uz neupitno poštivanje temeljnih etičkih načela, pravnih normi i pravila struke.: 10h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Demonstration Simulations Modelling Discussion Questions and answers Homework presentation				
Methods of carrying out auditory exercises	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Discussion, brainstorming Interactive problem solving Workshop				
Methods of carrying out seminars	Traditional literature analysis Essay writing				
Course content lectures	1.Overview, experience, working pace, teme to practice and work , 2h, Learning outcomes:1,2,3,4,5,6,7 2.Marketing essentials, 2h, Learning outcomes:1 Marketing planning, 2h, Learning outcomes:1 3.Strategic marketing, 2h, Learning outcomes:1 Strategic planning, 2h, Learning outcomes:1,2,3,4,5 4.Product analysis, 2h, Learning outcomes:2 Customer analysis, 2h, Learning outcomes:3 5.SWOR analysis, 2h, Learning outcomes:2,3,4 Main marketing goal , 2h, Learning outcomes:2,3,4,5 6.Promotions, 2h, Learning outcomes:6 Internet as commnuication channel and web 2.0 tools, 2h, Learning outcomes:6 7.Marketing pitch, 4h, Learning outcomes:2,3,4,5,6,7 8.Pitching and presentation skills, 4h, Learning outcomes:1,2,3,4,5,6,7 9.No lectures 10.No lectures 11.No lectures 12.No lectures 13.No lectures 14.No lectures 15.No lectures				

Course content auditory	1.Introduction, teme to practice and work , 1h, Learning outcomes:1,2,3,4,5,6,7 2.Strategic planning, 1h, Learning outcomes:1 3.Product analysis, 2h, Learning outcomes:2 4.Customer analysis, 2h, Learning outcomes:3 5.SWOT analysis and main marketing goal, 2h, Learning outcomes:2,3,4 6.Marketing promotion, internet web 2.0 tools, 1h, Learning outcomes:5 7.Pitch planning, 2h, Learning outcomes:1,2,3,4,5,6,7 8.Pitching, 4h, Learning outcomes:1,2,3,4,5,6,7 9.No activity 10.No activity 11.No activity 12.No activity 13.No activity 14.No activity 15.No activity
Course content seminars	1.Marketing plan proposal - work in progress, 1h, Learning outcomes:1 2.Marketing plan proposal - work in progress, 2h, Learning outcomes:1 3.Marketing plan proposal - work in progress, 2h, Learning outcomes:1,2 4.Marketing plan proposal - work in progress, 2h, Learning outcomes:1,2,3 5.Marketing plan proposal - work in progress, 2h, Learning outcomes:1,2,3,4 6.Marketing plan proposal - work in progress, 2h, Learning outcomes:1,2,3,4,5 7.Marketing plan proposal - work in progress, 2h, Learning outcomes:1,2,3,4,5,6,7 8.Marketing plan proposal - work in progress, 2h, Learning outcomes:1,2,3,4,5,6 9.No activity 10.No activity 11.No activity 12.No activity 13.No activity 14.No activity 15.No activity
Required materials	Basic: classroom, blackboard, chalk... Whiteboard with markers Overhead projector Video equipment
Exam literature	Upravljanje marketingom, Phiplip Kotler Marketinški planovi i kako ih koristiti, Malcom Mc Donald Strategije marketinga, Nataša Renko Interaktivni marketing, Vlašić, Mandell, Mumel Gerilski marketing, Jay Conrad Levinson Prezentacijom do uspjeha, Jerry Weissman
Students obligations	50% attendance
Knowledge evaluation during semester	Marketing pitch - 50% Marketing plan proposal - 50%
Knowledge evaluation after semester	Oral exam
Student activities:	Aktivnost — ECTS (Written exam) — 5 (Written exam) — 1
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23184/130956	**ECTS**	6.0	**Academic year**	2018/2019
Name	Engineering and design of information systems				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+15+0+0) 120
Teachers	Lectures:1. mr.sc. Marinko Žagar viši predavač Auditory exercises: Edmond Krusha , struč.spec.ing.techn.inf., predavač Auditory exercises:mr.sc. Marinko Žagar viši predavač Laboratory exercises: Edmond Krusha , struč.spec.ing.techn.inf., predavač Laboratory exercises:mr.sc. Marinko Žagar viši predavač				
Course objectives	Acquiring of basic knowledge in the field of designing information systems.				
Learning outcomes:	1. compare methodologies for information system development). Level:6,7 2.ability to combine methods and techniques in the development of an information system. Level:6,7 3.ability to choose a development model of an information system in a specific organisation system. Level:7 4.ability to lead a project of an information system development. Level:6,7 5.ability to estimate the possibilities of using the CASE tools. Level:7				
Involvement of learning outcomes of the course in study programme:	1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 10h in 180h 1.4.OPĆI Povezati inženjerske aktivnosti konstruiranja, proizvodnje i marketinga s potrebama korisnika proizvoda i usluge.: 5h in 180h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 5h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 5h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 10h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 5h in 180h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 5h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 5h in 180h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 5h in 180h 3.3.SPECINF Povezati relevantne specifične discipline kao što su informacijsko-računarsko inženjerstvo i tehnologije u poslovnom okruženju: 5h in 180h 3.4.SPECINF Upotrijebiti stečena znanja za samostalno usvajanje novih znanja: 5h in 180h 5.1.E-poslovanje Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa u poslovnim okruženjima: 25h in 180h 5.2.E-poslovanje Primijeniti znanja, metode i alate za formalizaciju poslovnih informacijskih sustava: 20h in 180h 5.3.E-poslovanje Primijeniti formalne metode na analizu zahtjeva kod projektiranja poslovnih informacijskih sustava : 25h in 180h 5.4.E-poslovanje Upotrijebiti metode i alate u modeliranju procesa i podatka poslovnih informacijskih sustava: 30h in 180h 5.5.E-poslovanje Održavati komponente poslovnih informacijskih sustava: 15h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Simulations Modelling Discussion Questions and answers Seminar, students presentation and discussion				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Interactive problem solving Workshop				
Methods of carrying out laboratory exercises	Laboratory exercises, computer simulations Workshop				
Course content lectures	1.Introduction to unformation system design, 2h, Learning outcomes:1 Models of information system life cycle, 2h, Learning outcomes:1 2.Models of information system development, 2h, Learning outcomes:1 Business process reingineering, 2h, Learning outcomes:1,2 3.Process modelling, decomposition method , 2h, Learning outcomes:2,3,4 Data flowchart, 2h, Learning outcomes:2,3,4 4.UML - usage diagram, acitivity diagram, 2h, Learning outcomes:2,3,4 Program development: action dagram, decision trees and tables, navigation diagrams, 2h, Learning outcomes:2,3,4 5.Data modelling, entity relationship model, 2h, Learning outcomes:2,3,4 Relational data model, 2h, Learning outcomes:2,3,4 6.OO design, 2h, Learning outcomes:2,3,4 Resource modelling, 2h, Learning outcomes:2,3,4 7.Development of of a system by using the prototype method , 2h, Learning outcomes:2,3,4,5 Testing, implementation and maintenance of information systems, 2h, Learning outcomes:2,3,4,5 8.CASE tools, 2h, Learning outcomes:5 9. No lecture 10. No lecture 11. No lecture 12. No lecture, 2h 13. No lecture				

	14. No lecture 15. No lecture
Course content auditory	1.Structure of a practical work that has been done by student, 2h, Learning outcomes:1,2,4 2.Structure of a business system, organisation of the existing infiormation system, 2h, Learning outcomes:1,2,4 3.List of users requests, 2h, Learning outcomes:2,3,4 4.Document flow diagram, 2h, Learning outcomes:2,3,4,5 5.Workflow diagrams, 2h, Learning outcomes:2,3,4,5 6.Logical data model; entity descriptionm,. attributes description, class diagram, 2h, Learning outcomes:2,3,4,5 7.Database architecture and user interfaces of business applications, reports, 2h, Learning outcomes:2,3,4,5 8.Concept design of an information system, 1h, Learning outcomes:2,3,4,5 9. 10. 11. 12. 13. 14. 15.
Course content laboratory	1.Structure of a business system, organisation of the existing infiormation system, 2h, Learning outcomes:2,3,4 2.Business process model, 2h, Learning outcomes:2,3,4 3.Decomposition of business processes, 2h, Learning outcomes:2,3,4,5 4.Data flow diagrams, 2h, Learning outcomes:2,3,4,5 5.Activity diagram, 2h, Learning outcomes:2,3,4,5 6.Logical data model; entity description,. attributes description, class diagram, 2h, Learning outcomes:2,3,4,5 7.Database architecture and user interfaces of business applications, reports, 2h, Learning outcomes:2,3,4,5 8.Concept design of an information system, 1h, Learning outcomes:2,3,4,5 9. 10. 11. 12. 13. 14. 15.
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector Video equipment
Exam literature	Obavezna: 1. Prezentacije i radni materijali s predavanja i vježbi, dostupni na web-u TVZ-a 2. Klarin, Klasić: Projektiranje informacijskih sustava,Intus informatika, Zagreb, 2012 3. Klasić, Klarin: Informacijski sustavi- načela i praksa, Intus informatika, Zagreb , 2007 Additional literature: 1. J. Martin: Information Engineering II - Planning and Analisys, Prentice Hall, Englewood Cliffs, NY 1990. 2. R. Barker: CASE*METHOD Entity Relationship Modelling, Addison-Wesley Publishing Company, 1991. 3. R. Barker: CASE*METHOD Function and Process Modelling, Addison-Wesley Publishing Company, 1991 4. Van Vliet, H.: Software Engineering, John Wiley and Sons, USA, 2001
Students obligations	Make seminar- practical example (project) according to defined tasks and rules, and realize minimum 11 points of possible 20
Knowledge evaluation during semester	Theoretical part of all learning outcomes, max. 80 points Four exams each 20 points, pass >10 points Each exam will have correction. Exercises, make seminar - project - practical example according to defined rules, max. 20 points. Each student makes its own project. During semestar students present finished parts of their work (minimum one presentation on exercises)
Knowledge evaluation after semester	Prerequisite: seminar -project - min 11 points Theoretical part of all learning outcomes, max. 80 points Classical exa.m 80 points Pass (theory) Classical exam >40 points Summary, max. 100 points. 91 100 = 5 81 90 = 4 71 80 = 3 61 70 = 2 60 and less, not enough
Student activities:	Aktivnost — ECTS (Written exam) — 1 (Oral exam) — 1 (Seminar Work) — 1 (Research) — 1 (Classes attendance) — 1 (Practical work) — 1
Remark	This course can be used for final thesis theme

Prerequisites:	No prerequisites.

Code WEB/ISVU	23182/130954	**ECTS**	6.0	**Academic year**	2018/2019
Name	ERP and CRM business information systems				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+15+15+0) 120
Teachers	Lectures:1. mr.sc. Marinko Žagar viši predavač Laboratory exercises:prof. Marta Alić Laboratory exercises:mr.sc. Marinko Žagar viši predavač				
Course objectives	To introduce students to the roles of the ERP and CM systems in companies, the ways of their implementation and practical usage				
Learning outcomes:	1.ability to standardise the ERP and CRM systems. Level:6,7 2.Present organizational structure of the company. Level:6,7 3.ability to present the implementation on trade companies. Level:6,7 4.ability to formulate/to design the architecture of ERP systems. Level:6,7 5.ability to develop a methodology of the ERP and CRM systems implementation. Level:6,7 6.ability to organize company . Level:6,7 7.lead a project of implementation ERP/CRM. Level:6,7 8.ability to formulate/to design a project structure different in regard with other information projects. Level:6,7 9.ability to standardise the change management. Level:6,7				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 10h in 180h 1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 10h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 10h in 180h 2.3.OSOBNE Etički i moralni pristup radu.: 10h in 180h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 10h in 180h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 5h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 5h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 5h in 180h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 10h in 180h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 5h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 5h in 180h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 10h in 180h 3.3.SPECINF Povezati relevantne specifične discipline kao što su informacijsko-računarsko inženjerstvo i tehnologije u poslovnom okruženju: 10h in 180h 3.4.SPECINF Upotrijebiti stečena znanja za samostalno usvajanje novih znanja: 10h in 180h 4.3.E-zdravstvo Primijeniti formalne metode na analizu zahtjeva kod projektiranja komponenti zdravstvenih informacijskih sustava: 5h in 180h 5.1.E-poslovanje Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa u poslovnim okruženjima: 10h in 180h 5.2.E-poslovanje Primijeniti znanja, metode i alate za formalizaciju poslovnih informacijskih sustava: 5h in 180h 5.3.E-poslovanje Primijeniti formalne metode na analizu zahtjeva kod projektiranja poslovnih informacijskih sustava : 5h in 180h 5.4.E-poslovanje Upotrijebiti metode i alate u modeliranju procesa i podatka poslovnih informacijskih sustava: 5h in 180h 5.5.E-poslovanje Održavati komponente poslovnih informacijskih sustava: 5h in 180h 6.1.E-uprava Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i procesa u okruženjima javne uprave: 5h in 180h 6.3.E-uprava Uspostaviti kolaborativne tehnologije uredskog poslovanja u podsustavima javne uprave: 5h in 180h 6.4.E-uprava Primijeniti formalne metode na analizu zahtjeva kod projektiranja komponenti informacijskih sustava i podsustava uprave: 5h in 180h 6.5.Dizajn Identificirati i implementirati optimalne tehnike komuniciranja složenim informacijama na WEB-u.: 5h in 180h 7.5.Dizajn Koristiti širok raspon aktualnih medija, naprednih informacijskih tehnologija, tehnika, alata te audio-vizualnih komunikacijskih formata.: 5h in 180h 8.5.PROGING Funkcionirati u timskom i multidisciplinarnom okruženju.: 5h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Demonstration Simulations Discussion Questions and answers				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Essay writing Discussion, brainstorming Workshop Other Individual work assignment				

Methods of carrying out seminars	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Group problem solving Essay writing Other Independent or group work on the prepared model in the cloud
Course content lectures	1.Introduction, 2h, Learning outcomes:1 History of development ERP and CRM, 2h, Learning outcomes:1 2.The importance and role ERP, 2h, Learning outcomes:1 The importance and role CRM, 2h, Learning outcomes:1 3.Organizational structure of the company, 2h, Learning outcomes:2 Business processes in the company, 2h, Learning outcomes:2,3 4.Reasons for implementation ERP, 2h, Learning outcomes:2 Reasons for implementation CRM, 2h, Learning outcomes:2 5.The role of ERP systems in connecting business processes, 2h, Learning outcomes:2,3,6 The role of CRM systems in connecting business processes, 2h, Learning outcomes:3,5 6.Process management in ERP systems, 2h, Learning outcomes:2,4 Process management in CRM systems, 2h, Learning outcomes:2,4 7.The architecture of the ERP system, 1h, Learning outcomes:2,4 The architecture of the CRM system, 1h, Learning outcomes:2,4 ERP implementation methodology, 1h, Learning outcomes:2,4 CRM implementation methodology, 1h, Learning outcomes:2,4 8.Project management for CRM implementation, 1h, Learning outcomes:4 Scope definition, milestones, change management, 1h, Learning outcomes:4,7 9.No lecture. 10.No lecture. 11.No lecture. No lecture, Learning outcomes:3 12.Nema predavanja 13.Nema predavanja 14.No lecture. 15.No lecture.
Course content laboratory	1.The architecture of the ERP system, 2h, Learning outcomes:4 The architecture of the CRM system, 2h, Learning outcomes:4 2.Functionality of the ERP system, 3h, Learning outcomes:1,4 Functionality of the CRM system, 3h, Learning outcomes:1,4 3.ERP implementation methodology, 1h, Learning outcomes:5,7 CRM implementation methodology, 1h, Learning outcomes:5,7 4.Project management, 3h, Learning outcomes:7,8,9 5.No exercise 6.No exercise 7.No exercise 8.No exercise 9.No exercise 10.Nema nastave 11.No exercise 12.No exercise 13.Nema nastave 14.No exercise 15.Nema nastave
Course content seminars	1.Setup Company model, 2h, Learning outcomes:2 Setup sales teams, 2h, Learning outcomes:2 2.Preparation and launch marketing campaigns, 2h, Learning outcomes:2 Preparation and development of the sales funnel, 2h, Learning outcomes:2 3.Reports preparation, 2h, Learning outcomes:2,3 Presentation of tasks and assign tasks, 2h, Learning outcomes:2,3 4.Presentation solutions, 3h, Learning outcomes:2,3 5.Nema nastave 6.No exercise 7.No exercise 8.No exercise 9.No exercise 10.No exercisee 11.No exercise 12.No exercise 13.No exercise 14.No exercise 15.No exercise
Required materials	Special purpose laboratory Overhead projector Independent or group work on the prepared model in the cloud
Exam literature	1. Materijali sa predavanja, prezentacije 2. E. Callaway: Enterprise Resource Planning - Integrating Applications and Business Processes 3. Across the Enterprise, Computer Technology Research, 1999. 4. C. A. Ptak: ERP - Tools, Techniques, and Applications for Integrating the Supply Chain, The St. Lucie Press, 2000.

	5. Bitrix24 CRM korisnička dokumentacija	
Students obligations	maximum of 3 absences from exercises	
Knowledge evaluation during semester	Kolokvij, teorijska pitanja#2#100#100$	
Knowledge evaluation after semester	Essay writing Final exam	
Student activities:	Aktivnost	ECTS
	(Written exam)	1
	(Oral exam)	1
	(Project)	1
	(Seminar Work)	1
	(Research)	1
	(Practical work)	1
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	mr.sc. Marinko Žagar 7.3.2014.	

