GODIŠNJAK TEHNIČKOG FAKULTETA Sveučilišta u Rijeci • ANNUAL REPORT - FACULTY OF ENGINEERING University of Rijeka 2010/2011

ISSN 1846-9795

Sveučilište u Rijeci
TEHNIČKI FAKULTET

University of Rijeka
FACULTY OF ENGINEERING

GODIŠNJAK TEHNIČKOG FAKULTETA Sveučilišta u Rijeci

ANNUAL REPORT FACULTY OF ENGINEERING University of Rijeka

2010/2011

GODIŠNJAK TEHNIČKOG FAKULTETA Sveučilišta u Rijeci

ANNUAL REPORT FACULTY OF ENGINEERING University of Rijeka

2010/2011

Sveučilište u Rijeci
Tehnički fakultet

University of Rijeka
Faculty of Engineering

ISSN 1846-9795

GODIŠNJAK TEHNIČKOG FAKULTETA SVEUČILIŠTA U RIJECI 2010/2011 /
ANNUAL REPORT OF THE FACULTY OF ENGINEERING UNIVERSITY OF RIJEKA 2010/2011

UDK / UDC: 378.662 (497.5 Rijeka) (058)

God. / Vol. 3
Str. / P. 1 - 227
Rijeka, 2011.

IZDAVAČ / PUBLISHER:
Tehnički fakultet Sveučilišta u Rijeci / Faculty of Engineering University of Rijeka

ADRESA UREDNIŠTVA / EDITORIAL BOARD ADDRESS:
Godišnjak Tehničkog fakulteta Sveučilišta u Rijeci /
Annual Report of The Faculty of Engineering University of Rijeka
51000 Rijeka, Vukovarska 58, Hrvatska / Croatia

Tel.: ++385 (0)51 / 651 – 444
Fax: ++385 (0)51 / 651 - 818
E-mail: dekanat@riteh.hr
URL: www.riteh.uniri.hr

UČESTALOST IZLAŽENJA / PUBLISHED:
Jednom godišnje / Annually

GRAFIČKA PRIPREMA I TISAK / DESIGNED AND PRINTED BY:
Fintrade & Tours d.o.o., Rijeka

NAKLADA / EDITION:
500 primjeraka / pcs.

SADRŽAJ / CONTENTS

PREDGOVOR DEKANA / DEAN'S PREFACE

Tehnički je fakultet službeno otvoren 8. studenoga 1960. godine kao Strojarski fakultet u Rijeci. Fakultet je u to doba djelovao u sastavu Sveučilišta u Zagrebu, a bio je to drugi fakultet u Hrvatskoj utemeljen radi izobrazbe diplomiranih inženjera strojarstva. Nastava prvih generacija odvijala se u okvirima brodostrojarskoga i tehnološkoga usmjerenja, a prvi studenti diplomirali su u srpnju 1965. godine. Dana 9. prosinca 2010. godine na Fakultetu je održan i susret te prve generacije.

Fakultet se danas, kao i cijelo riječko sveučilište, nalazi u tranzicijskom procesu u kojem se nastoji kvaltetno pozicionirati kao prepoznatljiva institucija unutar hrvatske i međunarodne znanstvene i visokoobrazovne scene. Na Fakultetu trenutno studira 1504 studenta. Nastava se izvodi sukladno Bolonjskome modelu, kroz 12 studijskih programa u poljima: strojarstvo, brodogradnja, elektrotehnika,

The Faculty of Engineering was officially opened on November 8th, 1960, as the Faculty of Mechanical Engineering in Rijeka. At that time, the Faculty pursued its activities within the University of Zagreb, and it was the second institution founded in Croatia to have educated graduate mechanical engineers. The first generation of students attended university courses in Marine and Technology Engineering, and accordingly, the first students graduated in July 1965. Not without pride, on December 9th, 2010, that first generation arranged a meeting at the Faculty.

The Faculty as well as the entire University of Rijeka has undergone transitional changes, trying to establish itself as an eminent institution within Croatian and international scientific and high educated community. At the moment, a total number of 1504 students are being educated at the Faculty. Education is carried out in compliance with the Bologna module, and there are 12 study courses in the fields of Mechanical

računarstvo, temeljne tehničke znanosti i interdisciplinarne tehničke znanosti. U akademskoj godini 2010/11. diplome su stekli: 71 magistar inženjer, 36 diplomiranih inženjera, 214 sveučilišnih prvostupnika, 40 stručnih prvostupnika i 5 inženjera. Tijekom akademske godine 2010/11. 8 je kandidata obranilo doktorske disertacije, što čini sveukupno 93 doktora znanosti školovanih na našoj instituciji.

Provodi se i nekoliko programa cjeloživotnoga dopunskog obrazovanja (Cisco akademija; program za stjecanje certifikata ECDL; stručno osposobljavanje servisera rashladnih i klimatizacijskih uređaja za rukovanje radnim tvarima u tehnici hlađenja; programi izobrazbe osoba koje provode energetske preglede i energetsko certificiranje zgrada). Prijedlog programa cjeloživotnog učenja *Projektni menadžment u razvoju proizvoda i proizvodnje* poslan je Sveučilištu u daljnju proceduru odobravanja. U sklopu Fakulteta djeluje i sveučilišna IT akademija koja provodi program cjeloživotnog obrazovanja *E-learning u nastavnoj praksi* i program obuke *Microsoft Partners in Learning.*

Tijekom akad. godine 2010/11. zatražili smo i dobili ovlaštenje za provođenje dijela postupka izbora u znanstvena zvanja u poljima Elektrotehnika i Interdisciplinarne tehničke znanosti. Za ovo potonje znanstveno polje dopusnicu je dobio i naš poslijediplomski doktorski studij. Također, dopusnicu smo dobili i za diplomski studij računarstva, čime smo zaokružili proces stručnog obrazovanja i u ovom polju. U veljači 2011. prihvatili smo

Engineering, Naval Architecture, Electrical Engineering, Computer Science, Basic Engineering Sciences and Interdisciplinary Engineering Sciences. In the academic year 2010/2011, the title of Master of Engineering has been earned by 71 candidates, Graduate Engineer by 36, University Bachelor by 214, Professional Bachelor by 40 and Engineer by 5 candidates. During the academic year 2010/2011, 8 candidates defended their doctoral dissertations, which make a total of 93 Ph. Ds educated at our institution.

Several additional programs of lifelong education are carried out (the Cisco Academy; the education program for acquiring ECDL certification; professional training programs for service technicians, i.e. technicians for refrigeration, air conditioning equipment and for refrigerant handling in refrigeration; programs for education persons who will be authorized to perform energy audits and energy certification of buildings). The proposed lifelong learning program - *Project management in product development and manufacturing* was sent to the further approval process that is to be carried out by the University. Within the Faculty, the university IT Academy carries out a program of lifelong learning *E-learning in teaching practice* and training program *Microsoft Partners in Learning.*

In the academic year 2010/2011, the Faculty requested and received authorization to carry out one part of the procedure for election to scientific titles in the fields of Electrical Engineering and Interdisciplinary Engineering Sciences. For this latter scientific field, accreditation was given to our postgraduate doctoral study. Also, accreditation was issued

na Fakultetskom vijeću izmijenjeni studijski program poslijediplomskoga doktorskog studija, u kojem je smanjen udio nastave u korist istraživanja, osuvremenjen je studijski program, a uveden je i niz mjera s ciljem podizanja kvalitete studija i postizanja istraživačke izvrsnosti naših doktoranada. U srpnju 2011. godine usvojili smo i prijedlog osnivanja poslijediplomskoga doktorskog studija iz polja *elektrotehnika*, a koji se trenutno nalazi u proceduri odobravanja i očekujemo da bi nastava na ovome studiju mogla započeti sljedeće akademske godine.

Trenutno se na Tehničkom fakulteta odvija istraživački rad u okviru 20 znanstvenih projekata koje financira MZOŠ i šest istraživačkih projekata koje financiraju ostali izvori. Tijekom prošle akademske godine kupljeno je znanstvene i laboratorijske opreme u vrijednosti više od milijun kuna, kao i računalne opreme u vrijednosti većoj od 300.000 kuna.

U listopadu prošle godine u Opatiji je održan znanstveni skup *Energija i okoliš*, s glavnom temom *Inženjerstvo budućnosti s malim emisijama*, a u lipnju je na Malom Lošinju održan 9. međunarodni kongres AMST 2011. Na oba se događaja Fakultet pojavio kao glavni suorganizator.

Tijekom akademske godine 2010/11. dobili smo i nekoliko vrlo uglednih nagrada i priznanja od kojih posebno treba istaknuti Fakultetu dodijeljenu Zlatnu plaketu *"Grb Grada Rijeke"* za uspješno polustoljetno

for the graduate study of Computer Science and the process of professional education in this field has been thus shaped up. In February, 2011, curriculum changes of postgraduate doctoral studies have been adopted by the Faculty Council, in which teaching activities were reduced in favour of research activities, the curricula and programs were updated and streamlined with the aim of enhancing the study and keeping abreast of research excellence in doctoral studies. In July 2011, the proposal for establishing postgraduate doctoral studies in the area of *Electrical Engineering* was adopted. The study is currently pending approval and accreditation so that this study is expected to be introduced in the next academic year.

At the Faculty of Engineering, research is currently being performed within 20 scientific projects funded by the MSES and six research ones funded by other sources. During the last academic year, the scientific state-of-the art equipment - worth over million and computer one worth more than 300.000 kunas were purchased.

Last year in October, a scientific Symposium *Energy and Environment* was held in Opatija, with the main theme *Engineering of the future with low emissions*, and in June, Ninth International Congress AMST 2011 was held in Mali Lošinj. At both events, the Faculty was the main co-organizer.

Also, in the academic year 2010/2011, the Faculty received several prestigious awards and plaudits among which we should highlight the Golden Plaque - *"The Emblem of the City of Rijeka"* for a successful half-century work in the field of engineering sciences,

djelovanje u području tehničkih znanosti, kreativan razvoj znanstvene misli i mnogobrojna ostvarenja u brodogradnji, strojarstvu i elektrotehnici u gradu koji baštini tehnički razvitak i napredak. Prof. dr. sc. Josip Brnić dobitnik je Nagrade Hrvatske akademije znanosti i umjetnosti za najviša znanstvena i umjetnička postignuća u Republici Hrvatskoj za 2010. godinu za područje tehničkih znanosti, a ukazana mu je i posebna počast izborom za počasnog profesora *Harbin Institute of Technology*, u Harbinu u Kini. Prof. dr. sc. Marko Čanađija i znanstveni novak Jonatan Lerga dobitnici su godišnjih nagrada Zaklade Sveučilišta u Rijeci za područje tehničke i prirodne znanosti. Student Robert Blažić dobitnik je nagrade *Ivan Luppis* za 2010. godinu za inovaciju pod nazivom *Diferencijal trkaćeg automobila*, dok je studentica Tea Arrigoni dobitnica *Rektorove nagrade.*

Tijekom prošle i početkom ove akademske godine potpisali smo više ugovora ili sporazuma o znanstvenoj, nastavnoj i stručnoj suradnji, i to s: Institut Superior Technico, Lisabon, Portugal; Poznan University of Technology, Poznanj, Poljska; CIMOS, Kopar; TPS, Labin; Uljanik Tesu Elektronika, Pula; UNDP Hrvatska.

Nažalost, prošla akademska godina imala je i svoju crnu stranu kada su u svibnju u Poljskoj u prometnoj nesreći nastradali naši profesori Branimir Barišić, Bruno Čalić i Livio Šušnjić. Za kolegu Barišića ta je nesreća tragično završila, dok je kolega Šušnjić doživio teže tjelesne ozljede i još se uvijek nalazi na rehabilitaciji.

the creative development of scientific thought and many achievements in naval architecture, mechanical engineering and electrical engineering, all that actually in the city of Rijeka that has bequeathed technical development and progress. Prof. Josip Brnić, Ph.D. was granted the Award by the Croatian Academy of Arts and Sciences for the highest scientific and artistic achievements in the Republic of Croatia for the year 2010 in the field of engineering sciences, and a special tribute was given to him when elected an Honorary Professor of the Harbin Institute of Technology, Harbin, China. Prof. D. Sc. Marko Čanađija and researcher Jonatan Lerga won the annual award from the University of Rijeka for engineering and natural sciences. Student Robert Blazić won the *Ivan Luppis* for the year 2010, for the innovation called *The Differential of the racing car* whereas female student Tea Arrigoni received the *Rector's Award.*

During last year and the beginning of this academic year, the Faculty has concluded a lot of contracts or agreements on scientific, teaching and professional collaboration, in particular with: Instituto Superior Technico, Lisbon, Portugal; Poznan University of Technology, Poznan, Poland; CIMOS, Kopar; TPS, Labin; Uljanik Tesu Electronics, Pula; Croatia UNDP.

Unfortunately, the past academic year turned out to have its dark side. In May, our professors Branimir Barisic, Bruno Čalić and Livio Šušnjić were involved in a car accident in Poland. For our colleague Barišić, this accident ended tragically, whereas colleague Šušnjić suffered serious injuries and is still on rehabilitation.

Tehnički je fakultet danas ustrojen kroz 11 zavoda, 37 katedri i 49 laboratorija te zajedno sa stručnim službama, Računalnim centrom, i knjižnicom Fakultet danas predstavlja modernu visokoškolsku i znanstvenu instituciju. Sa svoja 193 djelatnika, od koji je više od 140 izabranih u neko od znastveno--nastavnih, nastavnih ili stručnih zvanja, u punom ili djelomičnom radnom odnosu, i među kojima blizu 70 ima stupanj doktora znanosti, Tehnički fakultet danas zasigurno predstavlja jednu od najvažnijih sastavnica Sveučilišta u Rijeci u ostvarenju cilja da se ono profilira kao istraživačko sveučilište.