Code WEB/ISVU	23203/130978	**ECTS**	24.0	**Academic year**	2018/2019
Name	Graduation Thesis				
Status	4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				60+360 (360+0+0+0) 300
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole				
Course objectives	To teach students how to use the acquired knowledge in solving engineering tasks				
Learning outcomes:	1.ability to analyse a subject related to the field of expertise. Level:6 2.ability to prepare the sources (literature, etc.). Level:6,7 3.ability to establish the differences between and similarities with a current solution. Level:6 4.ability to provide one's own solution. Level:6,7 5.ability to formulate conclusions. Level:6,7 6.ability to format task based documents . Level:6 7.ability to prepare a presentation of a work related to the field of expertise. Level:6,7 8.ability to present a work related to the field of expertise to the audience. Level:6,7				
Methods of carrying out lectures	Other				
Methods of carrying out auditory exercises	Other				
Course content lectures	1.Analysis of literature, 10h, Learning outcomes:1,2 2.The research achievements in a given area, 10h, Learning outcomes:3,4 3.Processing of relevant questions, 10h, Learning outcomes:3,4 4.Working out problems on a practical example., 10h, Learning outcomes:3 5.Presentation of results, 10h, Learning outcomes:4 6.Conclusions, 10h, Learning outcomes:5 7. 8. 9. 10. 11. 12. 13. 14. 15.				
Course content auditory	1.Writing a thesis., 240h, Learning outcomes:6 2.Preparing for the submission of work., 60h, Learning outcomes:6 3.Corrections after reading by povjerenstva.Priprema presentations., 60h, Learning outcomes:7,8 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.				
Required materials	Special equipment				
Exam literature	Prema dogovoru sa mentorom				
Students obligations	maximum of 3 absences from exercises				
Knowledge evaluation during semester	None				
Knowledge evaluation after semester	Public defending of Master thesis before a committee				
Student activities:	Aktivnost (Practical work)			ECTS 24	
Remark	This course can not be used for final thesis theme				
Prerequisites:	No prerequisites.				
Proposal made by	Miroslav Slamić, 26.4.2014.				

Code WEB/ISVU	23188/130963	**ECTS**	6.0	**Academic year**	2018/2019
Name	Health Care Information Systems life cycle				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole Lectures:dr.sc. Miroslav Mađarić dipl.inž.el. Laboratory exercises:dr.sc. Miroslav Mađarić dipl.inž.el. Laboratory exercises:Prof. dr. sc. Miroslav Slamić profesor visoke škole				
Course objectives	The aim of the course is to teach students the entire process of the implementation of information systems in the health care environment through several stages of planning and definition of the information system until retirement. In short, students need to learn a life cycle of IS development in healthcare.				
Learning outcomes:	1.to create a plan of elements of lifecycle of information systems in health care. Level:6,7 2.to formulate / to form requirements for the the implementation of information system in the health care environment. Level:6,7 3.to evaluate the suggested solutions in the healthcare information system. Level:7 4.choose the hardware platform and define the management plan and upgrade hardware platforms. Level:7 5.devise a plan for maintenance of the information system in the health care environment. Level:6,7 6.to develop standards for testing software applications of information system. Level:6,7 7.design a plan for the retirement of information system. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers				
Methods of carrying out laboratory exercises	Laboratory exercises, computer simulations Traditional literature analysis Data mining and knowledge discovery on the Web Discussion, brainstorming Mind mapping				
Course content lectures	1.Planning and lifecycle management of the information systems in health care., 2h, Learning outcomes:1 2.Defining requirements for supply and installation of the information system which includes the definition of all processes in the health care environment as flow and storage of data during the implementation process. Defining a variety of hardware platforms, assessing of life cycle IS and definition of warranty terms. Defining a way of implementation of technology solutions (eg. phased steps implementation of server platforms according to the needs ensures procurement of latest technologies). , 4h, Learning outcomes:2 3.Launch of the procurement process and the introduction of an information system through evaluation of different solutions such as system developed exactly according to user specifications or developed system available on the market (of the shelf)., 4h, Learning outcomes:3 4.Methods of evaluation of the solutions and risk assessment. The development of standards for software testing. , 4h, Learning outcomes:3,4 5.The steps of development and / or implementation IS together with the supplier / manufacturer. User education system. Defining models of infrastructure management and insurance flexibility of using IS. , 4h, Learning outcomes:3,4,5 6.Methodology integration technology (hardware and software) in the system and manage upgrades and costs to ensure business continuity , 4h, Learning outcomes:4,5 7.System Maintenance including upgrade / replacement technologies, debugging software and hardware malfunction. , 4h, Learning outcomes:5,6 8.Retirement Information System including data migration and systems, updating data warehouses, uninstall software and hardware. , 4h, Learning outcomes:7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content laboratory	1.Development the plan of the IS lifecycle management., 4h, Learning outcomes:1 2.Process modeling. Defining data model. Defining the architecture of IS., 4h, Learning outcomes:2 3.Process modeling. Defining data model. Defining the architecture of IS., 4h, Learning outcomes:2 4.Defining requirements on the hardware platform., 4h, Learning outcomes:2 5.Defining requirements for software platform., 4h, Learning outcomes:2,3 6.Making basic elements of requests to initiate the procurement IS., 4h, Learning outcomes:3,4,5 7.Creating a training plan, maintenance and system upgrades., 4h, Learning outcomes:4,5,6 8.Creating a retirement plan IS. Creating a plan to build a data warehouse., 4h, Learning outcomes:7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture.				

	15.No lecture.	
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Tools	
Exam literature	Nastavni materijali - prezentacije na moj.tvz.hr. Studije slučaja. (moj.tvz.hr)	
Students obligations	Attendance of 70% of lectures and of 80% of exercises.	
Knowledge evaluation during semester	No mid-term exam.	
Knowledge evaluation after semester	Written exam (30% points). Term paper (50% points) An oral exam (20% points)	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	

Code WEB/ISVU	23160/130929	**ECTS**	6.0	**Academic year**	2018/2019
Name	Health Information Subsystems				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole Lectures:dr.sc. Miroslav Mađarić dipl.inž.el. Laboratory exercises: Krešimir Majdenić				
Course objectives	Students will become familiar with a wide range of service ("ancillary") systems in health care, which allow the operation of laboratories (LIS), Radiology (RIS and PACS), pharmacy, transfusion, food and so on. The emphasis is on integration, since it can not possibly work without being connected to each other for the purpose of functional interoperability.				
Learning outcomes:	1.to classifie information sub-systems in health care with respect to the purpose, role and level of integration with other information systems. Level:6,7 2.to formulate requirements for upgrading and improving information subsystems in health. Level:6 3.to integrate the basic components of information subsystems in the work processes of the health system. Level:6,7 4.planning computer equipment to support the information subsystems. Level:6,7 5.to prepare a variety of reports from information subsystems. Level:6,7 6.to plan system of maintenance information subsystems in health. Level:6,7 7.to choose in the procurement process of IT equipment for the purposes of information subsystems. Level:7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Demonstration Discussion				
Methods of carrying out laboratory exercises	Laboratory exercises, computer simulations Data mining and knowledge discovery on the Web Discussion, brainstorming Computer simulations Workshop				
Course content lectures	1.Introductory lecture - a wide picture on the computer ancillary systems in health care as an extra service systems (LIS, RIS / PACS, pharmacy, transfusion, nutrition). Functionl integration of the information subsystems and interoperability., 4h, Learning outcomes:1 2.Processes in medical biochemistry laboratory systems - the big picture on legislation, processes and procedures in medical biochemical activities. The organization and management of medical biochemical laboratory, ethics and norms., 4h, Learning outcomes:1,2 3.Management of laboratory equipment. Standard procedures and processes. Safety measures and security. Medical Biochemistry laboratory systems in hospitals and primary health care., 4h, Learning outcomes:2,3 4.Laboratory Information System (LIS) - The importance of the laboratory information system to support the procedures and processes of medical biochemical laboratories and microbiology laboratories. Components of the LIS. Architecture of the LIS. , 4h, Learning outcomes:3,4 5.Supporting processes and procedures (process automation, reports on the results of searches, statistical reports, quality control). Standards and norms. Connect of the LIS with HIS or other subsystems. Intreface protocols. Interoperability, scalability and security of the LIS. Interfaces of the laboratory instruments and devices. Backup policies for data storage., 2h, Learning outcomes:4,5 6.Radiology information subsystems RIS / PACS - Processes in the radiological treatment of the patient. Architecture of RIS subsystem. Information processes in the RIS from the registration of the patient, treatment and reports on the results of processing radiology images. Workflow in radiology departments. Management of the modalities and materials. Storage of image material. Connect with BIS and a PACS (standards and protocols). PACS as a system for archiving image radiological materials with various radiological modalities. Architecture PACS. Integration with other subsystems. Communication with PACS. , 6h, Learning outcomes:5,6 7.Inforamtion subsystems of pharmacy, nutrition and transfusion., 2h, Learning outcomes:4,5,6,7 8.The other , 4h, Learning outcomes:4,5,6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content laboratory	1.Modeling of the general process and data flow in health information subsystems., 4h, Learning outcomes:1,2 2.Process modeling and data flow in biochemical laboratory systems., 4h, Learning outcomes:2,3 3.Working in testing environment of the laboratory information subsystem (LIS)., 4h, Learning outcomes:3,4 4.Work in the test environment of the laboratory and hospital information subsystem (LIS-BIS)., 4h, Learning outcomes:4,5 5.Operation in test environment of radiology information subsystem (RIS)., 4h, Learning outcomes:4,5 6.Operation in test environment of radiology information subsystem (PACS)., 4h, Learning outcomes:3,4,5 7.Working in testing environment other information subsystems (pharmacy, transfusion, nutrition)., 4h, Learning outcomes:3,4,5,6 8.Detailed analysis of the architecture of one of the information subsystems., 4h, Learning outcomes:2,3,4,5,6,7 9.No exercise				

	10.No exercise 11.No exercise 12.No exercise 13.No exercise 14.No exercise 15.No exercise
Required materials	Special purpose laboratory Special purpose computer laboratory Whiteboard with markers Overhead projector Special equipment TESTING ICT EQUIPMENT OF LIS, RIS and PACS system.
Exam literature	1. Grupa autora, Nastavni materijali - prezentacije iz područja informacijskih podsustav u zdravstvu (moj.tvz.hr). 2. Korisničke i tehničke upute za LIS, RIS i PACS.
Students obligations	Attendance of 70% of lectures and of 80% of exercises.
Knowledge evaluation during semester	No mid-term exam.
Knowledge evaluation after semester	Written exam (30% points). Term paper (50% points) An oral exam (20% points)
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23159/130928	**ECTS**	6.0	**Academic year**	2018/2019
Name	Health Information Systems				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole Lectures:dr.sc. Miroslav Mađarić dipl.inž.el. Laboratory exercises: Denis Jager Laboratory exercises: Biserka Klarić				
Course objectives	This course provides the basics of health information systems.				
Learning outcomes:	1.To link definitions, terminology and basic concepts of health information systems and understand the history of health information systems.. Level:6,7 2.Critically assess the effective use of information technology and medical terms related to the electronic medical record.. Level:7 3.Identify the basic structure of health information systems.. Level:6 4.To link and understand the specifics of health information and knows the basics of health information model.. Level:6,7 5.Critically assess typical applications of e-Health and its benefits: hospital information systems, electronic medical records and electronic patient records, e-prescriptions, telemedicine.. Level:7 6.To develop content and the use of electronic patient records and personal health records and connect them with key information systems architectures in health care with respect to interoperability.. Level:6,7 7.Compile a concept of basic elements for the design and implementation of information systems in e-Health and resolve barriers to adoption of these systems in eHealth.. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Discussion, brainstorming Workshop				
Course content lectures	1.The administrative information systems in health care. , 2h, Learning outcomes:1,2 2.Business information systems in health care., 2h, Learning outcomes:1,2 3.Information systems in primary health care. Information systems in telemedicine. , 4h, Learning outcomes:1,2,3 4.Central Information System., 4h, Learning outcomes:1,2,3 5.Hospital Information Systems., 4h, Learning outcomes:3,4,5 6.Hospital Information Systems., 4h, Learning outcomes:2,3,4,5,6 7.The integration of information systems in health care. The use of information systems in health care., 6h, Learning outcomes:5,6 8.The use of information systems for business intelligence in the health system., 4h, Learning outcomes:5,6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content laboratory	1.Working in an environment of administrative and business information systems., 4h, Learning outcomes:1,2 2.Working in an environment of primary care information systems and telemedicine., 4h, Learning outcomes:1,2,3 3.Working in an test environment of central information system., 4h, Learning outcomes:1,2,3 4.Working in an test environment of hospital information system., 4h, Learning outcomes:3,4,5 5.Working in an test environment of hospital information system., 4h, Learning outcomes:3,4,5 6.The use of information systems in real-world environments., 4h, Learning outcomes:4,5,6 7.The use of information systems in real-world environments., 2h, Learning outcomes:4,5,6 8.Data analysis using business intelligence information systems., 4h, Learning outcomes:3,4,5,6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Required materials	Special purpose laboratory General purpose computer laboratory Special purpose computer laboratory Whiteboard with markers Overhead projector				

Exam literature	1. Grupa autora: Nastavni materijali - prezentacije na moj.tvz.hr	
Students obligations	Attendance of 70% of the lectures and 80% exercises	
Knowledge evaluation during semester	No mid-term exam.	
Knowledge evaluation after semester	Evaluation of the written part of the seminar paper (70% points). Presentation of seminar paper (30% points).	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	

Code WEB/ISVU	23154/130922	**ECTS**	6.0	**Academic year**	2018/2019
Name	Information security				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:mr.sc. Marinko Žagar viši predavač Auditory exercises: Domagoj Tuličić Auditory exercises:mr.sc. Marinko Žagar viši predavač Seminar exercises: Domagoj Tuličić Seminar exercises:mr.sc. Marinko Žagar viši predavač				
Course objectives	Introducing students with concepts, standards, risks and issues of Information security.				
Learning outcomes:	1.Identify the legal basis of electronic business. Level:6 2.abbility to present security concept. Level:6,7 3.critically assess implemented security policies. Level:7 4.abbility to present security standards and policies . Level:6,7 5.to assess security threats and risks. Level:6,7 6.to analyze malware and malware protection. Level:6 7.to assess cloud application security. Level:6,7 8.assess implemented security policies. Level:7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers .				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Workshop				
Methods of carrying out seminars	Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Workshop				
Course content lectures	1.Basic terms and concepts, 2h, Learning outcomes:4 Cybernetic Safety, 2h, Learning outcomes:6 Threats to information systems, 1h, Learning outcomes:4,5,6 Privacy and identity theft, 1h, Learning outcomes:4,8 2.Legislative framework for cyber security and electronic business, 2h, Learning outcomes:7,8 3.The principles of information systems security, 2h, Learning outcomes:2,5 4.Standards and security policy, 2h, Learning outcomes:3 Implementation of information security management system, 2h, Learning outcomes:1,3,7 Information security policy, 2h, Learning outcomes:1,3 5.Malware and malware protection, 2h, Learning outcomes:6 6.Network and wireless network security, 2h, Learning outcomes:5 7.WEB application security, 2h, Learning outcomes:5 8.Cloud security, 2h, Learning outcomes:5,8 9.Public Key Infrastructure, 2h, Learning outcomes:2 10.Cybercrime, 2h, Learning outcomes:4 11.Digital Forensics and Anti-Forensics, 2h, Learning outcomes:4,5 12.Nema predavanja 13.Nema predavanja 14.Nema predavanja 15.Nema predavanja				
Course content auditory	1.Standards and policy of information security, 2h, Learning outcomes:2 2.Informatin security management system (ISMS), 2h, Learning outcomes:2,3 3.ISO 27001 Rev. A, 2h, Learning outcomes:2,3 4.Security policy, 2h, Learning outcomes:2,3 5.Organization of information security, 2h, Learning outcomes:2,3 6.All other measures of information security, 2h, Learning outcomes:2,3 7.Public key infrastructure, 2h, Learning outcomes:6 8.Web application security, 1h, Learning outcomes:5 9.Nema vjebi 10.Nema vjebi 11.Nema vjebi 12.Nema vjebi 13.Nema vjebi 14.Nema vjebi 15.Nema vjebi				

Course content seminars	1.Nema vjebi 2.Nema vjebi 3.Nema vjebi 4.Security policies development, 3h 5.Security policies development, 3h, Learning outcomes:2,3 6.Organization of information security, 3h, Learning outcomes:2,3 7.Managing security measures, 3h, Learning outcomes:3 8.Analysis of web security, 3h, Learning outcomes:5,6 9.Nema vjebi 10.Nema vjebi 11.Nema vjebi 12.Nema vjebi 13.Nema vjebi 14.Nema vjebi 15.Nema vjebi
Required materials	Basic: classroom, blackboard, chalk... Whiteboard with markers Overhead projector
Exam literature	1. Prezentacije sa predavanja 2. Norma ISO/IEC 17799, 27001 3. Donald E. Eastlake, Kitty Niles,; Secure XML: The New Syntax for Signatures and Encryption, Addison-Wesley Pub Co; 1st edition (July 19, 2002) 4. Zakon o elektroničkom potpisu, elektroničkoj trgovini, zaštiti osobnih podataka, i sl. 6. Luke Harding; E.Snovden: Dosijei, EPH Media 2014. 7. A.Conry-Murray, V.Weafer; Sigurni na internetu; MIŠ 2005.
Students obligations	Maximum of 3 absence from excercises.
Knowledge evaluation during semester	Kolokvij, teoretska pitanja Kontrolni ispit
Knowledge evaluation after semester	Essay writing Final exam
Student activities:	Aktivnost — ECTS (Written exam) — 1 (Oral exam) — 1 (Activity in class) — 1 (Seminar Work) — 1 (Practical work) — 1 (Constantly tested knowledge) — 1
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	mr.sc. Marinko Žagar viši predavač

Code WEB/ISVU	23178/130949	**ECTS**	6.0	**Academic year**	2018/2019
Name	Innovation Engineering				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures: Ana Hoić Lectures:Prof. dr. sc. Jana Žiljak Gršić , mag. design Auditory exercises: Ana Hoić Seminar exercises: Ana Hoić				
Course objectives	Gaining of basic knowledge in the field of innovation and knowledge of their role and impact on business processes. Creating improved idea, procedure, process that brings new benefits or quality of the application. Gaining knowledge about the process of patenting innovations.				
Learning outcomes:	1.ability to formulate the area of a specific task. Level:6,7 2.ability to highlight innovations with competitive advantages. Level:7 3.ability to plan an innovation concept design . Level:6,7 4.ability to design a proposal for an innovation. Level:6,7 5. designing an innovative solution. Level:6 6.devise (suggestion / solution) proposed solution. Level:6,7 7.ability to write documentation for the innovation proposal (diagram, graph, map). Level:6,7 8.ability to present the innovation project. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Discussion Questions and answers Seminar, students presentation and discussion				
Methods of carrying out auditory exercises	Laboratory exercises, computer simulations Group problem solving Discussion, brainstorming Interactive problem solving Workshop				
Methods of carrying out seminars	Discussion, brainstorming Computer simulations Interactive problem solving Workshop				
Course content lectures	1.Introduction to innovation and their impact on improvement, 2h, Learning outcomes:2,3,4 2.Recognizing the need for innovation, 2h, Learning outcomes:2 3.The development process of innovation: research, selection, implementation, 2h, Learning outcomes:3,4,5 4.Planning and adjustment to system in which innovation will find application, 2h, Learning outcomes:3,4 5.Establishment of resources, 2h, Learning outcomes:6 6.Patents, 2h, Learning outcomes:1,7,8 7.Intellectual property protection, legislation and international agreements, 2h, Learning outcomes:1,7,8 8.Application and implementation of innovation, 2h, Learning outcomes:3,4 9.Progress of existing applications, 2h, Learning outcomes:5 10.The sustainability of the project, the long-term usability of innovations, 2h, Learning outcomes:6,8 11.Innovations that changed the world, 2h, Learning outcomes:2,5 12.Croatian Innovators, 2h, Learning outcomes:2,5 13.Infraredesign, 2h, Learning outcomes:5 14.Failed innovation, 2h, Learning outcomes:2 15.Colloquium, 2h, Learning outcomes:1,2,3,4,5,6,7,8				
Course content auditory	1.Field work: Innovation and Development Centre - company, 3h, Learning outcomes:5 2.Analysis of an innovation process, 1h, Learning outcomes:1,2 3.Marketing research, 1h, Learning outcomes:2 4.How could student protect his work and harmonized it up with the market and the law, 1h, Learning outcomes:3,6,7 5.Implementation of the conceptual design, 1h, Learning outcomes:3,4,5,8 6.Application of innovation, 1h, Learning outcomes:6 7.Sustainability of the project, 1h, Learning outcomes:3,6 8.Field work: Innovation and Development Centre - institutions, 2h, Learning outcomes:5				

	9.Defining seminar topics, ideas and questions, 1h, Learning outcomes:1,2,3,4,5,6,7,8 10.Analysis of the ideas, 1h, Learning outcomes:6,7 11.Papers presentation , 1h, Learning outcomes:8 12.Papers presentation , 1h, Learning outcomes:8 13.Implementation stage 14.No exercises 15.No exercises
Course content seminars	1.Innovations and innovative solutions, 1h, Learning outcomes:1 2. Inspiration in the world of innovations, 1h, Learning outcomes:1,2 3.Analysis existing innovative solutions, 1h, Learning outcomes:2,3 4.The innovation process, 1h, Learning outcomes:2,3,4 5.Development an innovation plan , 1h, Learning outcomes:3,4 6.Plan harmonization, 1h, Learning outcomes:4 7.Research stage, 1h, Learning outcomes:4,5 8.Selection stage, 1h, Learning outcomes:6,7 9.Analysis an applicability of ideas, 1h, Learning outcomes:2,3 10.Protection of an innovation, 1h, Learning outcomes:2 11.Adaptation to the real conditions, 1h, Learning outcomes:3,5 12.Implementation stage, 1h, Learning outcomes:7 13.Seminar presentation, 1h, Learning outcomes:7,8 14.Colloquium, 2h, Learning outcomes:1,2,3,4,5,6,7,8 15.No exercises
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector
Exam literature	1. J. Žiljak Vujić: Sigurnosna grafika, Tehničko veleučilište u Zagrebu, ISBN: 978 953 7048 33 4 2. Juraj Božićević: Innovations culture and technological development, Zagreb, 2009 2. Steve Jobs: Secrets of his innovations/Carmine Gallo, Zagreb, 2011 3. Facebook Effect: the true story about Mark Zuckerberg and the fastest growing company in the world/David Kirkpatrick; Zagreb, 2012
Students obligations	Attending lectures and exercises, making of presentation and desing innovative assignment. Maximum of 3 absences from exercises
Knowledge evaluation during semester	Defined assignment Oral exam
Knowledge evaluation after semester	Oral exam Practical work
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
ISVU equivalents:	171893;
Proposal made by	Aleksandra Bernašek, lecturer

Code WEB/ISVU	23180/130951	**ECTS**	6.0	**Academic year**	2018/2019
Name	Instructional Design				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:1. izv. prof. dr. sc. Petar Jandrić prof. v. šk. Auditory exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk. Seminar exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk.				
Course objectives	This course prepares students for independent development of digital learning materials				
Learning outcomes:	1.Create digital learning material. Level:6,7 2.Plan development of digital learning material . Level:6,7 3.Analyse requirements for digital learning material . Level:6 4.Formulate / define e-learning continuum . Level:6,7 5.Choose an appropriate pedagogical approach . Level:7 6.Create learning outcomes . Level:6,7 7.Construct digital assessment . Level:6,7 8.Choose an appropriate technology for digital learning material . Level:7 9.Evaluate success of digital learning material . Level:7 10.Plan sustainable development of digital learning material . Level:6,7 11.Konstruct digital learning material . Level:6,7 12.Present own project at an appropriate level. Level:6,7				
Methods of carrying out lectures	Guest lecturer Case studies Demonstration Simulations Modelling Discussion Questions and answers Seminar, students presentation and discussion e-learning				
Methods of carrying out auditory exercises	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Mind mapping Computer simulations Interactive problem solving Other e-learning				
Methods of carrying out seminars	Essay writing e-learning				
Course content lectures	1.Introduction to instructional design , 2h, Learning outcomes:1,2,3,11,12 2.Planning and methodology of instructional design , 2h, Learning outcomes:1,2,3,11,12 3.Requirements analysis , 2h, Learning outcomes:1,2,3,11,12 4.Context analysis , 2h, Learning outcomes:1,2,3,11,12 5.E-learning continuum , 2h, Learning outcomes:4,11,12 6.Online pedagogies (1) , 2h, Learning outcomes:5,6,7,11,12 7.Online pedagogies (1) , 2h, Learning outcomes:5,6,7,11,12 8.Learning outcomes , 2h, Learning outcomes:6,11,12 9.Digital assessment (1) , 2h, Learning outcomes:7,11,12 10.Digital assessment (2) , 2h, Learning outcomes:7,8,11,12 11.Choosing technology for digital education (1) , 2h, Learning outcomes:8,11,12 12.Choosing technology for digital education (2) , 2h, Learning outcomes:8,11,12 13.Evaluation of digital education (1) , 2h, Learning outcomes:9,11,12 14.Evaluation of digital education (2) , 2h, Learning outcomes:9,11,12 15.Sustainability and sustainable development , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12				
Course content auditory	1.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 2.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 3.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 4.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 5.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 6.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 7.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 8.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 9.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 10.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 11.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 12.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 13.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 14.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 15.Individual project , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11				

Course content seminars	1.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 2.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 3.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 4.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 5.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 6.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 7.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 8.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11,12 9.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 10.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 11.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 12.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 13.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 14.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11 15.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10,11
Required materials	Special equipment no equipment
Exam literature	Anderson, T. i Elloumi, F. (2008). Theory and Practice of Online Learning. Drugo izdanje. Canada, Athabasca: Athabasca University. Carr, N. (2011). The Shallows: What the Internet Is Doing to Our Brains. New York: W. W. Norton Company, Inc Ćukušić, M. i Jadrić, M. (2012). E-učenje: koncept i primjena. Zagreb: Školska knjiga. Leonard, P. i McLaren, P. (1993). Paulo Freire: a critical encounter. London: Routledge. Levinson, P. (2001). Digitalni McLuhan: vodič za novo doba. Zagreb: Izvori. Perica, I. (2013). Političko #8596; pedagoško: Janusova lica pedagogije. Zagreb: Blaberon. Ovisno o tehnologiji korištenoj u individualnom projektu, popis literature može sadržavati različite knjige, priručnike i članke.
Students obligations	(1)Participation (0-30 points) (2)Project (0-35 points) (2)Coursework (0-35 points) A minimum of 15 points in participation is required for successful completion of the course!
Knowledge evaluation during semester	Continuous assessment of online activity.
Knowledge evaluation after semester	Project + coursework
Student activities:	Aktivnost — ECTS (Classes attendance) — 2 (Seminar Work) — 4
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Dr Petar Jandrić prof

Code WEB/ISVU	23186/130958	**ECTS**	6.0	**Academic year**	2018/2019
Name	Internet databases (NoSQL database in e-business)				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Goran Klepac Prof. v.š. Laboratory exercises:Prof. dr. sc. Goran Klepac Prof. v.š.				
Course objectives	introduce the students with nonrelational databases and their implementation in business systems				
Learning outcomes:	1.Creating programming solution database in Internet environment . Level:6,7 2.Developing solution in Internet environment for database. Level:6,7 3.Built solution in MySQL. Level:6,7 4.Cretaing solution in PHP. Level:6,7 5.eng: manage nonrelational database. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Demonstration Discussion Questions and answers Seminar, students presentation and discussion				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Group problem solving Discussion, brainstorming Interactive problem solving				
Course content lectures	1.Introduction into Internet databases , 2h, Learning outcomes:1,5 Introduction into Lambda architecture NOSQL approach, 2h, Learning outcomes:1,4 Lambda architecture Layers, 2h, Learning outcomes:1,3 Batch Layer, Serving Layer, Speed Layer, 2h, Learning outcomes:1,3 2.Introduction into dynamic web (PHP, MySQL, Java Script, CSS, HTML5, Apache Web Server), 2h, Learning outcomes:1,2,3 Introduction to PHP , 2h, Learning outcomes:1,2,4 PHP - programming introduction,variables, control structures , 2h, Learning outcomes:1,2,4 PHP - functions objects, arrays, 2h, Learning outcomes:1,4 3.PHP in practice, 2h, Learning outcomes:1,2,4 4.MySQL - basics, 2h, Learning outcomes:1,2,3 5.MySQL - design and database creation within Internet environment , 2h, Learning outcomes:1,2,3 6.MySQL - design and database creation within Internet environment , 2h, Learning outcomes:1,2,3 7.MySQL - SQL , 2h, Learning outcomes:1,2,3 8.Accessing MySQL using PHP , 2h, Learning outcomes:1,2,3 9.Using mysqli extension , 2h, Learning outcomes:1,2,3 10.CSS, 2h, Learning outcomes:1,2,3 11.Introduction to forms, 2h, Learning outcomes:1,2,3 12.Java script - basics, 2h, Learning outcomes:1,2 13.Using Ajax, 2h, Learning outcomes:1,2,3 14.Internet environment application development planning and development using PHP, MySQL, Java Script, CSS, HTML5, Apache Web Server, 2h, Learning outcomes:1,2,3,4,5 15.Internet environment application development planning and development using PHP, MySQL, Java Script, CSS, HTML5, Apache Web Server, 2h, Learning outcomes:1,2,3,4,5				
Course content laboratory	1.MongoDB - database creation, 2h, Learning outcomes:5 MongoDB - data types , 2h, Learning outcomes:5 MongoDB - control structures and queries , 2h, Learning outcomes:5 MongoDB - complex queries, 2h, Learning outcomes:5 2.PHP basic syntax , 2h, Learning outcomes:1,2,4 PHP expressions and control flow, 2h, Learning outcomes:1,2,4 PHP expressions and control flow, 2h, Learning outcomes:1,2,4 PHP objects , functions, arrays, 2h, Learning outcomes:1,2,4 3.PHP holistic approach in application development , 2h, Learning outcomes:1,2,4 4.MySQL basics, 2h, Learning outcomes:1,2,3 5.MySQL- Queries , 2h, Learning outcomes:1,2,3 6.MySQL- Queries , 2h, Learning outcomes:1,2,3 7.MySQL- Queries, 2h, Learning outcomes:1,2,3 8.MySQL- Queries, 2h, Learning outcomes:1,2,3 9.Acessing MySQL using PHP , 2h, Learning outcomes:1,2,3,4 10.Acessing MySQL using PHP, 2h, Learning outcomes:1,2,3,4 11.Using mysqli, 2h, Learning outcomes:1,2,3,4 12.CSS, 2h, Learning outcomes:1,2 13.Java script , 2h, Learning outcomes:1,2 14.Java script , 2h, Learning outcomes:1,2 15.Application development - preparation for project (exam), 2h, Learning outcomes:1,2,3,4,5				
Required materials	General purpose computer laboratory Whiteboard with markers Overhead projector				

Exam literature	Shashank, Tiwari: Professional NoSQL, John Wiley Sons, Inc., 2011.	
Students obligations	Attending lectures and exercises	
Knowledge evaluation during semester	Discussions on a given theme	
Knowledge evaluation after semester	Creating Internet application	
Student activities:	Aktivnost (Project)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	Dr.sc. Goran Klepac, Prof. v.š., Znanstveni suradnik	

Code WEB/ISVU	23156/130924	**ECTS**	6.0	**Academic year**	2018/2019
Name	Interoperability standards in systems management				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+45 (30+15+0+0) 105
Teachers	Lectures:1. dr.sc. Mladen Mauher prof.v.šk.				
Course objectives	Comprehension and proficiency of government and public services interoperability implementation				
Learning outcomes:	1.to reconsider interoperability requirements. Level:7 2.to present the legal view of interoperability. Level:6,7 3.to present the organizational view of interoperability. Level:6,7 4.to present the semantic view of interoperability. Level:6,7 5.to present the technical view of interoperability. Level:6,7 6.to valuate interoperability reference architecture. Level:7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Demonstration Discussion Questions and answers				
Methods of carrying out auditory exercises	Data mining and knowledge discovery on the Web Discussion, brainstorming Mind mapping				
Methods of carrying out laboratory exercises	Laboratory exercises, computer simulations Group problem solving Mind mapping Workshop				
Course content lectures	1.Introduction: interoperability definition, interoperability policies (european, national), interoperability frameworks, 4h, Learning outcomes:1 2.Interoperability architectures overview, 4h, Learning outcomes:2,3 3.Legal view of interoperability architecture, 4h, Learning outcomes:2,3 4.Organizational view of interoperability architecture, 4h, Learning outcomes:2,3 5.Semantic view of interoperability architecture, 4h, Learning outcomes:2,3 6.Technical view of interoperability architecture, 4h, Learning outcomes:2,3,4 7.Interoperability reference architecture, 4h, Learning outcomes:5,6 8.Interoperability reference architecture, 2h, Learning outcomes:5,6 9.n/a 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a 15.n/a				
Course content auditory	1.n/a 2.n/a 3.Key interoperability enablers, 4h, Learning outcomes:1,2,3,4,5 4.Key interoperability enablers, 4h, Learning outcomes:1,2,3,4,5 5.Interoperability and reuse, 4h, Learning outcomes:1,2,3,4,5 6.n/a 7.Data transformation services, 3h, Learning outcomes:1,2,3,4,5 8.n/a 9.n/a 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a 15.n/a				
Course content laboratory	1.n/a 2.n/a 3.n/a 4.Use Case interoperability modeling, 4h, Learning outcomes:1,2,3,4,5 5.Use Case interoperability modeling, 4h, Learning outcomes:1,2,3,4,5 6.Use Case interoperability modeling, 4h, Learning outcomes:1,2,3,4,5,6 7.Presentation of Use Case interoperability models, 3h, Learning outcomes:1,2,3,4,5,6 8.n/a 9.n/a 10.n/a				

	11.n/a 12.n/a 13.n/a 14.n/a 15.n/a
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector
Exam literature	Ana Lisboa, Delfina Soares: E-government Interoperability Frameworks: A Worldwide Inventory, Elsevier, 2014
Students obligations	course attendance 70% auditory exercises attendance 70% laboratory exercises attendance 80%
Knowledge evaluation during semester	no
Knowledge evaluation after semester	written exam 70% points oral exam 30% points
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Prof. Mladen Mauher, Ph.D.