Dekan
Prof. dr. sc. Goran Turkalj

The Faculty of Engineering is now established through 11 departments, 37 sub-departments and 49 laboratories and together with professional services, Computer Center and the library; it is today a modern higher education and research institution. With its total number of 193 employees, of which more than 140 were elected to some of science-teaching, teaching or professional titles, in full or part-time employment and of which almost 70 earned the title of Doctor of Science, the Faculty of Engineering today certainly represents one of the most important constituents of the University in Rijeka which is to gain prominence as a research university.

Dean
Full Prof. D. Sc. Goran Turkalj

IN MEMORIAM - BRANIMIR BARIŠIĆ

Branimir Barišić rođen je 19. svibnja 1969. godine u Banjoj Luci, gdje je završio osnovnu školu i gimnaziju matematičko-informatičkog usmjerenja. Godine 1993. upisao je studij strojarstva na Tehničkom fakultetu Sveučilišta u Rijeci, gdje je i diplomirao 3. srpnja 1997. godine na smjeru Proizvodno strojarstvo.

Na našem se fakultetu zaposlio 1. rujna 1997. godine kao asistent na *Zavodu za industrijsko inženjerstvo i menadžment*. Zvanje magistra znanosti stekao je 2002. godine na Tehničkom fakultetu obranom rada pod nazivom „Analiza procesa izvlačenja i istiskivanja primjenom stohastičkog i numeričkog modeliranja", a doktorsku disertaciju pod nazivom „Analiza pojave Lüdersovih traka u procesu izrada proizvoda iz tankostjenog lima" obranio je 2006. godine. Iste godine biva izabran u znanstveno-nastavno zvanje docenta, a u zvanje izvanrednog profesora 2009. godine. Održavao je nastavu iz područja tehnologije oblikovanja metala i tehnike mjerenja. Bio je voditelj Katedre za mjernu tehniku i sustave kvalitete te Laboratorija za tehnička mjerenja pri Zavodu za industrijsko inženjerstvo i menadžment. Od listopada 2010. godine obnašao je funkciju prodekana za poslovne odnose.

Branimir Barišić se tijekom svoje karijere specijalizirao u Italiji, Švicarskoj, Poljskoj, Sloveniji, Slovačkoj, Mađarskoj, Bugarskoj, Rumunjskoj, Češkoj i Velikoj Britaniji. Bio je glavni urednik znanstvenog časopisa *Engineering Review* koji izdaje Tehnički fakultet u Rijeci, a bio je i član uredništava međunarodnih znanstvenih časopisa *CA*

Branimir Barišić was born on May 19, 1969, in Banja Luka, where he finished elementary school and secondary school - gymnasium, the course of Mathematical Informatics. In 1993, he enrolled to study Mechanical engineering at the Faculty of Engineering of the University in Rijeka and earned his degree on July 3, 1997, in the field Mechanical Production Engineering.

On September 1, 1997, he was employed at the Faculty of Engineering as assistant lecturer at the Department of industrial engineering and management. In 2002, at the Faculty of Engineering, he won a master's degree with the thesis „Analysis of the process of drawing and extrusion using stochastic and numerical modelling", whereas his doctoral thesis under the title „Analysis of the appearance of Lüders bands in the process of production from thin sheet metal" was defended in 2006. After earning doctoral degree he was appointed assistant professor in 2006 and subsequently, associate professor in 2009. He held classes in the field of metal forming technology and measurement techniques. He was head of the Chair in measurement techniques, quality systems and of the Laboratory of engineering measurements at the Department of industrial engineering and management. Since September 2010 he was filling a post of sub-dean of business affairs.

During his career, Branimir Barišić was specializing in Italy, Switzerland, Poland, Slovenia, Slovakia, Hungary, Bulgaria, Rumania, the Czech Republic and Great Britain.

He was editor- in- chief of the scientific magazine Engineering Review that is published by the Faculty of Engineering in Rijeka, and also, a member of the editorial board of

Systems in Production Planning, *Journal for Technology of Plasticity* i *IRT 3000*. Također, bio je jedan od suosnivača te urednik IN-TECH (*International Conference on Innovative Technologies*) konferencije. Kao član znanstvenih ili organizacijskih odbora sudjelovao je na više od 30 međunarodnih znanstvenih skupova. Područja njegova znanstvenog istraživanja i djelovanja bila su: tehnologija oblikovanja metala, modeliranje, simulacija i optimiranje procesa oblikovanja te mjerna tehnika. Iz tih je područja kao autor i suautor objavio dvije knjige na engleskom jeziku, 153 znanstvena rada, od čega 18 radova u časopisima indeksiranim u bibliografskim bazama CC, SCI i/ili SCI-Exp te 8 poglavlja u knjigama, što ga je svrstavalo u red najplodonosnijih mlađih znanstvenika u području tehničkih znanosti u Republici Hrvatskoj. Izumitelj je patentirane tehnologije namijenjene oblikovanju metalnih proizvoda. Od siječnja 2007. godine bio je voditelj znanstvenoistraživačkog projekta „Numeričko modeliranje, simulacija i optimizacija u oblikovanju lima" koji financira Ministarstvo znanosti, obrazovanja i športa Republike Hrvatske. Kao istraživač sudjelovao je na tri nacionalna znanstvenoistraživačka projekta financirana od strane Ministarstva znanosti, obrazovanja i športa Republike Hrvatske: „Modeliranje procesa plastične obrade" (broj: 069017; trajanje: 1997–2002), „Modeliranje i simulacija procesa primjenom genetskog i stohastičkog algoritma" (broj: 0069021; trajanje: 2002–2006) te „Modeliranje naprednih proizvodnih struktura kod inteligentne proizvodnje" (broj: 0069021; trajanje: od 2007. godine). Surađivao je i na više stručnih projekata s industrijom. Kao hrvatski suradnik sudjelovao je na TEMPUS--ovu projektu pod nazivom "Education quality

international scientific magazines CA Systems in Production Planning, Journal for Technology of Plasticity and IRT 3000. Additionally, he was one of the co-founders and editor-in-chiefs of IN-TECH (International Conference on Innovative Technologies) Conference. As a member of scientific and organizing boards, he participated in more than 30 international scientific meetings. The fields of his scientific researches and activities were: metal forming technology, modelling, simulation and optimisation of the process of forming and measuring techniques. In these fields, he published either as author or co-author two books in English and more than 150 scientific works, of which 18 papers in magazines were indexed in bibliographic databases CC, SCI and/or SCI-Exp, which ranked him among the most productive younger scientists in the fields of engineering science of the Republic of Croatia.

He was an inventor of patented technology for metal forming products. Since January 2007, he was the head of the science research project „Numerical modelling, simulation and optimisation in thin sheet metal", financed by the Ministry of science, education and sport of the Republic of Croatia.

As a researcher, he participated in three national scientific-research projects financed by the Ministry of science, education and sport of the Republic of Croatia e.g.: „Modelling of the process of plastic treatment" (number :069017; duration:1997-2002), „Modelling and simulation of the process by the application of genetic and stochastic algorithm" (number:0069021; duration:2002-2006), „Modelling of developed production structures with intelligent production" (number:0069021; duration since the year of 2007). While working on two professional projects, he collaborated on the former project financed by PC Buzet LLC and the latter one financed by Luka Rijeka

improvement by E-learning technology" (UM_JEP-19105-2004). Bio je i voditelj jednog od CEEPUS-ovih programa razmjene za srednjoeuropske sveučilišne studije pod nazivom „Concurrent Product and Technology Development – teaching, research and implementation of joint programs oriented in production and industrial engineering" (HR-0108). Prof. Barišić bio je posebno ponosan na činjenicu da je 18. ožujka ove godine na Ministarskoj konferenciji održanoj u Varšavi taj program osvojio treće mjesto u ukupnom vrednovanju CEEPUS-ovih europskih programa, što je do danas najbolji rezultat jednog CEEPUS-ova programa koji koordinira neki od hrvatskih voditelja.

Njegov životni put prerano je prekinut 28. svibnja 2011. godine kada je pri povratku iz posjeta Tehničkom sveučilištu u Poznanju u Poljskoj doživio tešku prometnu nesreću.

Profesor Branimir Barišić bio je izniman suradnik, veliki radoholičar i vječiti optimist. Problemima se nikada nije izmicao, već se s njima hvatao ukoštac, a mira nije imao sve dok te probleme ne bi riješio. Njegovu golemu radnu energiju bilo je nemoguće ne primijetiti, a ponekad ga zbog nje nije bilo lako ni pratiti. U svojem radu znao je i pogriješiti, ali kao i svi ljudi neopterećeni vlastitom taštinom, znao je svoje pogreške priznati. Svi oni koji su ga bolje poznavali znali su da Branimir Barišić nije bio samo velik radnik nego i čovjek velikog srca i nježne duše, iznimno privržen svojoj obitelji – supruzi Mirjani i kćerkici Pauli.

Zbogom Branimire, svima ćeš nam jako nedostajati.
Počivao u miru.

Ltd. As Croatian collaborator he participated in TEMPUS project under the title „Education quality improvement by E-learning technology" (UM_JEP-19105-2004). Besides, he was the head of one of CEEPUS programmes for Middle-European studies under the title "Concurrent product and technology development - teaching, research and implementation of joint programmes oriented in production and industrial engineering „ (HR-0108). Branimir was especially proud of the fact that on March 18, 2011, at the Conference of Ministry held in Warsaw, this program won the third place in the overall CEEPUS European programme ranking. Certainly, until these days, this has been the best result one CEEPUS program ever achieved while being coordinated by some of Croatian project managers.

On 28 May, 2011, while returning home from a visit to The Faculty of Engineering in Poznan in Poland, Professor Barišić had a tragic car accident, in which he lost his life momentarily.

He was an extraordinary collaborator, workaholic and a great optimist. He was not a person who evaded and avoided problems but the person who always readily got to grips with them and he would never be at peace until the problems were solved. He was a person of enormous life energy that we could not fail to observe. Occasionally, it was not even easy to keep up with him, which was evident to everybody that collaborated closely with him. Clearly, like all great workers, he used to make mistakes and wrong judgments but also like all persons free from any vanity, he would admit his errors. Branimir was known for his great heart and extremely tender soul, especially when he talked about his family – his wife Mirjana and little daughter Paula.

Farewell Branimir, we will all miss you.
May you rest in peace.

1. OPĆE INFORMACIJE O FAKULTETU / GENERAL INFORMATION

Tehnički fakultet Sveučilišta u Rijeci stožerna je visokoškolska i znanstvenoistraživačka institucija na području tehničkih znanosti ne samo na Sveučilištu u Rijeci nego i u regiji u kojoj djeluje, konkurentna na europskom i svjetskom tržištu znanja. Fakultet objedinjuje danas djelatnost 11 zavoda, i to:

- Zavoda za automatiku i elektroniku;
- Zavoda za brodogradnju i inženjerstvo morske tehnologije;
- Zavoda za elektroenergetiku;
- Zavoda za industrijsko inženjerstvo i menadžment;
- Zavoda za konstruiranje u strojarstvu;
- Zavoda za matematiku, fiziku, strane jezike i kineziologiju;
- Zavoda za materijale;
- Zavoda za mehaniku fluida i računarsko inženjerstvo;
- Zavoda za računarstvo;
- Zavoda za tehničku mehaniku;
- Zavoda za termodinamiku i energetiku.

U sklopu zavoda djeluje 37 katedri i 50 laboratorija, a na Fakultetu djeluju i Računalni centar, Knjižnica, te Financijska služba, Služba općih i kadrovskih poslova, Služba studentske evidencije i Tehnička služba.

The Faculty of Engineering of the University of Rijeka is a leading higher education, scientific and research institution in the field of technical sciences not only at the University of Rijeka, but also in the region where it is situated. It is competitive on the European and the world knowledge market. The Faculty encompasses today 11 departments, namely:

- Department of Automation and Electronics;
- Department of Naval Architecture and Ocean Engineering;
- Department of Electric Power Systems;
- Department of Industrial Engineering and Management;
- Department of Mechanical Engineering Design;
- Department of Mathematics, Physics, Foreign Languages and Kinesiology;
- Department of Materials Science and Engineering
- Department of Fluid Mechanics and Computational Engineering;
- Department of Computer Science;
- Department of Engineering Mechanics;
- Department of Thermodynamics and Energy Engineering.

37 chairs and 50 laboratories operate within the departments, while the Faculty encompasses also a Computer Centre, a Library as well as an Accounting Division, the General and Personnel Office, the Students' Record Office and the Maintenance Services.

Od 190 zaposlenika 64 ih je u znanstveno--nastavnim, 36 u nastavnim i suradničkim zvanjima, 38 je znanstvenih novaka, a 52 je djelatnika u administrativnim i stručnim službama. Na Fakultetu rade i 43 vanjska suradnika.

Fakultet izvodi sveučilišne preddiplomske, sveučilišne diplomske te stručne studijske programe na polju strojarstva, brodogradnje, elektrotehnike i računarstva, kao i trogodišnji treći ciklus obrazovanja koji omogućava stjecanje doktorata znanosti na području tehničkih znanosti, i to na polju strojarstva, brodogradnje te temeljnih tehničkih znanosti. Gotovo 4300 doktora znanosti, magistara znanosti, diplomiranih inženjera i inženjera steklo je svoje diplome na Fakultetu, a danas tu studira oko 1400 studenata. Do sada je na Tehničkom fakultetu u Rijeci diplome steklo 93 doktora znanosti, 95 magistara znanosti, 2878 diplomiranih inženjera (od čega 2325 strojarstva, 308 brodogradnje i 245 elektrotehnike), 136 magistara inženjera (od čega 37 strojarstva, 24 brodogradnje i 75 elektrotehnike), 1531 inženjer (od čega 714 strojarstva, 107 brodogradnje i 710 elektrotehnike) te 554 prvostupnika inženjera (od čega 221 strojarstva, 51 brodogradnje, 270 elektrotehnike i 12 računarstva). Danas tu studira više od 1500 studenata.