Code WEB/ISVU	23148/130915	**ECTS**	6.0	**Academic year**	2018/2019
Name	IT Systems Development and Implementation				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (30+0+0+0) 120
Teachers	Lectures: Marijan Matić dipl.ing. Auditory exercises: Marijan Matić dipl.ing.				
Course objectives	To transfer to students the basic knowledge related to the area of development, introduction and testing of information systems				
Learning outcomes:	1.ability to choose a methodology suitable for the development of an information system. Level:7 2.UML diagrams. Level:6,7 3.ability to evaluate the procedures of testing, control and system security. Level:7 4.ability to compare methodologies and standards used in the development of information systems. Level:6,7 5.ability to justify the use of a data model when working with databases. Level:7 6.ability to classify tasks included in administering database systems. Level:6,7 7.ability to estimate the use of a system used for data warehousing and deep processing. Level:7 8.ability to recommend the implementation of a database model. Level:7 9.ability to rank programming languages according to their features. Level:7 10.ability to set up a software testing environment. Level:6,7 11.ability to prepare a software specification and documentation. Level:6,7 12.ability to estimate the quality of a user interface. Level:7 13.ability to design a Web content based on the CSS3/HTM5/JavaScript technologies. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Seminar, students presentation and discussion				
Methods of carrying out auditory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations				
Course content lectures	1.Process and methods of system development; software in systems used for data processing; life cycle of system development, tools used in system development;, 4h, Learning outcomes:1,2 2.testing and implementation of systems; system control and security, trends in system development; data control and databases;, 4h, Learning outcomes:3,4 3. data and transactions, database structure; data modelling; relational data model; , 4h, Learning outcomes:5,6 4.SQL; queries and reports; database administration and security; data warehousing and mining, programming; , 4h, Learning outcomes:7,8 5.techniques and methods used in software development; algorithms and data structures; programming languages; OOP; elements of a program; , 4h, Learning outcomes:9,10,11 6.testing; documentation and maintenance; program examples; user interface and Web design; , 4h, Learning outcomes:12 7.human-computer interaction; graphic design; Web and hypermedia; , 4h, Learning outcomes:12,13 8.Requirements and methods of Web design; Web page design; Web programming , 2h, Learning outcomes:13 9.- 10.- 11.- 12.- 13.- 14.- 15.-				
Course content auditory	1.UML modelling - use case diagram, 4h, Learning outcomes:2 2.UML modelling - class diagram, 4h, Learning outcomes:2 3.software testing (testing modules and coverage), 4h, Learning outcomes:2 4.administering and using configuration management tools (Subversion), 4h, Learning outcomes:3 5.integration of configuration control tools with error control tools (Subversion i Bugzilla), 4h, Learning outcomes:3,10 6.SQL control of transactions and rights (DCL i TCL), 4h, Learning outcomes:6 7.implementation of Web based content by using HTML 5 and CSS3 , 4h, Learning outcomes:12,13 8.JavaScript, 2h, Learning outcomes:13 9.- 10.- 11.- 12.- 13.- 14.- 15.-				
Required materials	Basic: classroom, blackboard, chalk... Special purpose computer laboratory Overhead projector				
Exam literature	Skripta predavanja: Marijan Matić, Razvoj i primjena informacijskih sustava, Zagreb 2012 EUCIP CORE LEVEL COURSE MATERIAL: P. Schgoer, R Brambilla, F. Amarilli: The All-Round IT Professional, Build Knowelegde Area: Development and Implementation of Information Systems, ICS Skills, Dublin 2005.,				

Students obligations	maximum of 3 absences from exercises	
Knowledge evaluation during semester	Kolokvij, teorijska pitanja#2#80#50$Prakti rad#10#20#40$	
Knowledge evaluation after semester	Pismeni ispit#1#50#50$Usmeni ispit#1#50#50$	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	

Code WEB/ISVU	23142/130908	**ECTS**	5.0	**Academic year**	2018/2019
Name	IT Systems Management				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				45+15 (15+0+0+0) 90
Teachers	Lectures: Vesna Alić-Kostešić dipl.ing.stroj. Auditory exercises: Vesna Alić-Kostešić dipl.ing.stroj.				
Course objectives	To transfer to students the basic knowledge related to planning, using and managing information systems				
Learning outcomes:	1.ability to classify organisation structures and information systems which support their work. Level:6,7 2.ability to justify a function of an information system in regard to the part of work it supports. Level:7 3.ability to estimate the value of an information system according to key business indicators. Level:7 4.ability to support the development of an information system in an organisation in accordance with the latest trends in the fields of business and marketing. Level:7 5.ability to present methods and techniques of testing quality of a planned information system. Level:6,7 6.ability to formulate phase of the IT project. Level:6,7 7.ability to communicate ideas, especially with people who are not closely related to IT. Level:6,7 8.ability to support reaching decisions related to ethical and legal issues concerning the information technologies. Level:7 9.ability to explain the elementary regulations of the Civil obligation act and The Croatian companies act. Level: 10.ability to solve basic types of legal issues. Level:6 11.ability to sketch basic business agreements. Level:6 12.ability to fully comply with a code of business conduct . Level:				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 10h in 150h 1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 10h in 150h 1.5.OPĆI Identificirati, modelirati i rješavati inženjerske probleme.: 10h in 150h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 10h in 150h 2.3.OSOBNE Etički i moralni pristup radu.: 10h in 150h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 10h in 150h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 10h in 150h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 10h in 150h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 10h in 150h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 50h in 150h 3.3.SPECINF Povezati relevantne specifične discipline kao što su informacijsko-računarsko inženjerstvo i tehnologije u poslovnom okruženju: 10h in 150h				
Methods of carrying out lectures	Ex cathedra teaching Case studies Discussion				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Computer simulations				
Course content lectures	1.Organisation and Use of IT, 2h, Learning outcomes:1,2 2.Organisation and Use of IT, 2h, Learning outcomes:1,2 3.Management of Information Technology, 2h, Learning outcomes:3,4 4.Measuring the Value of IT, 2h, Learning outcomes:5,6 5.Colloquium, 2h, Learning outcomes:1,2,3,4,5,6 6.Global Networked Economy, 2h, Learning outcomes:7 7.Global Networked Economy, 2h, Learning outcomes:7 8.Project Management, 2h, Learning outcomes:8,9 9.Project Management, 2h, Learning outcomes:8,9 10.Project Management, 2h, Learning outcomes:8,9 11.Cooperation and communication, 2h, Learning outcomes:10 12.Cooperation and communication, 2h, Learning outcomes:10 13.Legal and ethical issues, 2h, Learning outcomes:11,12 14.Legal and ethical issues, 2h, Learning outcomes:11,12 15.Colloquium, 2h, Learning outcomes:7,8,9,10,11,12				
Course content auditory	1.Information systems used in management , 1h, Learning outcomes:1 2.Information systems used in management , 1h, Learning outcomes:1 3.Typical IT functions and types of technology, 1h, Learning outcomes:2,3 4.Typical IT functions and types of technology, 1h, Learning outcomes:2,3 5.Business plans and feasibility studies , 1h, Learning outcomes:4,5 6.Business plans and feasibility studies , 1h, Learning outcomes:4,5 7.Using CRM, SCM, ERP, 1h, Learning outcomes:6 8.Using CRM, SCM, ERP, 1h, Learning outcomes:6 9.Basic techniques used in project management, 1h, Learning outcomes:7 10.Basic techniques used in project management, 1h, Learning outcomes:7 11.Communication models , 1h, Learning outcomes:8 12. Art of presenting , 1h, Learning outcomes:9				

	13.Copyright and special features of computer programs, 1h, Learning outcomes:10 14.Examples of software license agreement, 1h, Learning outcomes:11 15.IT innovation management, 1h, Learning outcomes:12
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Overhead projector
Exam literature	1. EUCIP CORE LEVEL COURSE MATERIAL: P. Schgoer, R Brambilla, F. Amarilli: The All-Round IT Professional, Plan Knowelegde Area: Use and Management of Information Systems, ICS Skills, Dublin 2005.,
Students obligations	maximum of 3 absences from exercises
Knowledge evaluation during semester	Colloquim
Knowledge evaluation after semester	test paper
Student activities:	Aktivnost ECTS (Constantly tested knowledge) 3 (Written exam) 2
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23150/130917	**ECTS**	6.0	**Academic year**	2018/2019
Name	Java Programming				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:v.pred. Aleksander Radovan , dipl. ing. Laboratory exercises:v.pred. Aleksander Radovan , dipl. ing.				
Course objectives	Acquiring knowledge and skills for development of Java applications that use the database.				
Learning outcomes:	1.ability to write a code for a JavaFX application which will use a GUI and a database. Level:6,7 2.ability to choose a Java development option if it is suitable for solving a specific task. Level:7 3.ability to organise elements of an application into classes, interfaces and packages according to the principles of OOP. Level:6,7 4.ability to develop JavaFX applications to solve various types of practical problems. Level:6,7 5.ability to estimate individually the appropriateness of using Java in solving a specific practical problem. Level:7 6.ability to organise a development environment (Eclipse) for an efficient development of JavaFX applications. Level:6,7 7.ability to devise the structure of classes in Java applications to make it upgradable. Level:6,7 8.ability to discover the possibilities of upgrading an application by means of open source libraries. Level:6,7 9.ability to redesign the existing applications by using Java. Level:6,7 10.ability to relate the knowledge of Java to the knowledge of other programming languages. Level:6,7 11.ability to provide a critical review of the advantages and disadvantages of Java when compared to other programming languages. Level:7				
Methods of carrying out lectures	Ex cathedra teaching Demonstration				
Methods of carrying out laboratory exercises	Practical work using computer with Java development environment installed.				
Course content lectures	1.Java programming language basics and simple Java programs, 2h, Learning outcomes:2,5,10,11 2.Classes and objects in Java, 2h, Learning outcomes:7 3.Object oriented programming in Java, 2h, Learning outcomes:3 4.Exceptions in Java, 2h, Learning outcomes:7,8 5.Collections, generics and Javadoc, 2h, Learning outcomes:7,8,9,11 6.Files in Java, 2h, Learning outcomes:7,9,11 7.JavaFX, 2h, Learning outcomes:1,3,4,6 8.JDBC, 2h, Learning outcomes:1,2,3,6 9.No classes, 2h 10.No classes, 2h 11.No classes, 2h 12.No classes, 2h 13.No classes, 2h 14.No classes, 2h 15.No classes, 2h				
Course content laboratory	1.No classes, 2h 2.Classes and objects in Java, 2h, Learning outcomes:3,7,10 3.Object oriented programming in Java, 2h, Learning outcomes:2,3,4,5,7,9,10 4.Exceptions in Java, 2h, Learning outcomes:7 5.Collections and generics in Java, 2h, Learning outcomes:2,5,7,9,10,11 6.Files in Java, 2h, Learning outcomes:8,9,10,11 7.JavaFX, 2h, Learning outcomes:1,2,4,5,6,7,8,9,10,11 8.JDBC, 2h, Learning outcomes:1,8,9,10,11 9.No classes, 2h 10.No classes, 2h 11.No classes, 2h 12.No classes, 2h 13.No classes, 2h 14.No classes, 2h 15.No classes, 2h				
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Overhead projector				
Exam literature	Bruce Eckel: On Java 8, MidView LLC, 2017. Java for Programmers: Deitel Developer Series, Prentice Hall, veljača, 2009. A Programmer's Guide to Java SCJP Certification: A Comprehensive Primer 3rd Edition, 2009. Java Concurrency in Practice, Addion Wesley, svibanj, 2006. Head First Java, 2nd edition, O'Reilly, veljača, 2005. Java The Good Parts, O'Reilly, svibanj, 2010. Eclipse IDE Pocket Guide, O'Reilly, kolovoz, 2005. Effective Java, 2nd edition, Prentice Hall, svibanj, 2008.				

	Sprechen Sie Java?, dpunkt.verlag, Hanspeter Mssenbck, lipanj 2011. Grundkurs Programieren iz Java, Hanser, 6. Auflage, 2011.
Students obligations	Completing all ten laboratory excercises
Knowledge evaluation during semester	Ten laboratory exams - 6 points each Two partial exams - 20 points each Optional points for additional effort Every partial exam has a correctional exam Maximum 100 points 0-49 - not good enough 50-61 - sufficient 62-74 - good 75-86 - very good 87-100 - excellent
Knowledge evaluation after semester	Written exam is evalued with 40 points, and remaining 60 points are transferred from the achievement on laboratory exams during the semester time
Student activities:	Aktivnost ECTS (Practical work) 4 (Written exam) 2
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Aleksander Radovan, BSc. engineer, lecturer, 03.06.2018.

Code WEB/ISVU	23149/130916	**ECTS**	6.0	**Academic year**	2018/2019
Name	Management Soft Skills				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures: Vjeran Bušelić viši predavač Auditory exercises: Vjeran Bušelić viši predavač				
Course objectives	To transfer to students the basic knowledge related to popular managerial "soft skill" competences				
Learning outcomes:	1.ability to classify the basic functions and tasks related to management. Level:6,7 2.ability to estimate the importance of personal, communication and group managerial skills. Level:7 3.ability to control one's own emotional intelligence. Level:6,7 4.ability to control efficiently one's own time. Level:6,7 5.ability to create and give an efficient presentation. Level:6,7 6.ability to create quality questions in order to get prompt information. Level:6,7 7.ability to negotiate following a selling methodology (9 Block Model). Level:6,7				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 10h in 180h 1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 10h in 180h 1.4.OPĆI Povezati inženjerske aktivnosti konstruiranja, proizvodnje i marketinga s potrebama korisnika proizvoda i usluge.: 10h in 180h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 10h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 10h in 180h 2.3.OSOBNE Etički i moralni pristup radu.: 10h in 180h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 10h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 40h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 20h in 180h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 20h in 180h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 10h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 20h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Simulations Discussion Questions and answers Seminar, students presentation and discussion Homework presentation Other Multimedia material, tapes, LCD projector, interactive approach				
Methods of carrying out auditory exercises	Group problem solving Data mining and knowledge discovery on the Web Discussion, brainstorming Mind mapping Interactive problem solving Workshop Other				
Methods of carrying out seminars	Other Nema nastave				
Course content lectures	1. , 2h, Learning outcomes:1,2,3,4,5,6,7 2. , 2h, Learning outcomes:1,2 3. , 2h, Learning outcomes:1,2,3 4. , 2h, Learning outcomes:1,2,3 5. , 2h, Learning outcomes:1,2,3 6. , 2h, Learning outcomes:1,2,3 7. , 4h, Learning outcomes:4 8. , 4h, Learning outcomes:5 9. , 2h, Learning outcomes:6 10. , 2h, Learning outcomes:6 11. , 2h, Learning outcomes:7 12. , 2h, Learning outcomes:7 13. , 2h 14. , 2h 15. , 2h				
Course content auditory	1. , 6h, Learning outcomes:1,2,4 2. , 6h, Learning outcomes:1,2,5 3. , 2h, Learning outcomes:1,2,6 4. , 4h, Learning outcomes:1,2,6 5. , 2h, Learning outcomes:1,2,6,7 6. , 4h, Learning outcomes:1,2,6,7 7. , 2h 8. , 2h				