Tehnički fakultet ima dugu tradiciju izdavanja znanstvenih i stručnih radova. Tiskanje Zbornika radova započinje još 1970. godine, a 1988. godine spomenuta edicija mijenja naziv u Zbornik Tehničkog fakulteta Rijeka. Naziv se ponovo mijenja 1995. godine u *Engineering Review*, a pod tim nazivom časopis se tiska i danas. Osim znanstvenih i stručnih radova, djelatnici Fakulteta objavili su i brojne knjige i udžbenike.

Na Fakultetu je od 24. studenog 2000. godine aktivan Alumni klub Tehničkoga fakulteta

Of 190 employees, 64 are professors, 36 lecturers and assistants, 38 junior researchers and 52 work in the administrative and professional staff section. 43 external collaborators also work at the Faculty.

The Faculty holds undergraduate university, graduate university and vocational study programs in mechanical and electrical engineering, naval architecture as well as post-graduate doctoral studies and in Computer science in the fields of mechanical engineering, naval architecture and basic technical sciences. So far at the Faculty of Engineering in Rijeka graduated 93 PhDs, 95 Masters of Science, 2878 Graduated Engineers (of which 2325 Mechanical Engineering, 308 Naval Architecture and 245 Electrical Engineering), 136 Masters (of which 37 Mechanical Engineering, 24 Naval Architecture and 75 Electrical Engineering), 1531 Engineer (of which 714 Mechanical Engineering, 107 Naval Architecture and 710 Electrical Engineering), and 554 Bachelor's (of which 221 Mechanical Engineering, 51 Naval Architecture, 270 Electrical Engineering and 12 Computer Science). Today, there are more than 1,500 students on this faculty.

The Faculty of Engineering has a long tradition of publishing scientific and technical papers. *Proceedings* were first published as far back as 1970, and then in 1988, the mentioned edition was renamed into the *Proceedings of the Faculty of Engineering Rijeka*. In 1995, this title was renamed again into *Engineering Review*, and accordingly, this professional journal is still being published under this title. Except for scientific and technical papers, an array of books and textbooks has been published by teaching staff of our Faculty.

Furthermore, the Alumni Club of the Faculty of Engineering University Rijeka (abbreviated

Sveučilišta u Rijeci (skraćeno ALUMNI TFR) osnovan s primarnim ciljem izgradnje i jačanja veza i suradnje između bivših studenata i Tehničkoga fakulteta, ali i između bivših studenata međusobno. Predsjednik ALUMNI TFR je prof. dr. sc. Zmagoslav Prelec, dipl. ing., a na dan 30. 9. 2011. godine ukupni broj registriranih članova kluba ALUMNI TFR iznosi 158.

Dobrovoljno darivanje krvi na Fakultetu provodi se još od 1980. godine. U novije doba ta hvalevrijedna aktivnost provodi se organizirano od 2002. godine, pri čemu se u okviru 3 akcije godišnje prikupi između 150 i 200 doza krvi. Proteklih godina glavni organizator darivanja krvi je prof. dr. sc. Roberto Žigulić, a pomažu mu i članovi Kluba 25. Krv u podjednakom broju daruju i zaposlenici i studenti.

Na TFR od 1990. god. djeluje i podružnica Nezavisnog Sindikata znanosti i visokog obrazovanja. Osim zaštite prava svojih članova sindikalna podružnica na Fakultetu obavlja i zadatke iz djelokruga rada Zaposleničkog vijeća koje na fakultetu nije konstituirano. Glavni povjerenik Podružnice je prof. dr. sc. Roberto Žigulić.

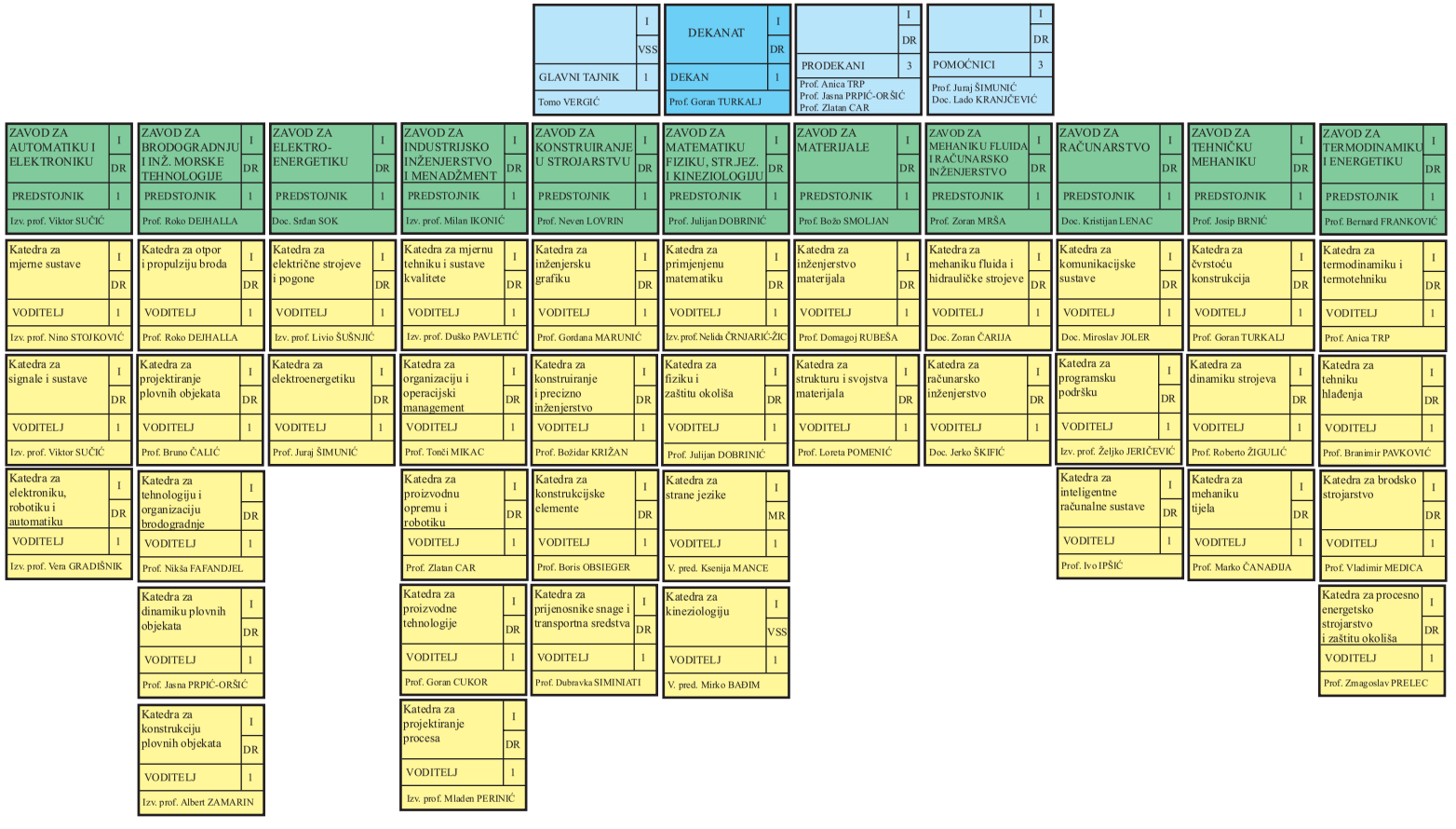
Fakultet aktivno surađuje s gospodarskim, visokoškolskim i znanstvenim subjektima u bližoj i daljoj okolici te se, uz naglasak na daljnjem razvoju znanstvenoistraživačke i nastavne djelatnosti i na njihovoj kvaliteti, ubrzano radi na integraciji u europski prostor znanosti i visokog obrazovanja.

ALUMNI TFR), founded with the primary aim of establishing and strengthening ties and cooperation not only between alumni and the Faculty of Engineering but also among the alumni themselves, has been pursuing various activities at the Faculty since November 24, 2000. On September 30, 2011, with Prof. Zmagoslav Prelec Ph.D. in the chair, ALUMNI TFR has a total of 158 registered members of ALUMNI TFR.

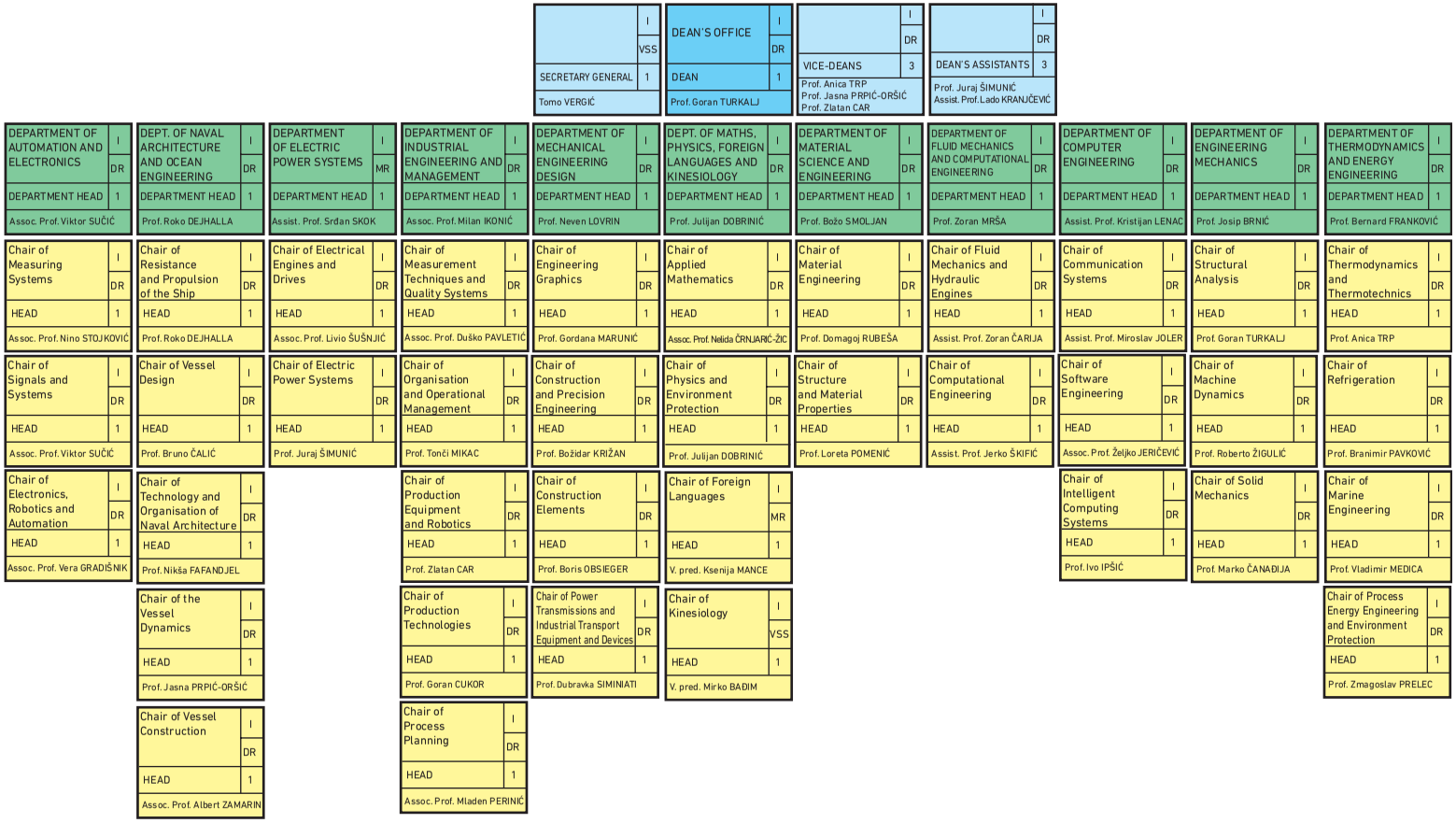
It is also worth pointing out that blood drive has been carried out at the Faculty since early 1980. Lately, in fact since 2002, this praiseworthy voluntary blood donation programme has been carried out in an organized manner and during 3 annual actions the actual blood collection is approximately between 150 and 200 blood doses. For the past years, the main organizer of blood donation has been Prof. Roberto Žigulić Ph.D., assisted by the members of the Club 25. Blood has been donated equally by faculty staff and students.

Since 1990, a subsidiary of the Independent Trade Union of Science and Higher Education has been active at the Faculty of Engineering. Apart from protecting the rights of its members, the union branch carries out tasks within the scope of workers' Council at the Faculty, which was not actually constituted at the Faculty. Chief Commissioner of the subsidiary is Prof. Roberto Žigulić, Ph.D.

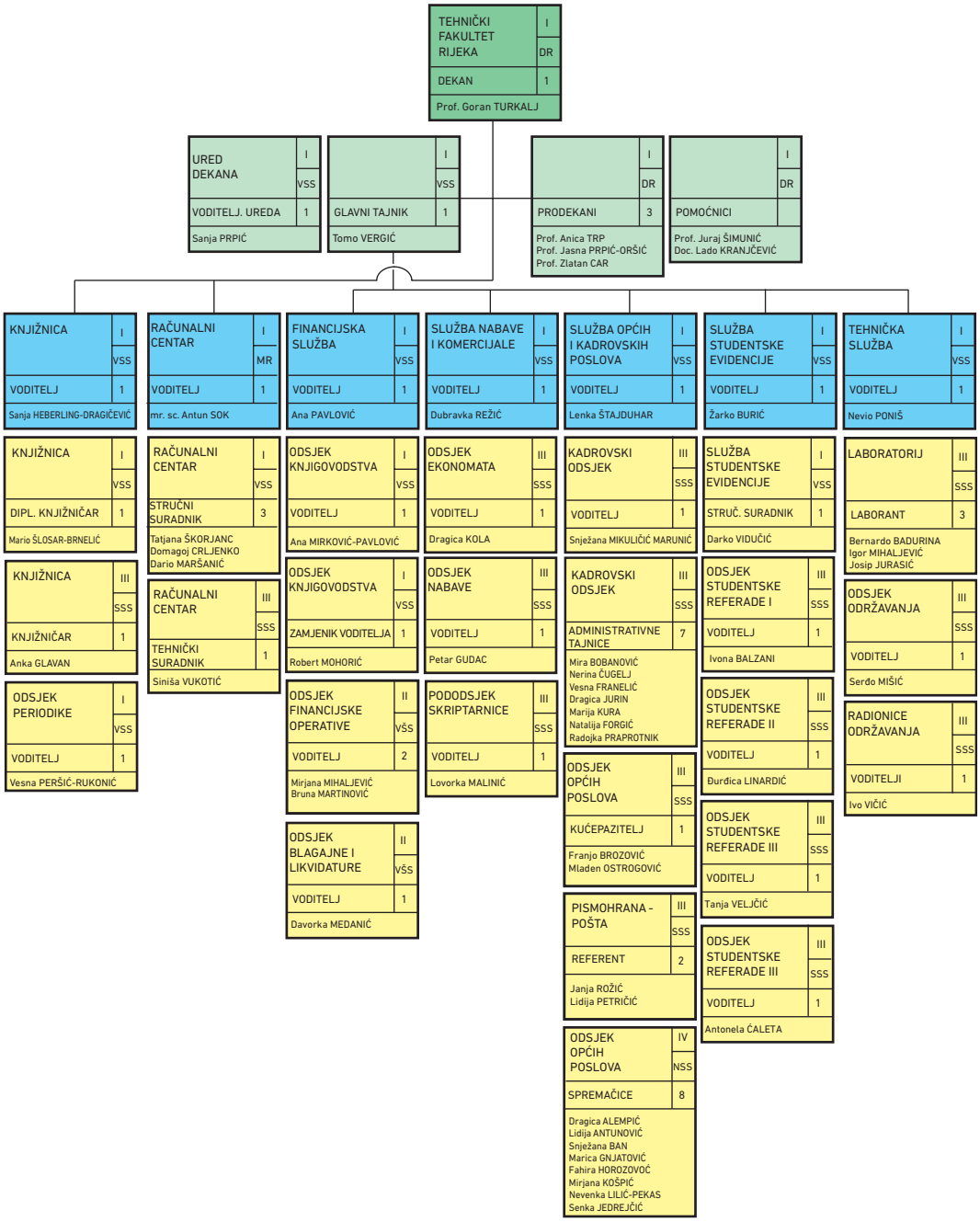
The Faculty actively collaborates with industrial, higher education and scientific institutions in its vicinity and farther away. It is also an institution which develops dynamically, and seeks to attain integration into European standards of science and higher education, always bearing in mind development of scientific reasearch and teaching quality.



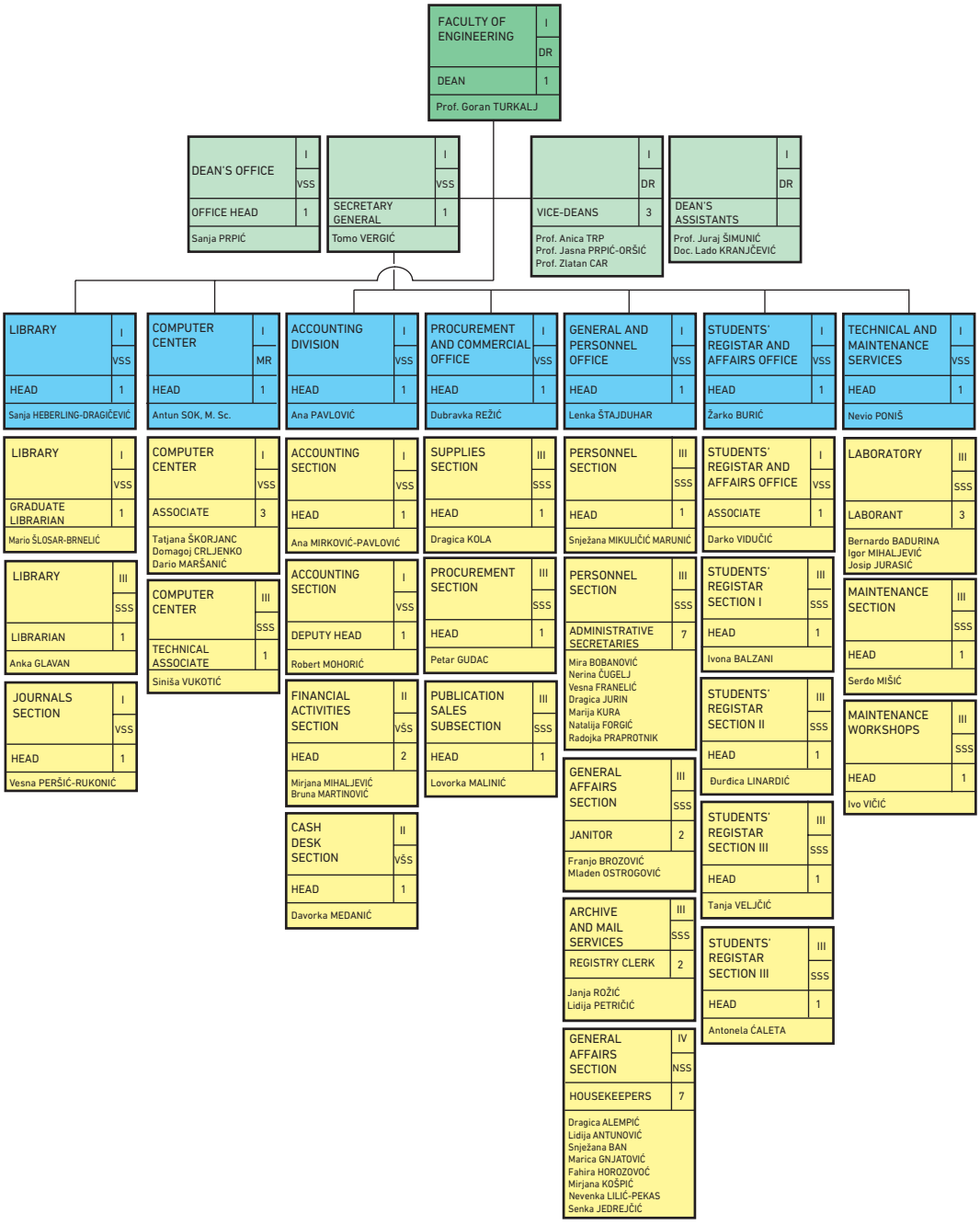
Organizacijska struktura Fakulteta - Zavodi i katedre



Organisational Structure of the Faculty - Departments and Chairs



Organizacijska struktura Fakulteta - Stručne službe



Organisational Structure of the Faculty - Professional and Administrative Staff

2. FAKULTET OD OSNUTKA DO DANAS / FACULTY SINCE THE ESTABLISHMENT UNTIL TODAY

Pročelje zgrade Strojarskoga fakulteta u Rijeci 1963. godine /
The edifice of the Faculty of Engineering in Rijeka in 1963

Osnutak i početak djelovanja Strojarskoga fakulteta u Rijeci akademske godine 1960/1961, kao drugoga takva fakulteta u Republici Hrvatskoj, može se smatrati ponovnim početkom sustavnoga visokoškolskog obrazovanja i znanstvenoistraživačkog rada u području tehničkih znanosti u ovom dijelu Hrvatske.

The establishment and the beginning of the activity of the Faculty of Mechanical Engineering in Rijeka in the academic year 1960/1961, as the second mechanical engineering faculty in the Republic of Croatia founded to educate graduate engineers, can be considered as the renewed beginning of systematic higher education and scientific research work in the field of engineering sciences in this region of Croatia.

Na inicijativu istaknutih riječkih znanstvenika, stručnjaka i gospodarstvenika sredinom 1959. godine pokrenuto je pitanje osnivanja visoke škole za obrazovanje tehničkih kadrova, pa je ubrzo izrađen prijedlog za osnivanje Strojarskoga fakulteta u Rijeci. Dana 30. srpnja 1959. imenovano je povjerenstvo koje je izradilo iscrpan elaborat koji je u siječnju 1960. godine dostavljen republičkom Saboru. Sabor je 7. srpnja 1960. godine donio Zakon o osnivanju Strojarskoga fakulteta u Rijeci.

Od donošenja Zakona o osnivanju Fakulteta pa do početka održavanja nastave protekla su samo četiri mjeseca i u tom je vremenu učinjeno sljedeće: adaptirano je istočno krilo zgrade Fakulteta (nekadašnje vojarne austrougarske regimente "Barun Jelačić" izgrađene tijekom 1911. godine) i nabavljena je potrebna oprema; izvršene su pripreme za formiranje nastavničkog vijeća, kao i osnivanje potrebnih katedara; izabrani su tajnik Fakulteta te potrebno administrativno i tehničko osoblje; objavljen je natječaj i izvršen upis prvih studenata.

Fakultet je službeno otvoren 8. studenoga 1960. uz nazočnost rektora Sveučilišta u Zagrebu te dekana pojedinih zagrebačkih i riječkih fakulteta, kao i mnogobrojnih predstavnika tadašnjega društveno-političkog života. Svečanost otvorenja Fakulteta održana je u novouređenoj velikoj predavaonici, u kojoj je nastava započela 25. travnja 1961. godine.

U početnoj fazi rada Fakulteta od neprocjenjive su vrijednosti bili stručna pomoć i iskustvo Fakulteta strojarstva i brodogradnje u Zagrebu, kao i prihvaćanje

Famous scientists, experts and entrepreneurs gave the impetus for the establishment of a higher education institution for educating engineers already in the middle of 1959, and soon they put forward the proposal for the foundation of the Faculty of Mechanical Engineering in Rijeka. On July 30th, 1959, a committee was constituted and worked out a comprehensive elaborate, which was presented to the National Parliament. On July 7th, 1960, the Parliament passed a law on establishing the Faculty of Mechanical Engineering in Rijeka.

Only four months had passed from the enactment of the Law on the establishment of the Faculty until the first lessons held in it. At that time the following was achieved: the east wing of the present building (built in 1911 as barracks for the "Baron Jelačić" regiment) was adapted and the necessary equipment was supplied. All the preparations for the constitution of the Teaching Council and the necessary chairs were made; the faculty secretary and the administrative and technical staff were elected; the applicants were invited and first students were enrolled.

The Faculty was officially opened on November 8th, 1960 in the presence of the Rector of the University of Zagreb, the deans of several faculties of Zagreb and Rijeka and numerous representatives of the social and political life of that time. The opening ceremony took place in the newly redecorated large lecture-room, where courses began on April 25th, 1961.

Of outmost importance for the beginning of the activity of the Faculty was the professional support and experience of the Faculty of Mechanical Engineering and Naval Architecture

te mlade znanstveno-nastavne ustanove od strane Sveučilišta u Zagrebu.

U početku Fakultet nije imao laboratorija. Vježbe iz pojedinih kolegija održavale su se u laboratoriju za fiziku Medicinskoga fakulteta u Rijeci, Visokoj industrijskoj pedagoškoj školi, pogonima tvornica Vulkan i Torpedo te u Brodogradilištu „3. maj". U drugoj se nastavnoj godini na Fakultetu pristupilo osnivanju laboratorija za predmet Elementi strojeva. Izradi projektnog zahtjeva za izgradnju zgrade laboratorija pristupilo se stoga već u prvoj godini rada Fakulteta, da bi zgrada laboratorija bila dovršena potkraj 1966. godine.

Prva sjednica Vijeća nastavnika Fakulteta održana je 3. prosinca 1960. Na sjednici je za dvogodišnje razdoblje 1960/61. i 1961/62. izabran prvi dekan Fakulteta prof. Miroslav Mikuličić, a za prodekana tada viši predavač Zorislav Sapunar.

Nastava na Fakultetu započela je u okvirima brodostrojarskog i tehnološkog usmjerenja studija strojarstva. Tijekom prvih pet godina održavana je samo nastava drugog stupnja, a akademske godine 1965/66. izrađen je novi nastavni plan s ciljem racionalizacije nastave i uspješnijeg studiranja. U njemu je tjedni broj sati nastave i vježbi smanjen, dok je broj semestara povećan s osam na devet.

Akademske godine 1965/66, na temelju traženja riječke industrije, organiziran je studij ondašnjega prvog stupnja za izvanredne studente. Nastava je bila organizirana tako da je tijekom svake od četiriju godina bio apsolviran po jedan semestar.

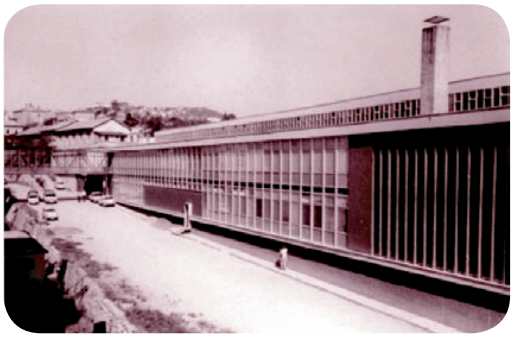
of Zagreb as well as the recognition of this new institution in Rijeka by the University of Zagreb.

Originally, there were no laboratories at the Faculty. Tutorials of course studies were held in the Laboratory of Physics of the Faculty of Medicine of Rijeka, at the High industrial teacher-training school, and at the industrial plants Vulkan, Torpedo and the shipyard "3. Maj". In the second academic year, the Machine Design laboratory was set up at the Faculty. In the very first academic year, the request for the project design of the laboratory edifice was thus elaborated, while the laboratory building itself was completed by the end of 1966.

The first session of the Teaching Council was held on December 3rd, 1960. The first dean of the Faculty, Prof. Miroslav Mikuličić, and vice-dean, senior lecturer, Zorislav Sapunar, were elected for the two-year period (1960/61 and 1961/62).

The study at the Faculty began with marine engineering and production technology university courses. During the first five years, only graduate courses were carried out, while in the year 1965/66 a new curriculum was created to make lectures and studying more efficient. The number of lessons and tutorials was reduced, while the semester number was brought from eight to nine.

During the year 1965/66, regarding the needs of the industry of Rijeka, the undergraduate study for part time students was organised. Lectures were organised so that each year, throughout the four years, one semester could be completed.