	9. , 2h 10. , 2h 11. , 2h 12. , 2h 13. , 2h 14. , 2h 15. , 2h
Course content seminars	1.Nema nastave, 30h 2.Nema nastave 3.Nema nastave 4.Nema nastave 5.Nema nastave 6.Nema nastave 7.Nema nastave 8.Nema nastave 9.Nema nastave 10.Nema nastave 11.Nema nastave 12.Nema nastave 13.Nema nastave, 2h 14.Nema nastave 15.Nema nastave
Required materials	Basic: classroom, blackboard, chalk... Overhead projector
Exam literature	Basic literature: 1.Bahtijarević-Šiber, Sikavica, Pološki Vokić, Suvremeni menadžment - vještine, sustavi, izazovi, Školska knjiga, Zagreb, 2008 Additional literature: 2.Certo, Certo, Moderni menadžment - 10. Izdanje, MATE d.o.o., Zagreb, 2008. 3.Peter Drucker, Najvažnije o menadžmentu, M.E.P. CONSULT d.o.o., Zagreb, 2005. 4.Stephen Covey, The Seven Habits of Highly Effective People, Simon Schuster, 1989. 5.Daniel Goleman, Emocionalna inteligencija, Mozaik knjiga, 1997. 6.Jerry Weissman, Prezentacijom do uspjeha, MATE d.o.o., Zagreb, 2006. 7.Keith M. Eades, The New Solution Selling: The Revolutionary Sales Process That is Changing the Way People Sell, McGraw-Hill, 2004. 8.Dennis Matthies, Precision Questioning Technique, http://www.vervago.com/resources.html (PQ PA Skill Sharpener)
Students obligations	50% dolaznosti uz aktivno sudjelovanje i pravovremeno izvravanje zadanih obaveza vezano uz prakti rad
Knowledge evaluation during semester	Redovitost pohaa (15 provjera) Pisana zada(2 provjere) Prakti rad (2 provjere)
Knowledge evaluation after semester	Usmeni ispit: Redovitost pohaa i aktivnost na satu - 20% (kriterij za prolaz 50%) Pisana zada(2 provjere) - 40% (kriterij za prolaz 50%) Prakti rad (2 provjere) - 40% (kriterij za prolaz 50%)
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23135/130898	**ECTS**	5.0	**Academic year**	2018/2019
Name	Mathematics				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (30+0+0+0) 90
Teachers	Lectures:1. dr.sc. Igor Urbiha prof.vis.šk. Auditory exercises:dr.sc. Igor Urbiha prof.vis.šk.				
Course objectives	To qualify students to use both a differential and integral calculus of multivariable functions				
Learning outcomes:	1.functions of several variables. Level:6,7 2.continuity and limit of a function of several variables. Level:6,7 3.ability to understand the differential calculus of multivariable functions. Level:7 4.ability to understand the first and higher order partial derivatives. Level:7 5.ability to understand the tangent plane. Level:7 6.ability to understand the local extremes of more variables. Level:7 7.ability to understand the integral calculus of multivariable functions. Level:7 8.ability to understand the calculus of double integrals. Level:7 9.ability to understand the polar coordinate system in a plane. Level:7 10.ability to understand the calculus of double integration with substitution. Level:7 11.ability to understand the implementation of integrals on calculating centre of mass, static moments and centre of gravity. Level:7 12.first order linear differential equation using the variation of constants method. Level:6 13.ordinary differential equations. Level:6,7 14.ability to solve differential equations. Level:				
Methods of carrying out lectures	Ex cathedra teaching Case studies Questions and answers Other auditory				
Methods of carrying out auditory exercises	Other solving examples and exercises relevant to the delivered material.				
Course content lectures	1.Multivariable functions, Domain of a function of two variables, Quadric surfaces, 2h, Learning outcomes:1 Limit and continuity of multivariable functions, 2h, Learning outcomes:2 2.Partial derivatives, Schwartzs theorem, 2h, Learning outcomes:2,3,4 Chain rule, total derivative of a function of two variables of first and second order, tangent plane., 2h, Learning outcomes:4,5 3.Local extrema of functions of several variables, conditional extrema, 2h, Learning outcomes:6 Integral calculus of functions of several variables: volume, double integral, multiple integral, 2h, Learning outcomes:7,8 4.1. exam, 2h Computing double integral - iterated integrals, Fubinis theorem, 2h, Learning outcomes:8 5.Polar coordinate system in plane, computing double integral using substitution (cartesian to polar coordinates), Jacobian, 2h, Learning outcomes:9,10 Application of integrals: Centroid, Centre of mass, Static moments, Moment of inertia , 2h, Learning outcomes:11 6.2. exam, 2h Ordinary differential equations - Introduction, 2h, Learning outcomes:13 7.First Order Linear Differential Equations, the variation of constants method, 2h, Learning outcomes:12 System of linear differential equations with constant coefficients, 2h, Learning outcomes:14 8.3. exam, 2h 9.nema nastave 10.nema nastave 11.nema nastave 12.nema nastave 13.nema nastave 14.nema nastave 15.nema nastave				
Course content auditory	1.Multivariable functions, Domain of a function of two variables, Quadric surfaces., 2h, Learning outcomes:1 Limit and continuity of multivariable functions, 2h, Learning outcomes:2 2.Partial derivatives, Schwartzs theorem., 2h, Learning outcomes:2,3,4 Chain rule, total derivative of a function of two variables of first and second order, tangent plane., 2h, Learning outcomes:4,5 3.Local extrema of functions of several variables, conditional extrema., 2h, Learning outcomes:6 Integral calculus of functions of several variables: volume, double integral, multiple integral, 2h, Learning outcomes:7,8 4.1. exam, 2h Computing multiple integral - iterated integrals, Fubinis theorem, 2h, Learning outcomes:8 5.Polar coordinate system in plane, computing double integral using substitution (cartesian to polar coordinates), Jacobian, 2h, Learning outcomes:9,10 Application of integrals: Centroid, Centre of mass, Static moments, Moment of inertia , 2h, Learning outcomes:11 6.2. exam, 2h Ordinary differential equations - Introduction, 2h, Learning outcomes:13 7.First Order Linear Differential Equations, the variation of constants method, 2h, Learning outcomes:12				

	System of linear differential equations with constant coefficients, 2h, Learning outcomes:14 8.3. exam, 2h 9.nema nastave, 2h 10.nema nastave, 2h 11.nema nastave, 2h 12.nema nastave, 2h 13.nema nastave, 2h, Learning outcomes:12 14.nema nastave, 2h 15.nema nastave, 2h
Required materials	Basic: classroom, blackboard, chalk... Whiteboard with markers solving examples and exercises relevant to the delivered material.
Exam literature	S. Suljagić: Matematika 2, http://www.grad.hr/nastava/matematika/ S. Kurepa, Matematička analiza III, Tehnička knjiga, Zagreb 1975. L.Krnić, Z.Šikić: Račun diferencijalni i integralni, Školska knjiga, Zagreb, 1992. B.P.Demidovič: Zadaci i riješeni zadaci iz više matematike s primjenom na tehničke nauke, Tehnička knjiga, 1978.
Students obligations	No special requirements.
Knowledge evaluation during semester	Exams during semester
Knowledge evaluation after semester	There are three preliminary exams (three questions each), and if a student correctly solved at least one problem of each preliminary exam and correctly solved at least four problems of all three preliminary exams, it makes the student exempt from taking the written exam. The written part of the exam consists of five problems to be solved within 2 hours. A student may attempt to the oral part of the exam, if he has two correctly solved problems in the written part of the exam.
Student activities:	Aktivnost — ECTS (Written exam) — 5
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	dr.sc. Igor Urbiha prof.vis.šk., 17.4.2014.

Code WEB/ISVU	23202/130977	**ECTS**	6.0	**Academic year**	2018/2019
Name	Methodology of professional and scientific research				
Status	4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course4th semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				15+45 (0+0+45+0) 120
Teachers	Lectures:1. Doc. dr. sc. Lidija Tepeš Golubić v. pred. Lectures:3. dr.sc. Žarko Nožica Seminar exercises: Sara Slamić Tarade struč. spec. rel. publ.				
Course objectives	Enable students to produce high-quality professional work and research				
Learning outcomes:	1.Formulate hypothesis for solution to research problem. Level:6,7 2.generate a solution of professional and scientific problems through research. Level:6,7 3.evaluate policies and procedures of the methodology of professional and research work. Level:7 4.Select procedures for transforming good ideas into high-quality professional work. Level:7 5.choosing methods for creating a professional work. Level:7 6.formulate / shape research results. Level:6,7 7.present the results in appropriate way to target audience. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers Seminar, students presentation and discussion Homework presentation				
Methods of carrying out seminars	Traditional literature analysis Data mining and knowledge discovery on the Web Discussion, brainstorming				
Course content lectures	1.Introduction to professional and research work. Professional, research and scientific activities. Concept and types of professional work. Concept and types of scientific work. , 3h, Learning outcomes:1,2 2. The methodology of professional research. Concept and classification of professional and scientific methods. , 3h, Learning outcomes:5,7 3.Technology of professional and scientific research. The choice of research topics. Planning and organization of research work., 3h, Learning outcomes:3 4.Research and development. Writing and technical processing of professional work. Using literature and citation, parts of the report and research documentation., 3h, Learning outcomes:6 5.Plagiarism. Professional and scientific journals and publications. Searching databases. Works for acquiring professional and scientific titles., 3h, Learning outcomes:1 6.The ways of controlling originallity of written papers, appling computer programs, 2h 7.no lessons, 2h 8.no lessons, 2h 9.no lessons, 2h 10.no lessons, 2h 11.no lessons, 2h 12.no lessons, 2h 13.no lessons, 2h 14.no lessons, 2h 15.no lessons, 2h				
Course content seminars	1.assigned by mentor, 3h, Learning outcomes:2 2.assigned by mentor, 3h, Learning outcomes:2 3.assigned by mentor, 3h, Learning outcomes:2 4.assigned by mentor, 3h, Learning outcomes:2 5.assigned by mentor, 3h, Learning outcomes:2,3 6.assigned by mentor, 3h, Learning outcomes:3 7.assigned by mentor, 3h, Learning outcomes:3 8.assigned by mentor, 3h, Learning outcomes:3 9.assigned by mentor, 3h, Learning outcomes:3 10.assigned by mentor, 3h, Learning outcomes:2 11.assigned by mentor, 3h, Learning outcomes:2 12.assigned by mentor, 3h, Learning outcomes:2 13.assigned by mentor, 3h, Learning outcomes:2,7 14.assigned by mentor, 3h, Learning outcomes:2,7 15.assigned by mentor, 3h, Learning outcomes:2,7				
Required materials	Basic: classroom, blackboard, chalk... Overhead projector				
Exam literature	1. M.Žugaj, K.Dumičić, V.Dušak: Temelji znanstvenoistraživačkog rada- Metodologija i metodika, FOI, Varaždin, 2006.g. 2. R. Zelenika: Metodologija i tehnologija izrade znanstvenog i stručnog djela. Ekonomski fakultet, Rijeka, 2000.g. 3. Lj. Baban, K. Ivić, S. Jelinić, M. Lamza-Maronić, A. Šundalić: Primjena metodologije stručnog i znanstvenog				

	istraživanja.Ekonomski fakultet, Osijek, 2000. 4. R. Zelenika: Tehnologija znanstvenog i razvojnog istraživanja. IQ plus d.o.o.Rijeka 2016. ISBN: 978-953-95705-9-8	
Students obligations	Attending classes and participation in the process	
Knowledge evaluation during semester	Preliminary exam and seminar paper	
Knowledge evaluation after semester	Oral exam and seminar paper	
Student activities:	Aktivnost (Oral exam) (Written exam) (Written exam) (Seminar Work) (Seminar Work) (Activity in class)	ECTS 1 1 1 1 1 1
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	dr,sc. Žarko Nožica, 23.3.2014	

Code WEB/ISVU	23140/130906	**ECTS**	5.0	**Academic year**	2018/2019
Name	Motivation and Team Work				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (30+0+0+0) 90
Teachers	Lectures:1. izv. prof. dr. sc. Petar Jandrić prof. v. šk. Auditory exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk.				
Course objectives	To introduce students the basics of successful communication and develop students				
Learning outcomes:	1.ability to formulate the basics of successful communication. Level:6,7 2.abilityto identify obstacles to successful communication, understanding conflicts, the basic features of group processes and rules of public presentation . Level:6 3.ability to classify techniques and skills needed for successful communication with individuals, in groups and in front of audience. Level:6,7 4.ability to devise clear expressing and active listening; to provide feedback with respect. Level:6,7 5.ability to solve communication issues and conflicts. Level:6 6.ability to present various business plans, problems and solutions. Level:6,7 7.ability to estimate the influence of gender based attitudes on work with persons of the same or opposite gender. Level:6,7 8.ability to compare the intercultural differences for better communication with people belonging to various cultures. Level:6,7 9.ability to formulate a leader's roles and functions directed towards social and emotional relations between members of a group and performance of individual and group goals . Level:6 10.ability to develop humanistic values, such as mutual responsibility, the rights to inclusion and to being accepted, expressing freely one's ideas, tolerance of the different. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers Seminar, students presentation and discussion Homework presentation				
Methods of carrying out auditory exercises	Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming individual work, work in pairs, in small groups and plenary				
Course content lectures	1.Communication process (1)., 2h, Learning outcomes:1,10 2.Communication process (2)., 2h, Learning outcomes:1,3,10 3.Verbal Communication., 2h, Learning outcomes:2,3,4,10 4.Non-verbal Communication., 2h, Learning outcomes:2,3,10 5.Foundations of feminism., 2h, Learning outcomes:7,8,10 6.The influence of gender based opinions on work with persons of the same or the opposite gender., 2h, Learning outcomes:7,8,10 7.Foundations of multiculturalism., 2h, Learning outcomes:7,8,10 8.Intercultural differences more successful communication with people from other cultures., 2h, Learning outcomes:7,8,10 9.Negative and positive aspects of conflict., 2h, Learning outcomes:3,4,5,10 10.Constructive and destructive interaction and communication., 2h, Learning outcomes:3,4,5,10 11.Communication in small groups., 2h, Learning outcomes:3,4,5,10 12.Communication in large groups., 2h, Learning outcomes:3,4,5,10 13.Group structure and process specificities., 2h, Learning outcomes:3,4,5,9,10 14.Public presentation (1), 2h, Learning outcomes:3,4,5,9,10 15.Public presentation (2)., 2h, Learning outcomes:3,4,5,8,9,10				
Course content auditory	1.Distinguishing between a team and a working group. , 6h, Learning outcomes:1,2,5 2.Building a team. , 6h, Learning outcomes:1,2,5,8 3.Planning a team project. , 6h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 4.Creating team standards., 6h, Learning outcomes:1,2,9,10 5.Leadership styles., 6h, Learning outcomes:1,4,9,10 6.No lecture. 7.No lecture. 8.No lecture. 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				

Required materials	Basic: classroom, blackboard, chalk... Whiteboard with markers Overhead projector individual work, work in pairs, in small groups and plenary
Exam literature	Pearson, J. C., Spitzberg, B. H. (1990). Interpersonal communication: concepts, components and contexts. Dubuque: Wm. C. Brown Publishers. Egan, G. (1977). You and me: the skills of communicating and relating to others. Monterey: Brooks/Cole Publishing Company. Bolton, R. (1986). People skills. New York: Touchstone. Fisher, R., Ury, W., Patton, B. (2003). Kako do DA: do dogovora pregovorom, a ne predajom. Zagreb: Neretva. Lucas, S. E. (1998). The art of public speaking. New York: McGraw-Hill. Van Emden, J. I Becker, L. (2004). Presentation skills for students. London: Palgrave Macmillan. Stewart, J. (Ed.) (1999). Bridges, not walls: a book about interpersonal communication. McGraw-Hill. Holliday, A., Hyde, M. I Kullman, J. (2004). Intercultural communication. London: Routledge
Students obligations	maximum of 3 absences from exercises
Knowledge evaluation during semester	Redovitost pohaa#10#10#50$Kolokvij, teorijska pitanja#3#90#50$
Knowledge evaluation after semester	oral exam
Student activities:	Aktivnost ECTS (Oral exam) 5
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23176/130947	**ECTS**	6.0	**Academic year**	2018/2019
Name	Multimedia Processing				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+60 (30+30+0+0) 90
Teachers	Lectures:1. Ivan Rajković				
Course objectives	To transfer to students advanced knowledge in the field of interactive media and multimedia presentations				
Learning outcomes:	1.plan to produce multimedia presentations. Level:6,7 2.ability to devise a presentation of a content by using multimedia tools. Level:6,7 3.ability to organise the workflow of the image, sound and video processing. Level:6,7 4.critically assess and analyze the media elements in a multimedia presentation. Level:7 5.ability to provide a critical review on the classification of programs and of computer equipment used in multimedia design. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Discussion Questions and answers Seminar, students presentation and discussion Homework presentation				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Mind mapping Interactive problem solving Workshop				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Group problem solving Discussion, brainstorming Mind mapping Interactive problem solving Workshop				
Course content lectures	1.presentation of syllabus, 4h, Learning outcomes:1,5 2.Fundamentals of image , sound and video, 4h, Learning outcomes:1,2,5 3.Analysis of practices, 4h, Learning outcomes:1,5 4.Organizing production of multimedia content, 4h, Learning outcomes:2,3,4 5.Creating your own storyboard for presentations, 4h, Learning outcomes:3,4 6.The integration of text , images and sound in a unique presentation, 4h, Learning outcomes:3,4 7.Students presentation and discussion, 4h, Learning outcomes:1,2,5 8.Students presentation and discussion, 2h, Learning outcomes:1,2,5 9. 10. 11. 12. 13. 14. 15.				
Course content auditory	1.Introduction to multimedia laboratory, 2h, Learning outcomes:1,5 2.Presentation of multimedia tools, 2h, Learning outcomes:1,3,5 3.Making simple exercises for picture and video, 2h, Learning outcomes:1 4.Making simple exercises for sound, 2h, Learning outcomes:1 5.The process of processing media, 2h, Learning outcomes:1,3,5 6.Presentation storyboard, 2h, Learning outcomes:1,2,5 7.Finalization of presentation, 2h, Learning outcomes:1,5 8.Finalization of presentation, 2h, Learning outcomes:1,4,5 9. , 2h 10. , 2h 11. , 2h 12. , 2h 13. , 2h 14. , 2h 15. , 2h				
Course content laboratory	1. Introduction to computer programs, 4h, Learning outcomes:1 2. The basic image processing, audio and video, 4h, Learning outcomes:3,4 3. Discussion of selected topics to create multimedia presentations, 4h, Learning outcomes:3,4,5 4. Elaboration of multimedia content, 4h, Learning outcomes:3,4,5 5. Discussion on design of storyboarding, 4h, Learning outcomes:3,4,5 6. Creating multimedia presentations, 4h, Learning outcomes:1,3,4,5 7. Finalisation of Works, 4h, Learning outcomes:1,3,4,5 8. Presentation of final works, 4h, Learning outcomes:1,2				

	9. 10. 11. 12. 13. 14. 15.
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Video equipment
Exam literature	Vaughan, T. Multimedia: Making It Work, Second Edition
Students obligations	The design presentation , presentation
Knowledge evaluation during semester	seminar
Knowledge evaluation after semester	presentation
Student activities:	Aktivnost ECTS (Seminar Work) 3 (Classes attendance) 1 (Activity in class) 2
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Ivan Rajković, 21.3.2015