Zgrada laboratorija 1966. godine /
The laboratory building in 1966

U desetoj godini svojega postojanja, akademske godine 1969/70, Fakultet je, na traženje brodograđevne industrije sjevernojadranskoga bazena, započeo s izvođenjem nastave na drugome stupnju studija brodogradnje.

Od samog je početka djelovanja bio zapažen znanstveni i stručni rad nastavnika Fakulteta. Nastavnici redovito sudjeluju na znanstvenim skupovima i objavljuju radove u eminentnim znanstvenim časopisima u zemlji i inozemstvu. Nastavnici su i intenzivno pisali i pišu knjige i udžbenike, poglavito za područja za koja nije postojala odgovarajuća literatura.

Od 1970. godine Fakultet izdaje Zbornik radova koji je s vremenom prerastao u znanstveni časopis *Engineering Review*, koji je danas indeksiran u relevantnim međunarodnim bazama podataka.

Do 1970. godine puni je naziv Fakulteta bio *Strojarski fakultet u Rijeci Sveučilišta u Zagrebu*, a kako je akademske godine 1969/70. počela nastava drugoga jedinstvenog stupnja studija brodogradnje, naziv Fakulteta promijenjen je u Strojarsko-brodograđevni fakultet u Rijeci Sveučilišta u Zagrebu. Fakultet

In its tenth year of existence (1969/70), the Faculty began to perform graduate-level lectures in Naval Architecture, keeping abreast of the requirements of the shipbuilding industry of the North Adriatic basin.

From the very beginning, the outstanding scientific and professional work of the Faculty teaching staff was noticeable. They regularly took part in scientific conferences and published their papers in eminent scientific journals at home and abroad. Lecturers were and still are intensively engaged in writing books and textbooks, especially for the fields in which there is a lack of appropriate literature.

Since the year 1970, the Faculty has been issuing its Proceedings that with time have evolved to become the scientific journal Engineering Review that is cited in relevant scientific databases.

Up until 1970, the full name of the Faculty was the Faculty of Mechanical Engineering of Rijeka – University of Zagreb. As the integrated graduate study of Naval Architecture was introduced in 1969/70, the Faculty was renamed to Mechanical and Naval

je akademske godine 1971/72. započeo s izvođenjem nastave na studiju građevinarstva drugog stupnja, što 1973. godine dovodi do promjene naziva u Tehnički fakultet Rijeka te Fakultet ulazi u sastav Sveučilišta u Rijeci osnovanog 17. svibnja 1973. godine. Godine 1976. građevinski se studij odvaja u samostalnu organizaciju i osniva se Građevinski fakultet.

Poslijediplomski znanstveni studij utemeljen je na Tehničkom fakultetu Sveučilišta u Rijeci 1971. godine.

Statutom iz 1994. godine promijenjen je naziv Fakulteta u *Sveučilište u Rijeci - Tehnički fakultet*.

Fakultet je izobrazbu stručnjaka na polju elektrotehnike započeo 1987. godine otvaranjem stručnog studija elektrotehnike.

U međuvremenu je došlo do više promjena, pa je u srpnju 1999. godine donesen Statut u kojemu je registriran i novoosnovani sveučilišni dodiplomski studij elektrotehnike. Prvi diplomirani inženjeri elektrotehnike promovirani su akademske godine 2003/04.

Novi nastavni program poslijediplomskog studija uveden je 2002. godine.

Početkom akademske godine 2005/06. započeto je, odobrenjem Ministarstva znanosti, obrazovanja i športa, održavanje nastave na trogodišnjim stručnim i sveučilišnim preddiplomskim studijima strojarstva, brodogradnje i elektrotehnike usklađenim s Bolonjskom deklaracijom, a dobivene su dopusnice i za odgovarajuće dvogodišnje

Architecture Faculty of Rijeka – University of Zagreb. The introduction of the study of Civil Engineering in 1971/72 brought about in 1973 its renaming to the Faculty of Engineering of Rijeka. The Faculty became hence part of the University of Rijeka established on May 17th, 1973. In 1976 the study of civil engineering became an independent organisation and the Faculty of Civil Engineering was founded.

The post-graduate scientific study was initiated at the Faculty of Engineering in Rijeka in 1971.

According to the Statute of 1994, the Faculty's name was changed to become: University of Rijeka – Faculty of Engineering.

When the vocational study of Electrical Engineering was opened in 1987, the Faculty began to carry out also the university level education of electrical engineers.

In the meantime, many things have changed, so that in July 1999, a new Faculty Statute was passed, in which the new university level study of Electrical Engineering was registered. The first electrical engineers graduated in 2003/2004.

The new curriculum of post-graduate studies was issued in the year 2002.

With the approval by the Ministry of Science, Education and Sports, the lectures on the three-year undergraduate vocational and university studies of Mechanical Engineering, Naval Architecture and Electrical Engineering, prepared in accordance with the Bologna Declaration, began in the academic year 2005/2006, while the respective two-year graduate studies were also approved. In the

diplomske sveučilišne studije. Iste je godine pokrenut i poslijediplomski, sada trogodišnji doktorski studij, usklađen s Bolonjskom deklaracijom te sustavno strukturiran kroz projekt koji je financirala Nacionalna zaklada za znanost RH.

Tijekom akademske godine 2007/08. pokrenut je postupak ustroja trogodišnjega preddiplomskog sveučilišnog studija računarstva, za što je ubrzo ishodovana i dopusnica resornog Ministarstva, pa se na Fakultetu izvodi i nastava za studente računarstva.

Nastavni su programi na svim studijima koje Fakultet izvodi tijekom 2008. godine upotpunjeni precizno definiranim ishodima učenja, sukladno daljnjoj implementaciji Bolonjskog procesa, opterećenje studenata zadržano je konstantnim, ali je frontalna nastava smanjena na 20 sati tjedno.

Potkraj 1990-ih i početkom tekućeg desetljeća ostvarena su znatna ulaganja u nabavu opreme za zavode, laboratorije i praktikume. Također su uložena velika materijalna sredstva u obnovu i održavanje glavne zgrade te zgrade laboratorija. Uz to, važni investicijski zahvati s ciljem rješavanja manjka potrebnoga prostora za normalno odvijanje nastavnih i znanstvenoistraživačkih aktivnosti u posljednjih nekoliko godina omogućili su proširenje radnog prostora pa su osposobljene nove predavaonice, učionice, laboratoriji i kabineti, studentska blagovaonica, knjižnica te ostale prateće prostorije. Dvije velike i jedna manja specijalizirana predavaonica potpuno su

same year, the new three-year post graduate scientific doctoral study, in accordance with the Bologna Declaration and set up through a project financed by the National Science Foundation, was launched, continuing the tradition of former similar study.

During the academic year 2007/08 preparations for the establishment of the three-year undergraduate study of computer science were met. Soon after that, the respective approval of the authorised ministry was obtained, and the faculty has thus offered lectures for Computer Science students as well.

Curricula of all studies performed at the Faculty have been complemented in 2008 with the respective precisely defined learning outcomes, while, with the aim of further implementing of the Bologna process, the study load of the students was kept constant, but the hands-on teaching was reduced to 20 lecturing hours per week.

At the end of the 1990's and the beginning of the present decade, significant investments in the equipment of the departments, laboratories and practicum were made. Large investments in the reconstruction and maintenance of the main and the laboratory buildings have also been put in effect. These significant investments in the last few years, intended to resolve the lack of space for normal teaching and scientific research activities, have enabled the enlargement of the workspace thus making available new lecture rooms, classrooms, laboratories and cabinets, a student dining-hall, a new library and other extra rooms. Two large and a smaller specialized lecture room are completely equipped with audio, video and

Nova velika predavaonica sa suvremenom audiopremom, videopremom i računalnom opremom /
New main lecture room along with modern audio, video and computer equipment

opremljene audiopremom, videopremom i računalnom opremom te mrežnim sustavom za udaljena predavanja. Te se predavaonice mogu koristiti i za udaljene sastanke odnosno telekonferencije te za održavanje znanstvenih skupova s dislociranim sudionicima.

U sklopu aktivnosti uvođenja cijeloživotnoga dopunskog obrazovanja, na Fakultetu je opremljen poseban informatički laboratorij za akademiju Cisco gdje se provode specijalizirani programi obrazovanja iz područja mrežnih tehnologija. Na Fakultetu se provode i programi obrazovanja za stjecanje certifikata ECDL (*European Computer Driving Licence*), a tu djeluje i sveučilišna IT akademija koja provodi programe obuke "Microsoft Partners in Learning". Uz ostale oblike cjeloživotnog obrazovanja koje Fakultet nudi, tijekom akademske godine 2007/08. izvršene su sve predradnje za pokretanje programa cjeloživotnog obrazovanja "*E-learning* u nastavnoj praksi" i "Stručno osposobljavanje servisera rashladnih i klimatizacijskih uređaja za rukovanje radnim tvarima u tehnici hlađenja" usklađenih s bolonjskim procesom na kojima će polaznici stjecati ECTS-bodove (*European Credit Transfer and Accumulation System*).

computer equipment with teleconferencing capacity. These rooms can also be used for distant meetings and teleconferences as well as for organising scientific meetings with dislocated participants.

In the framework of the activities of introducing lifelong supplementary education at the Faculty, a computing laboratory for the Cisco Academy was equipped, where a special educational program in networking technology was implemented. The Faculty also hosts study programs for the acquirement of the ECDL (European Computer Driving Licence) certificates, as well as the University of Rijeka IT Academy, which offers "Microsoft Partners in Learning" training programs. In addition to other lifelong study programs offered at the Faculty, during the academic year 2007/2008 all necessary actions for the institution of lifelong programs in "E-Learning in Teaching Practice" and "Professional Skills for Handling Cooling Working Media by Air-conditioning Personnel", prepared in accordance with the Bologna process and where the attendees will receive ECTS (European Credit Transfer and Accumulation System) credits, were made.

"Laboratorij za industrijsku energetiku i zaštitu okoliša", koji djeluje pri Zavodu za termodinamiku i energetiku Tehničkog fakulteta, tijekom 2008. godine dobio je od Ministarstva zaštite okoliša, prostornog uređenja i graditeljstva "Suglasnost za obavljanje stručnih poslova praćenja kakvoće zraka i emisija u zrak" u skladu sa zahtjevima međunarodne norme HRN EN ISO/IEC 17025:2005.

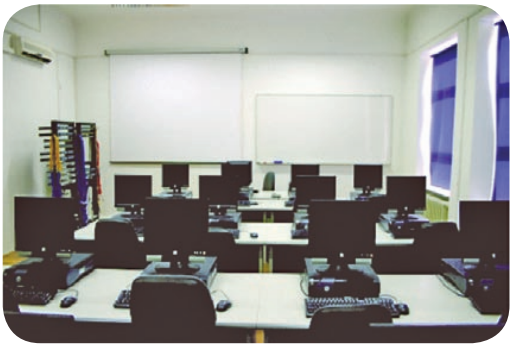
Fakultet je u novije vrijeme ustrojio i funkcionalni sustav kvalitete. U nastavom se procesu tako provodi više ciklusa osiguranja kvalitete s redovitim anketiranjem svih dionika nastavnog procesa o njegovoj uspješnosti. Tijekom akademske godine 2007/08, putem Agencije za znanost i visoko obrazovanje, provedena je i međunarodna neovisna vanjska prosudba sustava osiguranja kvalitete prema europskim mjerilima. Ne samo da je Tehnički fakultet prva sastavnica Sveučilišta u Rijeci i jedna od prvih visokoškolskih ustanova u Hrvatskoj gdje je takav postupak proveden, nego su rezultati evaluacije pokazali da je stupanj razvoja sustava osiguranja kvalitete na Fakultetu na vrlo visokoj razini. Tijekom iste akademske godine administrativne i stručne službe Fakulteta akreditiralo je kompetentno tijelo prema sustavu kvalitete ISO 9001:2000.

Tijekom 2007. godine Fakultet je, kao prva od sastavnica Sveučilišta u Rijeci, temeljem Strategije Sveučilišta u Rijeci, donio i svoju Strategiju razvoja za razdoblje 2007–2013. Postignuće ciljeva Strategije bit će praćeno kroz ispunjenje 67 zadataka i 82 mjerljiva indikatora učinka koje je Tehnički fakultet sebi postavio.

During the year 2008, the "Laboratory for Industrial Energy and Environmental Protection", active within the Department of Thermodynamics and Energy Engineering of the Faculty of Engineering, received from the Ministry of Environmental Protection, Physical Planning and Construction the "Conformity Declaration for Performing Monitoring of Air Quality and Emissions into Air" in accordance with the international standard HRN EN ISO/IEC 17025:2005.

In recent times, the Faculty has also set-up a functional quality assurance system. The teaching process is subject to cycles of quality control, with the questioning of all participants in the teaching process regarding its success. During 2007/2008, an international independent evaluation of the Faculty quality assurance system was performed, via the National Agency for Science and Higher Education, in accordance with European criteria. Not only is the Faculty of Engineering the first unit of the University of Rijeka and one of the first higher education institutions in Croatia that has undergone such an evaluation, but the results have clearly shown that the level of the quality assurance system is very high. During the same year, the administrative and professional staff of the Faculty has been certified in accordance with the quality system ISO 9001:2000.

During the year 2007 the Faculty, as the first constituent of the University of Rijeka, has accepted the Development Strategy for the period from 2007 to 2013. The achievement of the Strategy objectives will be monitored via the fulfillment of 67 assignments and 82 performance indicators that the Faculty has set forward for itself.



Informatički kabineti /
Computer rooms

Akademske godine 2009/10. akad. god. imenovana je radna skupina za izradu prijedloga nastavnog programa Sveučilišnoga diplomskog studija Računarstva. Rad skupine uspješno je završen prihvaćanjem prijedloga na sjednici Fakultetskog vijeća 26. ožujka 2010., nakon čega je prijedlog novog studija upućen u daljnju proceduru Centru za studije Sveučilišta u Rijeci. Cilj je cijelog procesa je da se već prvoj generaciji sveučilišnih prvostupnika računarstva Fakulteta odmah nakon završetka preddiplomskog studija omogući upis na odgovarajući sveučilišni diplomski studij. U istoj akad. god. predani su Centru za studije i prijedlozi više nastavnih programa cjeloživotnog obrazovanja.

Nakon transformacije poslijediplomskoga doktorskog studija provedenog u sklopu projekta Nacionalne zaklade za znanost i tehnologijski razvoj RH 2005/2006., u 2009/2010. akad. god. provedena je još jedna promjena nastavnog programa tog studija potaknuta kako iskustvima skupljenim kroz 5 godina prethodnog programa tako i dodatno odlukama Senata Sveučilišta u Rijeci o potrebi samoevaluacije i evaluacije doktorskih studija Sveučilišta. Provedene su izmjene

In 2009/2010 the working team was appointed in order to shape the proposal of the curriculum of the Graduate University Study of Computer Science. The team`s work was successfully completed with the approval of the proposal at the session of the Faculty council on March 26th, 2010, whereupon the proposal of the new curriculum has been referred to the Centre for the Studies of the University of Rijeka for further procedure. The whole process is aimed at allowing the first generation of university baccalaureus of computer science the enrolment in the appropriate graduate university programme immediately after concluding the undergraduate study. In the same year, proposals of several curricula of longlife education were submitted to the Centre for the Studies.

After the transformation of the postgraduate doctoral study which was undertaken in the framework of the project of the National Foundation for Science and Technological Development RH 2005/2006, in 2009/2010 the curriculum of that study was subject to another change due to the experience accumulated during the 5 years of the former curriculum and additionally due to decisions of the Senate of the University of Rijeka as

programa u smjeru povećanja znanstveno-istraživačkog i smanjenja nastavnog dijela aktivnosti doktoranada, povećane odgovornosti mentora i institucionalizacije praćenja napredovanja doktoranada. Nakon što je Fakultetsko vijeće prihvatilo izmjene prijedlog promjena nastavnog programa predan je prorektorici za znanost i razvoj Sveučilišta u Rijeci. Potvrda izmjena očekuje se prije početka izvođenja doktorskog studija u 2010/2011. akad. god., a u međuvremenu su već stigle izuzetno pozitivne ocjene vanjskih evaluatora.

Sve te aktivnosti, uz svekoliki razvitak znanstvenoistraživačkog i nastavnog portfelja, omogućile su Tehničkom fakultetu usklađivanje s nacionalnim i EU prioritetima, inicirajući tako proces potpune integracije naše institucije u europski znanstveni prostor i prostor visokog obrazovanja (ERA – *European Research Area* i EHEA – *European Higher Education Area*).

Tijekom 2010. godine na Fakultetu su ostvarena znatna financijska ulaganja u objekte i opremu sukladno s utvrđenim planom i dogovorenim prioritetima. Sva ta ulaganja, tijekom 2010. godine, ostvarena su sredstvima iz vlastitih prihoda Fakulteta.

Najvažnije je kapitalno ulaganje nabava i ugradnja dizala za invalidne osobe, čime je ova institucija ispunila nastojanje da se na Fakultetu omogući odnosno olakša rad i studentima s ograničenim fizičkim mogućnostima. Svakako, dizalo će biti na

to the need of selfevaluation and evaluation of the doctoral studies of the University. The curriculum has been modified in order to enhance the scientific-research activity of doctoral students and reduce their involvement in the teaching process, as well as to increase the advisor`s responsibility and institutionalise the monitoring of doctoral students` promotion. After the Faculty counceel`s approval of the changes, the proposal of changes of the curriculum has been submitted to the Vice-Chancellor for science and development of the University of Rijeka. The confirmation of these changes is expected to be obtained before the beginning of the doctoral study in 2010/2011, in the meantime independent evaluators have given exceptionally favourable judgments.

All these activities, next to the overall development of the research and education portfolio, have allowed the Faculty to align its priorities with EU and national scientific policies, initiating thus the process of its integration into the European Research and the European Higher Education Areas (ERA & EHEA).

In the course of the year 2010 significant financial investments in objects and equipment have been carried out at the Faculty in consistence with the determined plan and agreed priorities. They have all been realized through incomes of the Faculty.

The most important capital investment is represented by the building in of a lift for disabled persons. This way the Faculty has succeeded in its efforts to allow i.e. facilitate the work of disabled students too. Naturally, everyone else as well at the Faculty- students and employees-will have free use of it. The lift

raspolaganju i svima ostalima na Fakultetu – njegovim studentima i djelatnicima. Dizalo, koje je panoramske izvedbe, na odgovarajući je način uklopljeno u postojeću građevinu Fakulteta. S pripremom tehničke dokumentacije te ishođenjem potrebnih dozvola započelo se prethodne godine. Kao najpovoljniji izvođač, temeljem javnoga natječaja, odabrana je tvrtka Thyssen-Krupp Končar d.o.o. iz Zagreba, koja je u ugovorenome roku obavila potrebne radove. Radovi su završeni s uspješnim tehničkim pregledom i ishođenjem uporabne dozvole.

Druga po veličini stavka financijskih ulaganja je investicijsko održavanje u kojem su sadržani brojni troškovi neophodni za normalno odvijanje aktivnosti na Fakultetu.

Tijekom 2010. godine Fakultet je sklopio ukupno 23 ugovora za stručne projekte vezane uz suradnju s privredom i ostale znanstveno-stručne usluge. Temeljem radova na tim stručnim projektima Fakultet je ostvario znatan udjel prihoda kojima su se mogli financirati razni troškovi. Iz praćenja broja ugovora i ostvarenoga prihoda od tih aktivnosti uočen je određeni pad u odnosu na prethodnu godinu, iz čega se i na tom području uočavaju posljedice recesijskoga djelovanja u privredi.

Oko 2.750 diplomiranih inženjera i više od 1.560 inženjera dosad je steklo svoje diplome na Fakultetu, čime je naša institucija izravno pridonijela razvitku lokalnoga, ali i hrvatskog i europskog gospodarstva. Više od 95 magisterija znanosti i 80 doktorata znanosti dodijeljenih na Fakultetu u znatnoj su mjeri unaprijedili znanstveni potencijal naše domovine.

(panoramic version) has been appropriately fitted into the existing building of the Faculty. The preparation of technical documentation and obtaining of necessary licenses began last year. As the most convenient contractor, based on the soliciting for tenders, the company Thyssen Krupp Končar d.o.o. from Zagreb has been chosen and it carried out the necessary works on schedule. The works have been completed with the successful technical inspection and obtaining the certificate of occupancy.

The second big financial investment is represented by the investment maintenance which comprises numerous expenses necessary for a normal proceeding of activities at the Faculty.

During 2010 the Faculty has concluded totally 23 contracts for professional projects linked to the cooperation with the economy and other scientific-professional services. Pursuant to the work on these professional projects, a significant income`s share was realized by the Faculty which enabled the financing of various expenditures. Considering the contracts` number and the realized income from these activities, a certain decrease in comparison to the previous year has been noticed, which indicates in this area as well the consequences of the recessional effect in economy.

More than 4.310 engineers have successfully graduated at the Faculty so far, contributing to the development of the local, the Croatian and the European economy. Moreover, 95 M.Sc. and 80 D.Sc. graduates have significantly enhanced the scientific and development potential of Croatia.

Tehnički fakultet u Rijeci danas je sa svojih 197 djelatnika (od kojih 143 djelatnika u znanstveno-nastavnim, nastavnim i suradničkim zvanjima) i oko 1.400 studenata preddiplomskih, diplomskih i poslijediplomskih studija, jedna od stožernih sastavnica Sveučilišta u Rijeci. Fakultet je trajno izvorište znanstvenih i nastavnih djelatnosti, ali i inovativnih proizvoda, tehnologija i usluga koje su potrebne nacionalnom i međunarodnom gospodarskom sektoru. Fakultet surađuje s 30 inozemnih i 15 hrvatskih akademskih institucija i dio je *Central European Exchange Program for University Studies* (CEEPUS). Dinamička aktivnost na Fakultetu vidljiva je i iz oko 100 znanstvenoistraživačkih projekata resornog ministarstva te više desetaka projekata koje financiraju lokalna uprava i gospodarstvo na čijem je izvođenju Fakultet sudjelovao i sudjeluje.

Tehnički fakultet Sveučilišta u Rijeci potvrđuje se tako kao vodeća visokoškolska obrazovna institucija na polju tehničkih znanosti u svojem okruženju, u kojoj svi njegovi djelatnici kao i svi studenti imaju prigodu i mogućnost razvoja svojih talenata i potencijala, te tako aktivno pridonose svekolikom razvoju hrvatske znanosti i gospodarstva te izgradnji Republike Hrvatske kao društva znanja.

The Faculty of Engineering in Rijeka today, with its 197 employees (143 faculty staff) and about 1,400 undergraduate, graduate and post-graduate students, represents one of the central components of the University in Rijeka. The Faculty is a continuous source of scientific and teaching activities but also of innovative products, technologies and services needed by the national and international economic sectors. The Faculty collaborates with 30 international institutions abroad and 15 Croatian academic institutions and is part of the Central European Exchange Program for University Studies (CEEPUS). The dynamic research activity at the Faculty is evident through more than 100 scientific research projects financed by the Croatian Ministry of Science and several dozen projects financed by the public sector and industrial subjects, in which the Faculty has participated and still participates.

The Faculty of Engineering of the University of Rijeka establishes thus itself further as the leading higher educational institution in the field of technical sciences in this region, where all its staff and students have the opportunity to develop their talents and potentials so as to actively contribute to the comprehensive development of Croatian science and economy and the establishment of Croatia as a knowledge-based society.

DOSADAŠNJI DEKANI TEHNIČKOG FAKULTETA SVEUČILIŠTA U RIJECI

red. prof. Miroslav Mikuličić
red. prof. Miroslav Pečornik
akademik Zlatko Winkler
red. prof. Josip Barić
red. prof. dr. sc. Zorislav Sapunar
red. prof. dr. sc. Josip Obsieger
red. prof. dr. sc. Edgar Škrobonja
red. prof. dr. sc. Zlatko Šverer
red. prof. dr. sc. Mirko Krpan
red. prof. dr. sc. Robert Eren
akademik Elso Kuljanić
red. prof. dr. sc. Ivan Kamenarović
red. prof. dr. sc. Marko Selaković
red. prof. dr. sc. Igor Rožanić
red. prof. dr. sc. Ivo Katavić
red. prof. dr. sc. Josip Brnić
red. prof. dr. sc. Bernard Franković
red. prof. dr. sc. Božidar Križan
red. prof. dr. sc. Tonči Mikac
red. prof. dr. sc. Goran Turkalj

DEANS OF THE FACULTY OF ENGINEERING UNIVERSITY OF RIJEKA TO DATE

Full Prof. Miroslav Mikuličić
Full Prof. Miroslav Pečornik
Academician Zlatko Winkler
Full Prof. Josip Barić
Full Prof. D. Sc. Zorislav Sapunar
Full Prof. D. Sc. Josip Obsieger
Full Prof. D. Sc. Edgar Škrobonja
Full Prof. D. Sc. Zlatko Šverer
Full Prof. D. Sc. Mirko Krpan
Full Prof. D. Sc. Robert Eren
Academician Elso Kuljanić
Full Prof. D. Sc. Ivan Kamenarović
Full Prof. D. Sc. Marko Selaković
Full Prof. D. Sc. Igor Rožanić
Full Prof. D. Sc. Ivo Katavić
Full Prof. D. Sc. Josip Brnić
Full Prof. D. Sc. Bernard Franković
Full Prof. D. Sc. Božidar Križan
Full Prof. D. Sc. Tonči Mikac
Full Prof. D. Sc. Goran Turkalj

3. FAKULTET U AK. GOD. 2010-2011 / THE FACULTY IN THE ACAD. YEAR 2010-2011

3.1. OPĆE INFORMACIJE / GENERAL INFORMATION

Na Tehničkom fakultetu tijekom akademske godine 2010/11. u različitim fazama svojega studija aktivno je studiralo oko 1500 studenata, a svoj studij u tom razdoblju uspješno su završili: 71 magistar inženjer, 36 diplomiranih inženjera, 214 sveučilišnih prvostupnika, 40 stručnih prvostupnika i 5 inženjera. Prošle akademske godine na našem fakultetu osam je kandidata obranilo svoje doktorske disertacije, što čini sveukupno 93 doktora znanosti školovanih na našoj instituciji.

Tijekom 2010. godine Povjerenstvo za vrednovanje programa cjeloživotnog učenja Sveučilišta u Rijeci provelo je postupak vrednovanja triju predloženih programa cjeloživotnog učenja za stjecanje nedostajućih znanja, vještina i kompetencija za upis na diplomske sveučilišne studije strojarstva, brodogradnje i elektrotehnike te je Senatu predložilo njihovo usvajanje. Početkom ak. god. 2010/11. Senat Sveučilišta u Rijeci donio je odluku o usvajanju predloženih programa razlikovne edukacije, kojima polaznici koji su prethodno završili odgovarajući stručni studij ili srodne preddiplomske sveučilišne studije, stječu nedostajuća znanja, vještine i kompetencije te dodatnih 30 ECTS-bodova na temelju kojih im se omogućava upis na odgovarajući diplomski sveučilišni studij. U ak. god. 2010/11. organizirani su i izvedeni

During the academic year 2010/2011, at the Faculty of Engineering, around 1,500 students studied actively at different stages of their studies and significantly, 71 Masters of Engineering, 36 graduate engineers, 214 university Bachelors, 40 professional Bachelors and 5 engineers successfully completed their studies. Also, eight candidates have defended their doctoral dissertation in the last academic year, which makes a total of 93 PhDs educated at our institution.