Code WEB/ISVU	23144/130911	**ECTS**	6.0	**Academic year**	2018/2019
Name	Multimedia Systems				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+15+0+0) 120
Teachers	Lectures:1. Prof.dr.sc. Slavica Ćosović Bajić Lectures:2. Sanja Kraljević , dipl.ing., v. pred. Lectures:3. Milan Bajić Auditory exercises: Milan Bajić Auditory exercises:Prof.dr.sc. Slavica Ćosović Bajić Auditory exercises: Sanja Kraljević , dipl.ing., v. pred. Laboratory exercises: Milan Bajić				
Course objectives	Acquire basic knowledge in the area of multimedia systems.				
Learning outcomes:	1.ability to integrate the interface functionalities of various types of TV systems. Level:6,7 2.ability to formulate/design both analog and digital electro-acoustic systems . Level:6,7 3.ability to classify devices according to the quality of recording and reproduction. Level:6,7 4.ability to choose an option of ready video signal processing programs. Level:7 5.ability to provide one's own critical view of the Internet TV possibilities. Level:7 6.ability to choose a computer program for TV image processing. Level:7 7.ability to evaluate the advantages of digital TV. Level:7 8.Ability to critically assess the quality of picture and sound.).. Level:7 9.Ability to review possibilities for integrating multimedia systems.. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers Seminar, students presentation and discussion To achieve fundamental knowledge and competences in the area of Analog and digital electroacustical technique and systems. Distortions of the audio and video signals. Analog and digital processing of the audio and video signals. Computer programmes for editing of the audio and video materials. Communication channels for exchange of the programmes.Satelite systems.				
Methods of carrying out auditory exercises	Group problem solving Data mining and knowledge discovery on the Web Computer simulations				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Discussion, brainstorming Workshop				
Course content lectures	1.Analog and digital devices and systems., 4h, Learning outcomes:2,3,4 2.Formats of digital multimedia content., 4h, Learning outcomes:1,2,3,4,5 3.Computer programs for editing audio and video materials., 4h, Learning outcomes:1,2,3,4,5 4.Professional studio equipment for recording and playback of audio and video signals., 4h, Learning outcomes:3 5.Computer generated content, graphics and animation. User generated content., 4h, Learning outcomes:3 6.Digital newsroom. Network infrastructure in the media., 4h, Learning outcomes:1,2,3,4,5,7 7.Live streaming. The digital archive., 4h, Learning outcomes:3,4,7 8.User Interfaces., 2h, Learning outcomes:1,2,3,4,5 9.No classes. 10.No classes. 11.No classes. 12.No classes. 13.No classes. 14.No classes. 15.No classes.				
Course content auditory	1.No classes. 2.No classes. 3.No classes. 4.No classes. 5.No classes. 6.No classes. 7.No classes. 8.Display different types of audio signals., 1h, Learning outcomes:9 9. Display different types of audio signals., 2h, Learning outcomes:9 10. Sound recording., 2h, Learning outcomes:9 11. Measuring the parameters of the video signal., 2h, Learning outcomes:9 12. Record video resume (CV)., 2h, Learning outcomes:9 13. Editing video content from archival material., 2h, Learning outcomes:9 14. Editing video resume., 2h, Learning outcomes:9 15. HTML 5 multimedia elements, presentation and use., 2h, Learning outcomes:9				

Course content laboratory	1.No classes. 2.No classes. 3.No classes.voa: 4.No classes. 5.No classes. 6.No classes. 7.No classes. 8. Display different types of audio signals., 1h, Learning outcomes:9 9.Display different types of audio signals., 2h, Learning outcomes:9 10. Sound recording., 2h, Learning outcomes:9 11. Measuring the parameters of the video signal., 2h, Learning outcomes:9 12. Record video resume (CV)., 2h, Learning outcomes:9 13. Editing video content from archival material., 2h, Learning outcomes:9 14. Editing video resume., 2h, Learning outcomes:1,5 15. HTML 5 multimedia elements, presentation and use., 2h, Learning outcomes:1,5
Required materials	Basic: classroom, blackboard, chalk... Special purpose laboratory General purpose computer laboratory Whiteboard with markers Overhead projector Video equipment
Exam literature	R. Steinmetz, K. Nahrstedt - Multimedia Systems (University of Illinois, Department of computer science) R. Steinmetz, K. Nahrstedt - Multimedia Applications (University of Illinois, Department of computer science) Bilješke nastavnika 1.Grgic, S., Grgic, M., Digitalna televizija - Upute za laboratorijske vjezbe, FER, Zagreb, 2002, 56 pages (in Croatian)(approved by the Senate of the University of Zagreb, 14 May 2002, 02-659/3-2002) 2.Grgic, S., Kos, T., Grgic, M., Televizija - Upute za laboratorijske vjezbe, FER, Zagreb, 2002, 82 pages (in Croatian)(approved by the Senate of the University of Zagreb, 14 May 2002, 02-660/3-2002) R. Steinmetz, K. Nahrstedt - Multimedia Systems (University of Illinois, Department of computer science); R. Steinmetz, K. Nahrstedt - Multimedia Applications (University of Illinois, Department of computer science)
Students obligations	defining seminar paper
Knowledge evaluation during semester	Redovitost pohaa#10#10#30$Seminarski rad#1#90#70$
Knowledge evaluation after semester	Seminar paper #1#100#70$
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Sanja Duk ,dipl.ing., 1.6.2017.

Code WEB/ISVU	23191/130966	**ECTS**	6.0	**Academic year**	2018/2019
Name	New technologies and trends in the e-Health				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole Auditory exercises:dr.sc. Miroslav Mađarić dipl.inž.el. Auditory exercises:Prof. dr. sc. Miroslav Slamić profesor visoke škole Seminar exercises:dr.sc. Miroslav Mađarić dipl.inž.el.				
Course objectives	The aim of the course is to provide students to be up-to-date with advances in the field of e-health. The course is actively tackles and keep track of all the new trends related to technology and processes.				
Learning outcomes:	1.critically assess the application of mobile computing and communication devices in healthcare.. Level:7 2.critically assess the use of new wearable mobile devices and sensors for patient monitoring.. Level:7 3.to manage the use of BYOD devices in the healthcare system.. Level:6,7 4.review the use of social networks in the health system. Level:6,7 5.choose the basic option to use the system in the cloud for the purposes of Health Information Systems. Level:7 6.propose tools for Big Data Analytics. Level:6,7 7.prepare a video conference systems for communication in telemedicine. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers Seminar, students presentation and discussion				
Methods of carrying out auditory exercises	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Discussion, brainstorming				
Methods of carrying out seminars	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming				
Course content lectures	1.Selected topics in the application of mobile technology in health care., 4h, Learning outcomes:1 2.Selected topics from application of wearable mobile devices and sensors in health care., 4h, Learning outcomes:2 3.Monitoring technology trends and use of BYOD devices in the healthcare environment., 2h, Learning outcomes:3 4.The role, importance and risks of social networking applications in healthcare., 4h, Learning outcomes:4 5.Selected topics in the application of robotics in medicine., 4h, Learning outcomes:5 6.Application of the system in the Cloud (Cloud) in the health care environment., 4h, Learning outcomes:5,6 7.Big data analytics of unstructured and semi-structured information in electronic medical records., 4h, Learning outcomes:6 8.The use of video conferencing and unified approach in telemedicine and communication between health care institutions., 4h, Learning outcomes:5,6 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lectures.				
Course content auditory	1.A case study using a , 4h, Learning outcomes:1 2.A case study of the use of wearable mobile devices and sensors to monitor the state of chronic patients., 4h, Learning outcomes:2 3.Case study analysis and application of computer BYOD and communication devices in health care systems., 3h, Learning outcomes:3 4.A case study of the application of social networks in spreading health culture and the broader context of health care., 4h, Learning outcomes:3,4 5.No lecture. 6.No lecture. 7.No lecture. 8.No lecture. 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				

Course content seminars	1.No work on seminar. 2.No work on seminar. 3.No work on seminar. 4.No work on seminar. 5.The seminar - application of robotics in medicine., 4h, Learning outcomes:3,4 6.The seminar - Application of Cloud systems in medicine., 4h, Learning outcomes:5 7.The seminar - application of Big Data analytics to health information space., 4h, Learning outcomes:6 8.The seminar - application of video conferencing systems for communication in telemedicine., 3h, Learning outcomes:7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Overhead projector Video equipment
Exam literature	Nastavni materijali - prezentacije na moj.tvz.hr
Students obligations	Attendance of 70% of the lectures and 80% exercises.
Knowledge evaluation during semester	No mid-term exam.
Knowledge evaluation after semester	Evaluation of the written part of the seminar paper (70% points). Presentation of seminar paper (30% points).
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.

Code WEB/ISVU	23155/130923	**ECTS**	6.0	**Academic year**	2018/2019
Name	Office Business and Collaborative technology				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+15+0+0) 120
Teachers	Lectures:1. dr.sc. Mladen Mauher prof.v.šk.				
Course objectives	Qualify students to understand, design and implement collaboration system				
Learning outcomes:	1.to understand an present the meaning and collaboration models in government services. Level:6,7 2.to create and explain government service collaboration models. Level:6,7 3.to create and explain government collaboration model in the given government domains. Level:6,7 4.to create single-level and multilevel government collaboration models. Level:6,7 5.to envision the technology development and implementation directions of a new collaboration systems. Level:6,7				
Involvement of learning outcomes of the course in study programme:	1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 5h in 180h 1.5.OPĆI Identificirati, modelirati i rješavati inženjerske probleme.: 5h in 180h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 5h in 180h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 5h in 180h 2.3.OSOBNE Etički i moralni pristup radu.: 5h in 180h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 5h in 180h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 5h in 180h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 5h in 180h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 5h in 180h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 5h in 180h 6.1.E-uprava Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i procesa u okruženjima javne uprave: 30h in 180h 6.2.E-uprava Razumijevati objedinjeno pružanje usluga dionicima u sustavu javne uprave: 30h in 180h 6.3.E-uprava Uspostaviti kolaborativne tehnologije uredskog poslovanja u podsustavima javne uprave: 40h in 180h 6.5.E-uprava Primijeniti standarde interoperabilnosti u sustavima uprave: 30h in 180h				
Methods of carrying out lectures	Ex cathedra teaching Demonstration Modelling Discussion Questions and answers				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Mind mapping				
Methods of carrying out laboratory exercises	Laboratory exercises, computer simulations Group problem solving Workshop				
Course content lectures	1.Introduction: Collaboration, Collaboration drivers, Collaboration implementation models, 4h, Learning outcomes:1 2.Collaborative services design and implementation, 4h, Learning outcomes:2,3 3.Collaborative government-to-government services, 4h, Learning outcomes:3,4 4.Collaborative government-to-employee services, 4h, Learning outcomes:3,4 5.Collaborative government-to-citizen services, 4h, Learning outcomes:3,4 6.Collaborative government-to-business services, 4h, Learning outcomes:3,4 7.Implementation strategies, 4h, Learning outcomes:3,4,5 8.Future of collaboration technologies, 2h, Learning outcomes:5 9.n/a 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a 15.n/a				
Course content auditory	1.n/a 2.n/a 3.Collaborative systems case study, 4h, Learning outcomes:1,2 4.n/a 5.Collaborative systems case study, 4h, Learning outcomes:2,3 6.n/a 7.Existing and expected collaboration technologies illustrations, 4h, Learning outcomes:3,4 8.The synthesis of collaborative technologies and collaborative systems, 3h, Learning outcomes:1,2,3,4,5 9.n/a, 2h 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a				

	15.n/a
Course content laboratory	1.n/a 2.n/a 3.n/a 4.Conceptual modeling of collaborative systems, 4h, Learning outcomes:1,2,3,4 5.n/a 6.Conceptual modeling of collaborative systems, 4h, Learning outcomes:1,2,3,4 7.Conceptual modeling of collaborative systems, 4h, Learning outcomes:1,2,3,4 8.Presentation and discussion of conceptual models, 3h, Learning outcomes:1,2,3,4 9.n/a 10.n/a 11.n/a 12.n/a 13.n/a 14.n/a 15.n/a
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Overhead projector
Exam literature	Kolaborativne tehnologije uredskog poslovanja - podloge za predavanja
Students obligations	course attendance 70% Auditory exercises 70% laboratory exercises 80%
Knowledge evaluation during semester	n/a
Knowledge evaluation after semester	written exam 80% points oral exam 20% points
Student activities:	Aktivnost ECTS (Written exam) 6
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Prof. Mladen Mauher, Ph.D.

Code WEB/ISVU	23638/158110	**ECTS**	5.0	**Academic year**	2018/2019
Name	Project Management				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 90
Teachers	Lectures:1. Vesna Alić-Kostešić dipl.ing.stroj. Auditory exercises: Vesna Alić-Kostešić dipl.ing.stroj. Auditory exercises: Hrvoje Rakić , dipl.ing.stroj., pred. Seminar exercises: Vida Senci				
Course objectives	To introduce students to basic elements of management in the project based activities such as business, manufacturing and various services				
Learning outcomes:	1.ability to formulate /create the project goal in accordance with the strategy of an organization. Level:6,7 2.ability to formulate/to design a project according to a strategy of an organisation. Level: 3.ability to compose a proposal of a project and a project plan in a seminar paper. Level:6,7 4.ability to control processes in a project, its scope, time, costs, quality, people, communication, risks and project procurement . Level:6,7 5.ability to estimate the project risks on a project proposal. Level:6,7 6.ability to analyse the project phases and activities the results of which contribute to the project goal. Level:6 7.ability to standardise the time and resources necessary for carrying out activities by using techniques of network planning. Level:6,7 8.abilityto plan the expenses related to carrying out the project activities. Level:6,7 9.ability to analyse a project proposal through a logical matrix. Level:6 10.ability to develop willingness for teamwork and cooperation. Level:6,7 11.ability to combine methods and procedures for making decisions. Level:6,7 12.ability to state the influence of a project product on the environment. Level:7				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 10h in 150h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 10h in 150h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 10h in 150h 2.3.OSOBNE Etički i moralni pristup radu.: 10h in 150h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 20h in 150h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 20h in 150h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 20h in 150h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 10h in 150h 2.12.OSOBNE Fleksibilnost i prilagodljivost u iznalaženju tehničkih rješenja uz neupitno poštivanje temeljnih etičkih načela, pravnih normi i pravila struke.: 10h in 150h 3.5.SPECINF Realizirati kritičko razmišljanje te logičko stvaranje mišljenja u poslovnim i inženjerskim procesima: 10h in 150h 5.3.E-poslovanje Primijeniti formalne metode na analizu zahtjeva kod projektiranja poslovnih informacijskih sustava : 10h in 150h 6.4.E-uprava Primijeniti formalne metode na analizu zahtjeva kod projektiranja komponenti informacijskih sustava i podsustava uprave: 10h in 150h				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Discussion The whole material is presented in lectures illustrated by drawings, tables and graphs to facilitate understanding of the topic. It can be presented on OHP or in Power Point.				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Interactive problem solving Workshop Problems of each particular topic analysed are solved on the blackboard. After explaining and solving a problem of a topic, students are given a related one to solve it on their own but with assistance of the teacher. Using the BK technique and with assistance of their teacher, students create a smaller project.				
Methods of carrying out seminars	Group problem solving Discussion, brainstorming Workshop posters, markers, adhesive tape				
Course content lectures	1.The nature and context of project management processes and knowledge areas, 2h, Learning outcomes:1 2.Strategy and project management, 4h, Learning outcomes:1 3.Project management and stakeholders, 2h, Learning outcomes:2 4.Appropriate project organizational structure, 2h, Learning outcomes:2 5.The initial phase of the project, 2h, Learning outcomes:3 6.Initiating and Planning Project, 3h, Learning outcomes:4 7.Preparation of project proposal, 3h, Learning outcomes:4,5,7,10 8.Planning techniques, 4h, Learning outcomes:6,7,8 9.Implementation phase of the project, 4h, Learning outcomes:7,8,9,10 10.Concluding phase and evaluation of the project, 2h, Learning outcomes:7,8,10,11,12 11.Colloquium, 2h, Learning outcomes:1,2,3,4,5,6,8,9,10,11,12 12.no classes				

	13.no classes 14.no classes 15.no classes
Course content auditory	1.no classes 2.no classes 3.no classes 4.no classes 5.no classes 6.no classes 7.no classes 8.exercise TMP, CPM, 4h, Learning outcomes:7 9.exercise TMP, PERTH,PD, 4h, Learning outcomes:7 10.Colloqium, 2h, Learning outcomes:7 11.no classes 12.no classes 13.no classes 14.methods of decision-making, 2h, Learning outcomes:5,6,7,9 15.methods of project cycle - logical framework, 3h, Learning outcomes:5,6,7,9,10,11,12
Course content seminars	1.no classes 2.no classes 3.no classes 4. no classes 5. no classes 6. methods for problem solving, Brainstorming, making the problem tree and objective tree, elaboration of project ideas, 4h, Learning outcomes:9,10,11,12 7.working on the papers, 1h, Learning outcomes:9,10,11,12 8.working on the papers, 1h, Learning outcomes:9,12 9.working on the papers, 1h, Learning outcomes:9,10,11,12 10.working on the papers, 1h, Learning outcomes:9,10,11,12 11.working on the papers, 1h, Learning outcomes:9,10,11,12 12.working on the papers, 1h, Learning outcomes:9,10,11,12 13.working on the papers, 1h, Learning outcomes:9,10,11,12 14.working on the papers, 1h, Learning outcomes:9,10,11,12 15.papers due, 3h, Learning outcomes:9,11,12
Required materials	Basic: classroom, blackboard, chalk... Whiteboard with markers Overhead projector Operating supplies posters, markers, adhesive tape
Exam literature	PMI- Vodič kroz znanje o upravljanju projektima (Vodič kroz PMBOK,4. izdanje), Mate d.o.o., Zagreb 2011. nikolić, Čala, alić Kostešić: Metode planiranje u proizvodnji odjeće, ZS 2010. Čala,I; i ostali autori: Inženjerski priručnik, dio 4, poglavlja 6. Planiranje i praćenje proizvodnje, Školska knjiga, Zagreb, 2002. Vila, A; Štajdl, B; Čala, I; Karabajić, I: Metode planiranja proizvodnje, Informator, Zagreb, 1982. Vila, A; Leicher, Z: Planiranje proizvodnje i kontrola rokova, Informator, 3. izdanje, Zagreb 1983. Schroeder, Roger,G: Upravljanje proizvodnjom, Mate, Zagreb, 1999. Bilješke koje nastavnik priprema za nastavu Čala, I: Stupnjevito planiranje, izlaganje na savjetovanju Upravljanje proizvodnjom, CDI Zagreb, Briuni, 1989. Dilworth,J.B.: Operations Management, Mc Grow Hill, inc., New York, 1995. Schonberger,R.J., Knod, M.E.: Operations Management, Irwin, 1994. Majstorović, V.: Upravljanje Proizvodnjom i projektima (Production and Project Management), Nakladnici Sveučilište u Mostaru i DAAAM International Vienna, Mostar-Wien 2001.
Students obligations	delivery of a seminar paper
Knowledge evaluation during semester	1.colloquim - tasks numerical type max 50 points - 30 min 2.colloquim - objective type tasks maximum 50 points - 30 min 3.seminar work max 50 points - 30 min max total 150 points - 90 min Points rating 0-89 inadequate 90-105 sufficient 106-120 good 121-135 very good 136-150 excellent
Knowledge evaluation after semester	written exam, seminar paper Points rating 0-89 inadequate 90-105 sufficient 106-120 good 121-135 very good 136-150 excellent
Student activities:	Aktivnost — ECTS (Constantly tested knowledge) — 1 (Seminar Work) — 2 (Written exam) — 2

Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
ISVU equivalents:	130900;
Proposal made by	Vesna Alic Kostesic

Code WEB/ISVU	23141/130907	**ECTS**	5.0	**Academic year**	2018/2019
Name	Quality Management				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 90
Teachers	Lectures:dr.sc. Ljubivoj Cvitaš dipl.ing. Lectures:mr. Alenka Poljičak dipl.oec., viši predavač Auditory exercises:dr.sc. Ljubivoj Cvitaš dipl.ing. Auditory exercises: Sanja Đonlić dipl. ing. stroj. (mag. ing. mech.) Auditory exercises:mr. Alenka Poljičak dipl.oec., viši predavač Seminar exercises:dr.sc. Ljubivoj Cvitaš dipl.ing. Seminar exercises: Sanja Đonlić dipl. ing. stroj. (mag. ing. mech.) Seminar exercises:mr. Alenka Poljičak dipl.oec., viši predavač				
Course objectives	To transfer to students the basic knowledge related to quality management				
Learning outcomes:	1.ability to estimate to what point the regulations and norms concerning the quality of products or services are law-abiding. Level:7 2.ability to choose an appropriate quality tool for solving incompatibilities in processes, products or services. Level:7 3.ability to measure the level of stability and variability of a process. Level:7 4.ability to write a report on preventions or corrections that have been made towards the management or customers. Level:6,7 5.ability to buid a system of quality assurance on a model of a work organisation or institution. Level:6,7 6.ability to propose the activities which will introduce advancements in the existing processes in an organisation, to increase efficiency and reduce costs. Level:6,7 7.ability to manage the quality system in a chosen model of a work organisation or institution. Level:6,7 8.ability to devise a documented procedure to describe a process in the organisation model. Level:6,7				
Involvement of learning outcomes of the course in study programme:	1.1.OPĆI Služiti se stranim jezikom u literaturi i svakodnevnoj stručnoj komunikaciji. : 30h in 150h 1.2.OPĆI Primijeniti znanje matematike i fizike na inženjerske probleme.: 30h in 150h 1.3.OPĆI Koristiti tehnike, vještine i suvremene alate neophodne za inženjersku praksu.: 50h in 150h 1.4.OPĆI Povezati inženjerske aktivnosti konstruiranja, proizvodnje i marketinga s potrebama korisnika proizvoda i usluge.: 70h in 150h 1.5.OPĆI Identificirati, modelirati i rješavati inženjerske probleme.: 50h in 150h 1.6.OPĆI Osmišljavati i provoditi pokuse, analizirati i interpretirati dobivene podatke.: 50h in 150h 2.1.OSOBNE Znanje o suvremenim pitanjima struke i društva.: 50h in 150h 2.2.OSOBNE Odgovornost, dosljednost, točnost, ažurnost.: 60h in 150h 2.3.OSOBNE Etički i moralni pristup radu.: 40h in 150h 2.4.OSOBNE Kritička evaluacija argumenata, pretpostavki i podataka u cilju stvaranja mišljenja i pridonošenja rješenju problema.: 50h in 150h 2.5.OSOBNE Spremnost za rad na terenu i u nestandardnim uvjetima.: 10h in 150h 2.6.OSOBNE Iskustva rada u projektnim timovima i industriji.: 50h in 150h 2.7.OSOBNE Predstavljanje informacija, ideja, problema i rješenja stručnoj i općoj publici.: 40h in 150h 2.8.OSOBNE Komunikacijske vještine u okviru struke te s klijentima, na hrvatskom i engleskom jeziku.: 40h in 150h 2.9.OSOBNE Profesionalna i ljudska osobnost.: 20h in 150h 2.10.OSOBNE Prilagodljivost novim tehnologijama i tehnikama kao dio procesa cjeloživotnog učenja.: 30h in 150h 2.11.OSOBNE Otvorenost za nova znanja, iskustva i kulturne okolnosti.: 30h in 150h 2.12.OSOBNE Fleksibilnost i prilagodljivost u iznalaženju tehničkih rješenja uz neupitno poštivanje temeljnih etičkih načela, pravnih normi i pravila struke.: 30h in 150h 3.1.SPECINF Razumijevati mjesto i ulogu IT u kontekstu organizacije, menedžmenta i poslovnih procesa.: 60h in 150h 3.2.SPECINF Razumijevati domenu inženjerstva i tehnologija sukladno stupnju obrazovanja: 40h in 150h 3.3.SPECINF Povezati relevantne specifične discipline kao što su informacijsko-računarsko inženjerstvo i tehnologije u poslovnom okruženju: 20h in 150h 3.4.SPECINF Upotrijebiti stečena znanja za samostalno usvajanje novih znanja: 30h in 150h 3.5.SPECINF Realizirati kritičko razmišljanje te logičko stvaranje mišljenja u poslovnim i inženjerskim procesima: 30h in 150h				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Seminar, students presentation and discussion Other Drawings, tables and diagrams are used to facilitate understanding, as well as photographs and prepared materials used in companies.				
Methods of carrying out auditory exercises	Group problem solving Discussion, brainstorming Workshop Other problems are solved with students				
Methods of carrying out seminars	Data mining and knowledge discovery on the Web Discussion, brainstorming Workshop Other Student chooses an example to analyse, work on it and present for the group.				

Course content lectures	1.Introduction to the course, assessment of general concepts and definitions of quality, 4h, Learning outcomes:1,2,3,4,5,7,8 2.Systems standards, introduction to ISO 9001 Requirements for Management System, 4h, Learning outcomes:1,2,3,4,5,6,7,8 3.Collecting and displaying data, FMEA analysis, 3h, Learning outcomes:1,2,3,4,5,6,7,8 4.Process control and statistics, 3h, Learning outcomes:1,2,3,4,5,6,7,8 5.Repetition of topics S1-S4, 1h, Learning outcomes:1,2,3,4,5,6,7,8 6.Quality control of the process, SWOT analysis, 5S, 4h, Learning outcomes:1,2,3,4,5,6,7,8 7.Method six sigma, 3h, Learning outcomes:1,2,3,4,5,6,7,8 8.Product design, engineering, 3h, Learning outcomes:1,2,3,4,5,6,7,8 9.Method eight disciplines, 1h, Learning outcomes:1,2,3,4,5,6,7,8 10.Quality in procurement, 3h, Learning outcomes:1,2,3,4,5,6,7,8 11.Repetition of topics S5-S9, 1h, Learning outcomes:1,2,3,4,5,6,7,8 12.no lessons 13.no lessons 14.no lessons 15.no lessons
Course content auditory	1.Process development and manufacturing, FMEA analysis, 2h, Learning outcomes:1,2,3,4,5,6,7,8 2.Xsr R-map, the analysis of the production process, 2h, Learning outcomes:1,2,3,4,5,6,7,8 3.Key Performance Indicators, 2h, Learning outcomes:1,2,3,4,5,6,7,8 4.quality plans, 2h, Learning outcomes:1,2,3,4,5,6,7,8 5.8D method, internal audits, 2h, Learning outcomes:1,2,3,4,5,6,7,8 6.Presentation of seminar papers, 2h, Learning outcomes:1,2,3,4,5,6,7 7.no lessons 8.no lessons 9.no lessons 10.no lessons 11.no lessons 12.no lessons 13.no lessons 14.no lessons 15.no lessons
Course content seminars	1.Consultation and exercises, 1h, Learning outcomes:1,2,3,4,5,6,7,8 2.Consultation and exercises, 1h, Learning outcomes:1,2,3,4,5,6,7,8 3.Consultation and exercises, 1h, Learning outcomes:1,2,3,4,5,6,7,8 4.no lessons 5.no lessons 6.no lessons 7.no lessons 8.no lessons 9.no lessons 10.no lessons 11.no lessons 12.no lessons 13.no lessons 14.no lessons 15.no lessons
Required materials	Basic: classroom, blackboard, chalk... Whiteboard with markers Overhead projector
Exam literature	Bilješke koje nastavnik priprema za nastavu J.M.Juran, Quality Control Handbook, McGraw-Hill, New York, 1989. Juran, Joseph Moses; Frank M. Gryna. 1993, 1999, Planiranje i analiza kvalitete. MATE d.o.o. Zagreb E.L.Grant, R.S.Leavenworth, Statistical Quality Control, McGraw-Hill, New York, 1988. Lazibat, Tonči, 2009, Upravljanje kvalitetom, Znanstv. knjiga, Zagreb. Oslić, Ivica, 2008, Kvaliteta i poslovna izvrsnost, MEP Consult, Zagreb Štajdohar-Pađen, Olga, 2009, Plivati s ISO-m i ostati živ, Kigen, Zagreb
Students obligations	delivered seminars and evaluated with at least 8 points
Knowledge evaluation during semester	Redovitost pohaa#3#0#0$Kolokvij, teorijska pitanja#2#35#0$Seminarski rad#1#15#8$Domazada5#3#0$
Knowledge evaluation after semester	written and oral exam
Student activities:	Aktivnost — ECTS (Classes attendance) — 1 (Seminar Work) — 1 (Written exam) — 3
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	dr.sc. Ljubivoj Cvitaš dipl.ing., 1.6.2015

Code WEB/ISVU	23161/130930	**ECTS**	6.0	**Academic year**	2018/2019
Name	Security, interfaces and standardization in health IS				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole Lectures:mr.sc. Marinko Žagar viši predavač				
Course objectives	To familiarize students with the problems of Information security and application security policies. Understanding the specific standards in health care and knowledge of the most important interfaces for the transmission and storage of data in healthcare IS.				
Learning outcomes:	1.recommend standards used in information systems in health care. Level:7 2.assess security threats and vulnerabilities. Level:6,7 3.classified legislation in the field of e-business. Level:6,7 4. to present the concept information security. Level:6,7 5.critically assess implemented safety standards. Level:7 6.to select the appropriate interface for data transfer and storage. Level:7 7.to organize monitoring any changes in standards, interfaces and security policy. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Discussion Questions and answers				
Methods of carrying out auditory exercises	Traditional literature analysis Data mining and knowledge discovery on the Web Discussion, brainstorming Mind mapping				
Methods of carrying out seminars	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Mind mapping				
Course content lectures	1.Basic concepts of information security, 4h, Learning outcomes:1 2.Legislation in Information Security., 4h, Learning outcomes:2 3.The principles of information systems security., 4h, Learning outcomes:3 4.Standards and safety policy. Malicious programs and protection, 4h, Learning outcomes:4 5.Web application security and security in the cloud., 2h, Learning outcomes:2,3,4 6.Standardization in healthcare - IHE, ISO 27002, 27799, 31000, MBDS EHR-a , 4h, Learning outcomes:5 7.Interfaces in heterogeneous healthcare IS vendors - HL7., 4h, Learning outcomes:6,7 8.Interfaces in heterogeneous healthcare IS vendors - DICOM, 4h, Learning outcomes:6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content auditory	1.Standards and safety policy, 2h, Learning outcomes:1 2.Information Security Management System, 2h, Learning outcomes:2 3.ISO 27001 AnexA, 2h, Learning outcomes:1,2,3 4.Security policy, 1h, Learning outcomes:2,3 5.Organization of information security, 1h, Learning outcomes:3,4 6.Standards in health care., 2h, Learning outcomes:5 7.Interfaces in healthcare - HL7, 2h, Learning outcomes:6,7 8.Suja u zdravstvu - DICOM, 3h, Learning outcomes:6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content seminars	1.No exercise 2.No exercise 3.No exercise 4.Seminar - Information Security, 2h, Learning outcomes:1,2,3,4 5.Seminar - Information Security, 2h, Learning outcomes:1,2,3,4				

	6.Seminar - Standards in Healthcare, 3h, Learning outcomes:5 7.Seminar - interfaces in healthcare (HL7), 4h, Learning outcomes:5,6,7 8.Seminar - interfaces in healthcare (DICOM), 4h, Learning outcomes:5,6,7 9.No exercise 10.No exercise 11.No exercise 12.No exercise 13.No exercise 14.No exercise 15.No exercise
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Overhead projector
Exam literature	1. Prezentacije sa predavanja - moj.tvz.hr 2. Norma ISO/IEC 17799, 27001 3. Donald E. Eastlake, Kitty Niles,; Secure XML: The New Syntax for Signatures and Encryption, Addison-Wesley Pub Co; 1st edition (July 19, 2002) 4. Zakon o elektroničkom potpisu, elektroničkoj trgovini, zaštiti osobnih podataka, i sl. 5. Dragan Pleskonjić, Nemanja Maček, Borislav Đorđević, Marko Carić; Sigurnost računarskih sistema i mreža, Mikro knjiga, Beograd 2007. 6. Luke Harding; E.Snovden: Dosijei, EPH Media 2014. 7. A.Conry-Murray, V.Weafer; Sigurni na internetu; MIŠ 2005. 8. NORMA IHE, ISO 27002, 27799, 31000, MBDS EHR-a
Students obligations	Attendance of 70% of lectures and of 80% of exercises.
Knowledge evaluation during semester	Colloquium, theoretical issues control exam (30% points)
Knowledge evaluation after semester	Written exam - seminar 50% points). An oral exam - seminar (20% points)
Student activities:	Aktivnost — ECTS (Classes attendance) — 1 (Written exam) — 1 (Oral exam) — 1 (Constantly tested knowledge) — 1 (Research) — 1 (Seminar Work) — 1
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	PhD. Miroslav Slamić, college professor, April 2015.

Code WEB/ISVU	23190/130965	**ECTS**	6.0	**Academic year**	2018/2019
Name	Service Management (ITSM) in healthcare				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. Prof. dr. sc. Miroslav Slamić profesor visoke škole Lectures:2. dr.sc. Miroslav Mađarić dipl.inž.el. Laboratory exercises: Ivica Gospočić				
Course objectives	The aim of the course is to teach students the skills IS management in healthcare.				
Learning outcomes:	1.to create a system of project management and change of information systems in health care. Level:6,7 2.to support system master data management in healthcare.. Level:7 3.recommend the use of ISO 20000. Level:7 4.critically assess management system with regard to the integrity and data protection. Level:7 5.design a management concepts according to ITIL framework. Level:6,7 6.to propose training concepts personnel working for the IS in Healthcare. Level:6,7 7.predict the risks in the management of IS in Healthcare. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Discussion				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Laboratory exercises, computer simulations Traditional literature analysis Data mining and knowledge discovery on the Web Mind mapping				
Course content lectures	1.Introductory lecture in management information systems (IS) in health care., 4h, Learning outcomes:1 2.Master data management in health information systems., 4h, Learning outcomes:1 3.Change and project management information systems in accordance with the service (service) concept., 4h, Learning outcomes:2,3 4.Standards for Management Information Systems and use in health care environment - ISO20000., 4h, Learning outcomes:3,4 5.Legislation in the management of information systems with regard to the requirements of maintaining the integrity and privacy of patients., 4h, Learning outcomes:2,3,4 6.Infrastructure management IS using the ITIL (IT Infrastructure Library) framework., 4h, Learning outcomes:4,5,6 7.The framework and model for competence management, ICT experts for the purposes of information systems in health care by SFIA (Skills Framework for the Information Age) concept., 4h, Learning outcomes:6,7 8.Models of education and training specialists for management information systems in health care., 2h, Learning outcomes:6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Course content laboratory	1.Case Study - modeling of master data in the health system., 4h, Learning outcomes:1,2 2.Case Study - maintain master data in the health system., 4h, Learning outcomes:1,2 3.Case Study - standard ISO20000 management information systems of health., 4h, Learning outcomes:3 4.Case Study - standard ISO20000 management information systems of health., 4h, Learning outcomes:3 5.Case Study - Implementation of ITIL processes and mapping of these processes on the proper tools., 4h, Learning outcomes:4,5 6.Case Study - Development of measurement and metrics for reporting to the ITIL framework., 4h, Learning outcomes:4,5 7.Case Study - Development of measurement and metrics for reporting to the ITIL framework, 4h, Learning outcomes:5,6 8.Case Study - Defining requirements and investment planning for education of staff in IS., 2h, Learning outcomes:6,7 9.No lecture. 10.No lecture. 11.No lecture. 12.No lecture. 13.No lecture. 14.No lecture. 15.No lecture.				
Required materials	Basic: classroom, blackboard, chalk... Special purpose laboratory General purpose computer laboratory Whiteboard with markers Overhead projector				
Exam literature	1. Grupa autora: Nastavni materijali - prezentacije na moj.tvz.hr				

Students obligations	Attendance of 70% of the lectures and 80% exercises	
Knowledge evaluation during semester	No mid-term exam.	
Knowledge evaluation after semester	Evaluation of the written part of the seminar paper (70% points). Presentation of seminar paper (30% points).	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	