Throughout the year 2010, the Committee for the Evaluation of Lifelong Learning at the University of Rijeka conducted an evaluation process for three proposed continuing education programmes referring to the acquisition of knowledge, skills and competencies necessary for entry into undergraduate university studies in Mechanical Engineering and Electrical Engineering and the Senate consequently proposed their adoption. At the beginning of 2010-2011, the Senate of the University of Rijeka issued a decree on the adoption of proposed supplementary education programmes, so that students who had previously completed an appropriate professional studies or related undergraduate university studies, were and are in position to make up for the missing knowledge, skills and competencies, and acquire additional 30 ECTS credit points necessary for enrolment in

navedeni razlikovni programi te ih je uspješno završila prva generacija polaznika.

U veljači 2011. godine donesena je odluka o vraćanju na semestralni model odvijanja nastave, čime je napušten model odvijanja nastave u blokovima. Tijekom proljeća, a u okviru priprema za ak. godinu 2011/2012, u funkciju je stavljen *on-line* sustav rezerviranja prostorija za izvođenje nastave. S tim u vezi, izrađen je i testiran i *on-line* sustav planiranja kolokvija koji je, kao i semestralni oblik odvijanja nastave, u primjeni od akademske godine 2011/12.

U svibnju su usvojeni ažurirani ishodi učenja i izmjene te dopune studijske literature za predmete na sveučilišnim i stručnim studijima. U lipnju su, nakon provedene rasprave, usvojeni prijedlozi Pravilnika o završnom radu, završnom ispitu i završetku preddiplomskih sveučilišnih i stručnih studija te Pravilnika o diplomskom radu, diplomskom ispitu i završetku diplomskih sveučilišnih studija.

Početkom ak. god. 2010/11., temeljem pozitivnih recenzija predloženog studijskog programa i pozitivnog mišljenja Centra za studije, Senat Sveučilišta u Rijeci usvojio je predloženi studijski program diplomskog sveučilišnog studija *Računarstvo* te ga uputio na daljnje postupanje u Agenciju za znanost i visoko obrazovanje pri Ministarstvu znanosti, obrazovanja i sporta RH.

an appropriate graduate university study. This distinctive supplemental curricula design, organized and performed in academic years of 2010-2011, was successfully completed by the first generation of students.

In February 2011, the decision was made to restore the semester model of delivery of instruction, and a block schedule was accordingly abandoned. During spring, in preparation for the academic year 2011/2012, on-line Classroom Facility Booking system was released. Also, an **on-line preliminary exam planning system** was developed and tested which along with the semester form of delivery of instruction have been in use since the academic year 2011/12.

In May, updated learning outcomes, changes and supplementary literature for courses of university and professional studies were adopted. In June, there was a debate before adoption of the proposals of the Ordinance on the finals and completion of undergraduate university and professional studies as well as the Rules of graduate work, final examination and completion of undergraduate university studies.

At the beginning of 2010-2011, owing to positive reviews and a high opinion given by the Centre for studies, the proposed graduate university study programme of Computer Science was adopted by the Senate of the University of Rijeka and sent for further processing to the Agency for Science and Higher Education at the Ministry of Science, Education and Sports of the Republic Croatia.

U srpnju 2011. godine AZVO je utvrdila da se predloženi studijski program temelji na suvremenim znanstvenim postignućima, da će svojom inovativnošću pridonijeti razvoju hrvatskog društva te da odgovara potrebama tržišta rada na kojem postoji deficit visokoobrazovnoga kadra predloženog profila te da je opravdano javno financiranje predloženog studija. U rujnu 2011. godine MZOŠ je izvršilo upis studijskog programa diplomskog sveučilišnog studija *Računarstvo* u Upisnik studijskih programa, čime su stečeni uvjeti za početak odvijanja nastave na navedenom studiju. Temeljem navedenoga, na diplomski sveučilišni studij *Računarstvo* na Tehničkom fakultetu upisana je prva generacija studenata.

Na Fakultetu se i u ak. god. 2010/2011, provodilo nekoliko programa cjeloživotnog dopunskog obrazovanja, i to iz područja mrežnih tehnologija u sklopu akademije Cisco, iz programa obrazovanja za stjecanje certifikata ECDL, te programa za stručno osposobljavanje servisera rashladnih i klimatizacijskih uređaja za rukovanje radnim tvarima u tehnici hlađenja. U sklopu Fakulteta i nadalje djeluje sveučilišna IT akademija koja provodi program cjeloživotnog obrazovanja *E-learning u nastavnoj praksi* i program obuke *MicrosoftPartners in Learning*.

Novopredloženi program cjeloživotnog učenja *Projektni menadžment u razvoju proizvoda i proizvodnje* usvojen je na Fakultetskom vijeću u srpnju te je poslan Sveučilištu u daljnju proceduru odobravanja.

In July 2011, the ASHE confirmed that the proposed study programme was based on modern scientific achievements, and thanks to their innovative features it would contribute to the development of Croatian society and meet the needs of the labour market where there is a deficit of highly educated persons of the proposed profile and therefore the public funding of the proposed study would be justified. Additionally, In September 2011, the MSES wrote graduate study programmes in the Register of study programmes, thus providing conditions for the delivery of instruction in the above mentioned study. So, the first generation of students enrolled the graduate university study of Computer Science at the Faculty of Engineering.

During the academic years of 2010/2011, the Faculty carried out a number of additional programmes of lifelong education in the field of network technologies within the Cisco Academy, the education programme for acquiring ECDL certification and professional training programmes for service technicians, i.e. technicians for refrigeration, air conditioning equipment and for refrigerant handling in refrigeration. Within the Faculty, the university IT Academy is still pursuing its activities; namely, it conducts a program of lifelong learning *E-learning in teaching practice* and training program *MicrosoftPartners in Learning*.

The newly proposed lifelong learning programme - *Project management in product development and manufacturing* was adopted at the Faculty Council in July and was sent to the further approval process that is to be carried out by the University.

Nakon transformacije poslijediplomskoga doktorskog studija provedenog u sklopu projekta Nacionalne zaklade za znanost i tehnologijski razvoj RH 2005/2006, u veljači 2011. godine provedena je još jedna promjena nastavnog programa tog studija potaknuta kako iskustvima skupljenima kroz šest godina prethodnog programa tako i dodatno odlukama i smjernicama Senata Sveučilišta u Rijeci temeljenima na samoevaluaciji i vrednovanju doktorskih studija Sveučilišta.

Provedene su izmjene programa u smjeru povećanja znanstvenoistraživačkog i smanjenja nastavnog dijela aktivnosti doktoranada, povećane odgovornosti mentora i institucionalizacije praćenja napredovanja doktoranada. Promjene su prihvaćene i na Sveučilištu te je dobivena dopusnica za izvođenje izmijenjenog studija u poljima Strojarstvo, Brodogradnja, Temeljne tehničke znanosti i Interdisciplinarne tehničke znanosti.

Tijekom 2011. usvojen je i Pravilnik o poslijediplomskome doktorskom studiju, a u srpnju je na Fakultetskom vijeću prihvaćen prijedlog programa poslijediplomskog doktorskog studija iz polja Elektrotehnika. Prijedlog je poslan Sveučilištu na evaluaciju te se dopusnica očekuje prije početka izvođenja doktorskog studija u 2012/2013. akad. god., a u međuvremenu su već stigle pozitivne ocjene recenzenata. Protekle godine Fakultet je dobio i ovlaštenja za izbore u znanstvena zvanja iz polja Temeljne tehničke znanosti, Interdisciplinarne tehničke znanosti, kao i za polje Elektrotehnike.

After the transformation of the doctoral studies conducted within the project of the National Foundation for Science and Technological Development of the Republic Croatia in 2005/2006, another change of the curriculum of this study was carried through in February 2011, triggered by the experience gathered over six years of previous programme implementation as well as by decisions and guidelines of the Senate of the University of Rijeka based on self-evaluation and the evaluation of doctoral studies at the University.

Curriculum changes have been implemented in order to increase scientific research and decrease teaching activities of doctoral students, to increase responsibilities of the mentor and to institutionalize the monitoring of doctoral students. Since the changes were also accepted by the University, an accreditation was obtained for the performance of the revised studies in the fields of Mechanical Engineering, Naval Architecture, Basic Engineering Sciences and Interdisciplinary Engineering Sciences.

During the year of 2011, the Ordinance on the postgraduate doctoral study was adopted, and in July, at the Faculty Council, a draft program of postgraduate studies in the field of Electrical Engineering was approved. The proposal has been sent to the University Committee for evaluation, whereas the accreditation is expected before the commencement of doctoral studies in the academic years of 2012/2013. In the meantime, positive assessments have already been sent by the reviewers. In the last year, the Faculty has received the authorization for academic advancement in the field of

Sve te aktivnosti, uz svekoliki razvitak znanstvenoistraživačkog i nastavnog portfelja, omogućile su Tehničkom fakultetu usklađivanje s nacionalnim i EU prioritetima, inicirajući tako proces potpune integracije naše institucije u europski znanstveni prostor i prostor visokog obrazovanja (ERA – *European Research Area* i EHEA – *European Higher Education Area*). Tijekom 2011. godine na Fakultetu su ostvarena znatna financijska ulaganja u objekte i opremu sukladno s utvrđenim planom i dogovorenim prioritetima.

Tijekom protekle akademske godine na Tehničkom fakultetu odvijao se istraživački rad u okviru 20 znanstvenih projekata koje financira MZOŠ i šest istraživačkih projekata financiranih iz ostalih izvora. Kupljeno je znanstvene i laboratorijske opreme u vrijednosti više od milijun kuna, a računalne opreme u vrijednosti većoj od 300.000 kuna.

Što se ostalih znanstvenih i stručnih aktivnosti u koje je naš Fakultet bio uključen, vrijedi istaknuti da je u listopadu prošle godine u Opatiji je održan znanstveni skup *Energija i okoliš*, s glavnom temom *Inženjerstvo budućnosti s malim emisijama*, a u lipnju je u Malom Lošinju održan 9. međunarodni kongres AMST 2011. Fakultet je bio glavni suorganizator obaju događaja.

U travnju 2011, u okviru obilježavanja 50. obljetnice Tehničkog fakulteta Sveučilišta u Rijeci, iz tiska je izašla monografija posvećena toj obljetnici. U monografiji, za čije

Basic Engineering Sciences, Interdisciplinary Engineering, as well as the field of Electrical Engineering.

All these activities, along with the overall development of scientific research and teaching portfolio, have enabled the Faculty to comply with national and EU priorities, initiating in this way a process of full integration of our institutions into the European Research and Higher Education Area (ERA - *European Research Area* and the EHEA - *European Higher Education Area*). Also, throughout the year of 2011, the Faculty invested considerable financial resources in facilities and equipment in accordance with the established plan and agreed priorities.

In the past academic year, at the Faculty of Engineering within 20 research projects, the research was carried out funded by the MSES and six research projects funded from other sources. The scientific and laboratory equipment worth over million and computer equipment worth more than 300,000 kunas were purchased.

As for other scientific and professional activities in which our Faculty was involved, it is worth pointing out that last year in October, a scientific Symposium *Energy and Environment* was held in Opatija, with the main theme *Engineering of the future with low emissions*, and in June, Ninth International Congress AMST 2011 was held in Mali Lošinj. At both events, the Faculty was the main co-organizer.

In April 2011, as part of the 50th anniversary of the Faculty of Engineering, University of Rijeka, the monograph devoted to this

je uređivanje bio zadužen prof. dr. sc. Božidar Križan, opisani su osnutak i razvoj Fakulteta, njegov ustroj, studijski programi, aktivnosti studentskih udruga i Alumni kluba. Osim toga, u njoj je dan i pregled brojnih događaja i aktivnosti bivših i sadašnjih djelatnika tijekom 50 godina postojanja Fakulteta.

Tijekom akademske godine 2010/11. dobiveno je i nekoliko vrlo uglednih nagrada i priznanja. Fakultetu je dodijeljena *Zlatna plaketa "Grb Grada Rijeke"* za uspješno polustoljetno djelovanje u području tehničkih znanosti, kreativan razvoj znanstvene misli i mnogobrojna ostvarenja u brodogradnji, strojarstvu i elektrotehnici u gradu koji baštini tehnički razvitak i napredak. Prof. dr. sc. Josip Brnić dobitnik je Nagrade Hrvatske akademije znanosti i umjetnosti za najviša znanstvena i umjetnička postignuća u Republici Hrvatskoj za 2010. godinu za područje tehničkih znanosti, a iskazana mu je i posebna počast izborom za počasnog profesora *Harbin Institute of Technology*, u Harbinu u Kini.

Prof. dr. sc. Marko Čanađija i znanstveni novak Jonatan Lerga dobitnici su godišnjih nagrada Zaklade Sveučilišta u Rijeci za područje tehničkih i prirodnih znanosti. Student Robert Blažić dobitnik je nagrade *Ivan Luppis za 2010.* godinu za inovaciju pod nazivom *Diferencijal trkaćeg automobila*, dok je studentica Tea Arrigoni dobitnica *Rektorove nagrade*.

Tijekom prošle i početkom ove akademske godine Fakultet je sklopio više ugovora ili sporazuma o znanstvenoj, nastavnoj i stručnoj suradnji, i to s: *Institut Superior Technico*,

anniversary came off the presses. The monograph, whose editor in charge was Prof. Božidar Križan Ph. D, deals with the founding and development of the Faculty, its organization, study programmes, activities, student organizations and alumni clubs. Additionally, a survey of the events and activities of the former and current employees during the 50 years of the Faculty was given.

During the academic years of 2010/2011, several renowned awards were obtained. The Faculty was awarded the Golden Plaque - "The Emblem of the City of Rijeka" for a successful half-century work in the field of engineering sciences, the creative development of scientific thought and many achievements in naval architecture, mechanical engineering and electrical engineering, all that actually in the city of Rijeka that has bequeathed technical development and progress. Prof. Josip Brnić, Ph.D, was granted the Award by the Croatian Academy of Arts and Sciences for the highest scientific and artistic achievements in the Republic of Croatia for the year 2010 in the field of engineering sciences, and a special tribute was given to him when elected an Honorary Professor of the Harbin Institute of Technology, Harbin, China.