Code WEB/ISVU	24034/186735	**ECTS**	5.0	**Academic year**	2018/2019
Name	Software Engineering and Information Systems				
Status	1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course1st semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 90
Teachers	Lectures:dr.sc. Mladen Mauher prof.v.šk. Laboratory exercises:Dr. sc. Aleksandar Stojanović pred.				
Course objectives	To transfer to students the knowledge related to the processes of development and implementation of information systems, with the emphasis on standardised methods used in the analysis and design of systems, software design, maintenance and preparation for its implementation				
Learning outcomes:	1.ability to identify the basic terms, models and forms of control related to software engineering. Level:6 2.ability to present the flow of the process of software engineering. Level:6,7 3.ability to formulate/design the ways of identification and specification of requests put for a software system. Level:6,7 4.ability to relate the areas to the ways of designing software architecture. Level:6,7 5.ability to estimate the needs for data conversion and integration. Level:6,7 6.ability to anticipate the life cycle of a programming product. Level:6,7 7.ability to propose standards to be used in the development of networked business systems. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Case studies Demonstration Modelling Discussion Questions and answers				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Group problem solving Essay writing Discussion, brainstorming				
Course content lectures	1.Basic terms related to software engineering (software engineering models, software engineering management). , 2h, Learning outcomes:1 2.Basic terms related to software engineering (software engineering models, software engineering management). , 2h, Learning outcomes:1 3.Requests and specifications (system models and modelling, using prototypes, formal specificaton)., 2h, Learning outcomes:2 4.Requests and specifications (system models and modelling, using prototypes, formal specificaton)., 2h, Learning outcomes:2 5.System design (system architecture, architecture of distributed systems, object oriented approach, design of program modules, interface design, reusing software) , 2h, Learning outcomes:3 6.Verification and validation (debugging, methods used for verification and validation, implementation in various phases of software development). , 2h, Learning outcomes:4 7.Maintenance and evolution (strategy, types, dynamics and maintenance costs; control of configurations and system changes; inherited software, software reengineering and architectural transformation), 2h, Learning outcomes:4 8.Data conversion (taxonomy and data conversion systems, data transformation types, data integration supported by ontology, tools used in data integration), 2h, Learning outcomes:5 9.Documentation (types, needs, standards, dokumentation managemen). , 2h, Learning outcomes:6 10.Preparation and carrying out education related to system usage (user domain, technical domain), 2h, Learning outcomes:6 11.Carrying out transition to a new system (preparation, implementation, retiring the old system). , 2h, Learning outcomes:6 12.System and system modelling (system, types, models, system engineering, ontology). , 2h, Learning outcomes:6 13.Unified process and language used for system modelling, UML diagrams, stati modelling, dynamic modelling, modelling of business strategies, SOA modelling., 2h, Learning outcomes:7 14.Standardized business application systems, 2h, Learning outcomes:7 15.Generic technologies of business management, 2h, Learning outcomes:7				
Course content laboratory	1.Practical work 1, 2h, Learning outcomes:1 2.Practical work 2, 2h, Learning outcomes:1 3.Practical work 3, 2h, Learning outcomes:1 4.Practical work 4, 2h, Learning outcomes:2 5.Practical work 5, 2h, Learning outcomes:2 6.Practical work 6, 2h, Learning outcomes:2 7.Practical work 7, 2h, Learning outcomes:3,4 8.Practical work 8, 2h, Learning outcomes:3,4 9.Practical work 9, 2h, Learning outcomes:3 10.Practical work 10, 2h, Learning outcomes:3 11.Practical work 11, 2h, Learning outcomes:3 12.Practical work 12, 2h, Learning outcomes:3 13.Practical work 13 - design and production of comprehensive task, 2h, Learning outcomes:1,2,3 14.Practical work 14 - design and production of comprehensive task, 2h, Learning outcomes:1,2,3 15.Practical work 15 - design and production of comprehensive task, 2h, Learning outcomes:1,2,3				

Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Overhead projector
Exam literature	Basic literature: 1. Manger, R.: Softversko inženjerstvo, skripta, PMF-MO, 2013. 2. Mauher,M.: Programsko inženjerstvo, priručni separati, TVZ, 2012. Additional literature: 1. Sommerville Ian: Software Engineering, 9th Edition, Pearson, 2011. 2. R. S. Pressman: Software Engineering: A Practitioners Approach 6/e, McGraw-Hil, 2005
Students obligations	maximum of 30% absences from lectures maximum of 20% absences from exercises
Knowledge evaluation during semester	Lectures based learning outcomes, max 70 points Colloquium 1: Total of 35 outcome points, based on % of adequate answers to exam questions: 91%-100% = 35 points(5) 81%-90% = 31,5 points(4) 71%-80%= 28 points(3) 61%-70%=24,5 points(2) Less of 60% = inadequate outcomes Colloquium 2: Total of 35 outcome points, based on % of adequate answers to exam questions: 91%-100% = 35 points(5) 81%-90% = 31,5 points(4) 71%-80%= 28 points(3) 61%-70%=24,5 points(2) Less of 60% = inadequate outcomes
Knowledge evaluation after semester	Documented (laboratory) problem solution 10 points Oral exame 20 points Total of max. 100 points 91-100 = 5 81-90 = 4 71-80 = 3 61-70 = 2 Less of 60% = inadequate outcomes
Student activities:	Aktivnost ECTS (Written exam) 5
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Prof. Mladen Mauher, Ph.D.

Code WEB/ISVU	23177/130948	**ECTS**	6.0	**Academic year**	2018/2019
Name	Strategic technological entrepreneurship				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike (smjer raarstvo)) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike (smjer raarstvo)) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (0+30+0+0) 120
Teachers	Lectures:1. mr.sc. Sergej Lugović MBA Laboratory exercises: Dinko Horvat struč.spec.ing.techn.inf. Laboratory exercises:mr.sc. Sergej Lugović MBA Laboratory exercises:mag.oec Kristina Perec				
Course objectives	Entrepreneurship is unlike conventional business deals with the search of optimal business processes and functions. At the same time technology is rapidly evolving, and it creates a new environment for strategic development. The aim of the course is to harmonize the internal dynamics with external technological influences, creating a strategy that will suit to new processes and functions.				
Learning outcomes:	1.create entrepreneurship business strategy related to new technology. Level:6,7 2.examine business opportunities. Level:6,7 3.offer new business models based on technology development . Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Discussion				
Methods of carrying out laboratory exercises	Laboratory exercises on laboratory equipment Group problem solving Essay writing Discussion, brainstorming				
Course content lectures	1.Competitive Strategy, 3h, Learning outcomes:1,2,3 2.Innovation Strategy, 3h, Learning outcomes:1,2,3 3.The Business Story and Plan, 3h, Learning outcomes:1,2,3 4.Creativity and Product Development, 3h, Learning outcomes:1,2,3 5.Types of Ventures, 3h, Learning outcomes:1,2,3 6.Acquiring and Organising Resources, 3h, Learning outcomes:1,2,3 7.Acquisition and Global Expansion, 3h, Learning outcomes:1,2,3 8.Sources of Capital, 3h, Learning outcomes:1,2,3 9.Deal Presentations and Negotiations, 3h, Learning outcomes:1,2,3 10.Leading Ventures to Success, 3h, Learning outcomes:2,3 11.na 12.na 13.na 14.na 15.na				
Course content laboratory	1.Lab, 3h, Learning outcomes:1,2,3 2.Lab, 3h, Learning outcomes:1,2,3 3.Lab, 3h, Learning outcomes:1,2,3 4.Lab, 3h, Learning outcomes:1,2,3 5.Lab, 3h, Learning outcomes:1,2,3 6.Lab, 3h, Learning outcomes:1,2,3 7.Lab, 3h, Learning outcomes:1,2,3 8.Lab, 3h, Learning outcomes:1,2,3 9.Lab, 3h, Learning outcomes:1,2,3 10.Lab, 3h, Learning outcomes:1,2,3 11.na 12.na 13.na 14.na 15.na				
Required materials	Basic: classroom, blackboard, chalk... General purpose computer laboratory Whiteboard with markers Portable overhead projector				

Exam literature	Technology ventures. Dorf, Richard C., and Thomas H. Byers. McGraw Hill, četvrto izdanje,	
Students obligations	70% attendance, seminar and mandatory lab	
Knowledge evaluation during semester	Attendance review , rating exercises and lab work	
Knowledge evaluation after semester	Attendance review , rating exercises and lab work	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	
Proposal made by	mr.sc. Sergej Lugović MBA, 11.7.2014	

Code WEB/ISVU	23181/130952	**ECTS**	6.0	**Academic year**	2018/2019
Name	Strategy and policy of digital education				
Status	3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course3rd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				30+30 (15+0+15+0) 120
Teachers	Lectures:1. izv. prof. dr. sc. Petar Jandrić prof. v. šk. Auditory exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk. Seminar exercises:izv. prof. dr. sc. Petar Jandrić prof. v. šk.				
Course objectives	This course introduces students to foundations of policy and strategic planning in digital education				
Learning outcomes:	1.Formulate / define the main concepts in theory and practice of curriculum . Level:6,7 2.Critically assess the relationships between digital education and ideology . Level:7 3.Formulate / define key concepts in Critical Discourse Analysis . Level:6,7 4.Analyse policy and strategic documents in digital education. Level:6 5.Examine the notions of education and schooling . Level:6,7 6.Critically assess issues in adult education and lifelong learning . Level:7 7.Critically assess international perspectives to digital education . Level:7 8.Plan strategic development of digital education . Level:6,7 9.Present conclusions at an appropriate level. Level:6,7 10.Write a critical seminar on policy and strategic planning in digital education. Level:6,7				
Methods of carrying out lectures	Guest lecturer Case studies Discussion Questions and answers Seminar, students presentation and discussion Other e-learning				
Methods of carrying out auditory exercises	Group problem solving Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Other e-learning				
Methods of carrying out seminars	Essay writing e-learning				
Course content lectures	1.Theory and practice of curriculum (1) , 2h, Learning outcomes:1,2,9,10 2.Theory and practice of curriculum (2) , 2h, Learning outcomes:1,2,9,10 3.Digital education and ideology , 2h, Learning outcomes:2,9,10 4.Critical Discourse Analysis , 2h, Learning outcomes:3,9,10 5.Analysis of political and strateguc documents (1), 2h, Learning outcomes:3,4,9,10 6.Analysis of political and strateguc documents (2), 2h, Learning outcomes:3,4,9,10 7.Education and schooling , 2h, Learning outcomes:5,9,10 8.Adult digital education and lifelong learnings: links and contradictions , 2h, Learning outcomes:6,9,10 9.Useful knowledge and really udeful knowledge , 2h, Learning outcomes:7,9,10 10.Adult digital education, lifelong learning and citizenship , 2h, Learning outcomes:7,8,9,10 11.International perspectives to digital education (1) , 2h, Learning outcomes:6,7,8,9 12.International perspectives to digital education (2) , 2h, Learning outcomes:6,7,8,9 13.Digital education and social change , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 14.Strategic planning of digital education (1) , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 15.Strategic planning of digital education (2) , 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10				
Course content auditory	1.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 2.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 3.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 4.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 5.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 6.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 7.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 8.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 9.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 10.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 11.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 12.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 13.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 14.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 15.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10				
Course content seminars	1.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 2.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 3.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 4.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 5.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 6.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 7.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10				

	8.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 9.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 10.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 11.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 12.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 13.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 14.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10 15.Individual coursework, 2h, Learning outcomes:1,2,3,4,5,6,7,8,9,10
Required materials	Special equipment no equipment
Exam literature	Althusser, L. (2008). On ideology. London: Verso. Apple, M. W. (1990). Ideology and curriculum. London: Routledge. Bates, A. W. (2004). Upravljanje tehnološkim promjenama: Strategije za voditelje visokih učilišta. Prvo izdanje. Zagreb: CARNet/Benja. Jandrić, P. i Boras, D. (2012). Kritičko e-obrazovanje: borba za moć i značenje u umreženom društvu. Zagreb: FF Press i Tehničko veleučilište u Zagrebu. Latour, B. (2004). Politics of Nature. Cambridge, Massachusetts London, England: Harvard University Press. McLaren, P. (2010). Revolutionary Critical Pedagogy. InterActions: UCLA Journal of Education and Information Studies, 6(2). Noble, D. (1998). Digital Diploma Mills: The Automation of Higher Education. First Monday, 3(1-5). Polanyi, K. (2001). The great transformation: The political and economic origins of our time. Boston: Beacon Press. Van Dijk, J. (1999). The Network Society. London, UK: SAGE. Žižek, S. (Ur.). (1994). Mapping Ideology. London: Verso.
Students obligations	(1)Participation (0-30 points) (2)Coursework (0-70 points) A minimum of 15 points in participation is required for successful completion of the course!
Knowledge evaluation during semester	Continuous assessment of online activity.
Knowledge evaluation after semester	Coursework
Student activities:	Aktivnost — ECTS (Classes attendance) — 2 (Seminar Work) — 4
Remark	This course can be used for final thesis theme
Prerequisites:	No prerequisites.
Proposal made by	Dr Petar Jandrić

Code WEB/ISVU	23158/130926	**ECTS**	6.0	**Academic year**	2018/2019
Name	The health system and processes				
Status	2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Redovni specijalisti informatike) - elective course2nd semester - Polytechnic graduate professional study programme specialization in Informatics Engineering (NOVI Izvanredni specijalisti informatike) - elective course				
Teaching mode	Lectures + exercises (auditory + laboratory + seminar + metodology + construction) work at home				45+15 (0+0+15+0) 120
Teachers	Lectures:Prof. dr. sc. Miroslav Slamić profesor visoke škole Seminar exercises: Biserka Klarić Seminar exercises:Prof. dr. sc. Miroslav Slamić profesor visoke škole				
Course objectives	Show the students the big picture of the health care system, and the working and information processes. Introduction to the basic processes in a variety of health and para-medical institutions, as well as with the basic terminology. To introduce students with the specifics of the economics of information systems (IS) in health care (a procurement, budgeting, expense tracking, reporting to management, etc.).				
Learning outcomes:	1.identify elements of and stakeholders in the public health care system. Level:6 2.critically evaluate the models of health care and regulatory issues of the health care system. Level:7 3.to formulate and define processes in primary health care. Level:6,7 4.to develop a data model of the process in primary health care. Level:6,7 5.to analyse processes in hospital health care. Level:6 6.to develop processes and data models in hospital health care. Level:6,7 7.to plan of information resources to support the processes of health care. Level:6,7				
Methods of carrying out lectures	Ex cathedra teaching Guest lecturer Case studies Demonstration Discussion Seminar, students presentation and discussion				
Methods of carrying out seminars	Traditional literature analysis Data mining and knowledge discovery on the Web Essay writing Discussion, brainstorming Mind mapping				
Course content lectures	1.A review of the elements of the health system of the REPUBLIC OF CROATIA. The professional roles of stakeholders in the health care system., 4h, Learning outcomes:1 2.Models of health care., 4h, Learning outcomes:2 3.Relevant regulatory issues of the health care system of the REPUBLIC OF CROATIA., 4h, Learning outcomes:1,2,3 4.Standard terminology and nomenclature in the processes of the health system., 4h, Learning outcomes:1,2 5.The information space of the data of the health system of the REPUBLIC OF CROATIA. Use of information by professionals., 4h, Learning outcomes:3 6.Aggregation of health information and data., 4h, Learning outcomes:2,3 7.Processes in primary health care., 4h, Learning outcomes:3,4 8.Processes in hospital health care. Organizational structure (in terms of information flow). Medical equipment and technology in the function of the information process., 4h, Learning outcomes:5 9.Processes in hospital health care. The processes of treatment of the patient., 4h, Learning outcomes:5 10.Processes in hospital health care. . Elaboration of specific processes. The flow of data in the processes (source, authorization, storage). Expense tracking, 4h, Learning outcomes:5,6 11.Economics of the public-health system. General view on the economics of the health care system. Funding and procurement of information systems in health care., 5h, Learning outcomes:7 12.No lectures 13.No lectures 14.No lectures 15.No lectures				
Course content seminars	1.The definition of the statements of the paper., 2h, Learning outcomes:1,2,3 2.Elaboration of the elements of the paper., 2h, Learning outcomes:1,2,3 3.The collection of data for the seminar paper., 3h, Learning outcomes:1,2,3,4 4.Consultation on a term paper., 1h, Learning outcomes:1,2,3,4,5,6,7 5.Consultation on a term paper, 1h, Learning outcomes:1,2,3,4,5,6,7 6.Consultation on a term paper, 1h, Learning outcomes:1,2,3,4,5,6,7 7.Consultation on a term paper, 1h, Learning outcomes:1,2,3,4,5,6,7 8.Consultation on a term paper, 1h, Learning outcomes:1,2,3,4,5,6,7 9.Presentation of a term paper, 3h, Learning outcomes:1,2,3,4,5,6,7 10.No lectures 11.No lectures 12.No lectures 13.No lectures 14.No lectures 15.No lectures				
Required materials	Whiteboard with markers Overhead projector Video equipment				

Exam literature	1. Grupa autora: Prezentacijski materijali na WEB stranici TVZ-a i MOODLE sustava (moj.tvz.hr, moodle1.tvz.hr). 2. Javni dokumenti na WEB stranici HZZO-a (www.hzzo.hr) i centralnog informacijskog sustava HZZO-a (www.cezih.hr).	
Students obligations	Attendance of 70% of the lectures.	
Knowledge evaluation during semester	No mid-term exams	
Knowledge evaluation after semester	Evaluation of the written part of the seminar paper (70% points). Seminar work (30% points).	
Student activities:	Aktivnost (Written exam)	ECTS 6
Remark	This course can be used for final thesis theme	
Prerequisites:	No prerequisites.	