Prof. D. Sc. Marko Čanađija, and researcher Jonatan Lerga won the annual award from the University of Rijeka for engineering and natural sciences. Student Robert Blazic won the I*van Luppis* for the year 2010, for the innovation called *The Differential of the racing car*, while female student Tea Arrigoni received the *Rector's Award.*

During the last year and the beginning of this academic year, the Faculty concluded a

Lisabon, Portugal – u području brodogradnje; *Poznanj University of Technology*, Poznanj, Poljska; CIMOS, Kopar; TPS, Labin; Uljanik Tesu Elektronika, Pula; UNDP Hrvatska – s ciljem sustavnoga gospodarenja energijom.

Nažalost, prošla je akademska godina imala i svoju crnu stranu. U svibnju su u Poljskoj u prometnoj nesreći nastradali naši profesori Branimir Barišić, Bruno Čalić i Livio Šušnjić. Za kolegu Barišića ta je nesreća tragično završila, dok je kolega Šušnjić doživio teže tjelesne ozljede i još se uvijek nalazi na rehabilitaciji.

lot of contracts or agreements on scientific, teaching and professional collaboration, in particular with: Instituto Superior Technico, Lisbon, Portugal - in the field of naval architecture; Poznan University of Technology, Poznan, Poland; CIMOS, Kopar; TPS, Labin; Uljanik Tesu Electronics, Pula; Croatia UNDP - with the aim of sustainable energy management.

Unfortunately, the past academic year turned out to have its dark side. In May, in Poland our professors Branimir Barisic, Bruno Čalić and Livio Šušnjić were involved in a car accident. For our colleague Barišić, this accident ended tragically, while colleague Šušnjić suffered serious injuries and is still on rehabilitation.

3.2. ČASOPIS ENGINEERING REVIEW / THE JOURNAL ENGINEERING REVIEW

Tehnički fakultet Sveučilišta u Rijeci ima dugu tradiciju izdavanja znanstvenih radova. Publiciranje znanstvenih radova djelatnika Tehničkoga fakulteta seže u 1970. godinu kada započinje tiskanje Zbornika radova. Godine 1988. spomenuta edicija mijenja naziv u *Zbornik Tehničkog fakulteta Rijeka* i konačno 1995. uspostavlja se naziv *Engineering Review*, pod kojim se nazivom ovaj časopis i danas tiska.

Sve spomenute edicije bile su na raspolaganju za objavu radova kako nastavnog osoblja Fakulteta tako i za sve ostale zainteresirane strane. Fakultet nastoji zainteresirati znanstvenu javnost za publiciranje znanstvenih radova, a sve sa svrhom širenja i razmjene znanstvenih postignuća temeljenih na istraživačkom radu. Polja iz kojih se u časopisu mogu objavljivati radovi prvenstveno obuhvaćaju strojarstvo, brodogradnju, elektrotehniku, kompjutorske znanosti i građevinarstvo.

U ovom smislu časopis predstavlja jednu od rijetkih baza za publiciranje radova iz vrlo širokog dijapazona tehničkog područja. Razmatraju se i radovi koji su kvalitetni, a nisu direkno iz tehničkog područja, već mogu biti primjerice iz prirodnih znanosti, ali imaju određenu poveznicu s područjem tehnike.

The Faculty of Engineering University Rijeka has a long tradition of publishing scientific papers. The publication of scientific papers by the employees of the Faculty of Engineering dates back in 1970, when the printing of Proceedings was initiated. In 1988, the mentioned edition was renamed the Proceedings of the Faculty of Engineering Rijeka and finally in 1995, the journal was renamed again Engineering Review under which title it has been published to this very day.

All these editions have readily published papers written not only by teaching staff of the Faculty but also by all other interested sides. The Faculty makes every effort to arouse interest of the scientific community in the publication of scientific papers, all with the aim of disseminating and sharing scientific achievements based on research work. Fields from which the journal may publish papers primarily include mechanical engineering, naval architecture, electrical engineering, computer sciences and civil engineering.

In this sense, the journal is one of the few centres used for publishing papers covering a wide range of technical areas. Also, qualitative papers not directly from the engineering area are also taken into consideration. They might be, for instance, from natural sciences

Do sada je u razvitak i uređivanje časopisa uloženo puno truda, posebice u zadnje vrijeme pod vodstvom glavnog urednika prof. dr. sc. Branimira Barišića, čija je svestrana aktivnost naglo prekinuta njegovom tragičnom i preranom smrću. Za sve uloženo dugujemo mu iskrenu zahvalnost.

Nakon potpisanog ugovora o suizdavaštvu časopisa *Engineering Review* između Tehničkog fakulteta Sveučilišta u Rijeci (dekan – prof. dr. sc. Goran Turkalj) i Građevinskog fakulteta Sveučilišta u Rijeci (dekanica – prof. dr. sc. Aleksandra Deluka Tibljaš), nastavljaju se aktivnosti izdavanja.

Izdavanje časopisa *Engineering Review* nastavlja se pod vodstvom glavnog urednika prof. dr. sc. Josipa Brnića (Editor-in-Chief) i pomoćnih urednika (Associate Editors): doc. dr. sc. Marine Franulović, izv. prof. dr. sc. Kristiana Lenića, izv. prof. dr. sc. Viktora Sučića, izv. prof. dr. sc. Gordana Jelenića. Pomoć oko aktivnosti vezanih uz kompjutorska rješenja pružio je doc. dr. sc. Lado Kranjčević. Popis članova *Editorial Boarda* kao i popis članova *Advisory Editorial Boarda* je proširena.

Oba spomenuta popisa čine imena eminentnih domaćih i inozemnih profesora i eksperata. Veliku pomoć oko pripreme, uređivanja i tiskanja radova pružaju znanstveni novaci Tehničkog fakulteta: dr. sc. Sven Maričić, dr. sc. Jonatan Lerga, Željko Vrcan, Iva Kolacio, Neven Munjas, Goran Klobučar, Boris Delač.

but surely with some particular links to the area of engineering. So far, a lot of effort has been made in developing and editing the journal. More particularly, an immense effort was made under the leadership of editor-in chief, Prof. D. Sc. Branimir Barišić, whose versatile activities were put to an abrupt halt because of his tragic and untimely end of his life. Heartfelt thanks to him for all his contribution.

Having entered into the contract on co-editions of the journal Engineering Review, signed by the Faculty of Engineering University Rijeka (dean Prof. D. Sc. Goran Turkalj) and the Faculty of Civil Engineering University Rijeka (female dean Prof. D. Sc. Aleksandra Deluka Tibljaš), publication activities will continue.

It follows that the journal Engineering Review will be published under the guidance of main editor-in chief Prof. D. Sc. Josip Brnić, and Associate Editors: Assist. Prof. D. Sc. Marina Franulović, Assoc. Prof. D. Sc. Kristian Lenić, Assoc. Prof. D. Sc. Viktor Sučić and Assoc. Prof. D. Sc. Gordan Jelenić. Assistance with computer solutions have been provided by Assist. Prof. D. Sc. Lado Kranjčević. Furthermore, the member lists of both Editorial Board and Advisory Editorial Board have been enlarged.

Certainly, both lists consist of eminent home and abroad professors and experts. An enormous assistance with arrangements for editing and printing has been given by junior researchers of the Faculty of Engineering: D. Sc. Sven Maričić, D. Sc. Jonatan Lerga, Željko Vrcan, Iva Kolacio, Neven Munjas, Goran Klobučar and Boris Delač.

Proširena je baza citiranosti časopisa te se ona svodi na sljedeće indeksiranje:
Aluminum Industry Abstracts, Advanced Polymers Abstracts, Cambridge Scientific Abstract (CSA), Ceramic Abstracts/World Ceramics Abstracts, Composites Industry Abstracts, Computer and Information Systems Abstracts, Copper Technical Reference Library, Corrosion Abstracts, Electronics and Communications Abstracts, Engineered Materials Abstracts, High Technology Research Database with Aerospace, Mechanical & Transportation Engineering Abstracts, METADEX, SCOPUS, VINITI.

Časopis prelazi na elektroničku obradu svih podataka i elektroničku komunikaciju od prijave radova do recenzentskih postupaka i priopćavanja rezultata podnositeljima radova. Časopis ima široku bazu domaćih i inozemnih recenzenata i ona se stalno dopunjava. Za svaki su rad u postupak recenzije uključena najmanje dva recenzenta od kojih je barem jedan inozemni. Za prihvaćanje rada ni jedna recenzija ne smije biti negativna. Ako broj kvalitetnih radova bude primjeren, za objavu se predviđaju četiri broja godišnje. U pogledu svrhe i cilja časopisa preuzima se niže navedeni tekst.

Aims and Scope
Engineering Review is an international journal designed to foster the exchange of ideas and transfer of knowledge between scientists and engineers involved in various engineering disciplines that deal with investigations related to design, materials, technology, maintenance and manufacturing processes. It therefore provides an appropriate resort for publishing

Database Journal Citation has been enlarged and it has hence the following indexing:
Aluminum Industry Abstracts, Advanced Polymers Abstracts, Cambridge Scientific Abstract (CSA), Ceramic Abstracts/World Ceramics Abstracts, Composites Industry Abstracts, Computer and Information Systems Abstracts, Copper Technical Reference Library, Corrosion Abstracts, Electronics and Communications Abstracts, Engineered Materials Abstracts, High Technology Research Database with Aerospace, Mechanical & Transportation Engineering Abstracts, METADEX, SCOPUS, VINITI.

The journal has transferred to electronic processing of all data so that information on paper application, review procedures and results to the applicants are electronically communicated. The journal has a broad base of national and international reviewers that it is constantly being supplemented. The procedure to review the paper includes at least two referees for each work submitted for publication in the journal, at least one being from abroad. For the acceptance of the paper, it is important to mention that all reviews have to be positive. Provided that adequate numbers of qualitative works are submitted, four numbers annually are expected to be published. With reference to aims and scope of the journal, the below written text must be considered.

Aims and Scope
Engineering Review is an international journal designed to foster the exchange of ideas and transfer of knowledge between scientists and engineers involved in various engineering disciplines dealing with investigations related to design, materials, technology, maintenance

the papers covering prior applications – based on the research topics comprising the entire engineering spectrum. Topics of particular interest thus include: mechanical engineering, naval architecture and marine engineering, electrical engineering, computer sciences and civil engineering. Manuscripts addressing other issues may also be considered if they relate to engineering oriented subjects. The contributions, which may be analytical, numerical or experimental, should be of significance to the progress of mentioned topics. Papers that are merely illustrations of established principles or procedures generally will not be accepted. The high standard of excellence for any of published papers will be ensured by peer-review procedure.

and manufacturing processes. It, therefore, provides an appropriate resort for publishing the papers covering prior applications – based on the research topics comprising the entire engineering spectrum. Topics of particular interest thus include: mechanical engineering, naval architecture and marine engineering, electrical engineering, computer sciences and civil engineering. Manuscripts addressing other issues may also be considered if they relate to engineering oriented subjects. The contributions, which may be analytical, numerical or experimental, should be of significance to the progress of mentioned topics. Papers that are merely illustrations of established principles or procedures generally will not be accepted. The high standard of excellence for any of published papers will be ensured by peer-review procedure.

3.3. ALUMNI TFR

Alumni klub Tehničkoga fakulteta Sveučilišta u Rijeci, skraćeni naziv ALUMNI TFR, jest udruga osnovana s primarnim ciljem izgradnje i jačanja veza i suradnje između bivših studenata i Tehničkoga fakulteta, ali i između bivših studenata međusobno. Udruga je osnovana pod nazivom Akademski klub doktora znanosti, magistara znanosti, diplomiranih inženjera i inženjera Tehničkoga fakulteta Sveučilišta u Rijeci na Osnivačkoj skupštini održanoj u Mramornoj dvorani Pomorskog i povijesnog muzeja Hrvatskoga primorja Rijeke 24. studenog 2000. godine, u sklopu obilježavanja 40 godina Fakulteta.

Svrha je ALUMNI TFR očuvanje tradicije Tehničkoga fakulteta Sveučilišta u Rijeci, promicanje ugleda Fakulteta u Republici Hrvatskoj i inozemstvu, skrb za razvitak i napredak Fakulteta, njegovanje i razvitak etike inženjerskoga poziva, utjecaj na stvaranje javnoga znanstvenog i stručnog mišljenja o svim bitnim pitanjima razvoja struke i znanosti te njihove primjene, utjecaj na razvitak i napredak spoznaje o potrebi očuvanja prirode i čovjekova okoliša, izgradnja i jačanje veza i suradnje između bivših studenata i Fakulteta, poticanje i uspostava veza i suradnje Fakulteta i sličnih obrazovnih, razvojnih i istraživačkih institucija u Republici Hrvatskoj i u svijetu, promicanje ugleda inženjerske struke te uspostava i razvijanje suradnje sa sličnim

The Alumni Club of the Faculty of Engineering, University of Rijeka, abbreviated ALUMNI TFR, is an association founded with the primary aim to build and strengthen connections and cooperation not only between alumni and the Faculty of Engineering, but also among the alumni themselves. The association was founded as the Association of Alumni and Alumnae of the Faculty of Engineering, University of Rijeka at the inaugural meeting held in the Marble Hall of the Maritime and History Museum in Rijeka on November 24th, 2000, during the celebration of the fortieth anniversary of the Faculty.

The purpose of ALUMNI TFR is to preserve the tradition of the Faculty of Engineering in Rijeka, to promote the reputation of the Faculty in Croatia and abroad; to take care of the development and advancement of the Faculty, nurturing and enhancing engineering ethics; to exert our influence on the creation of public scientific and expert opinions of all important issues dealing with development of the profession and sciences and their applications; to exert our influence on the development and advancement of preserving and protecting nature and the environment; to build and strengthen links and cooperation between alumni and the Faculty, to encourage and establish links and cooperation between the Faculty and other educational, developmental and research institutions in Croatia and around the world; to promote the reputation of the engineering profession and to establish and develop the

udrugama kod nas i u svijetu.

Na dan 30. 9. 2011. godine ukupan broj registriranih članova ALUMNI TFR iznosi 158.

Predsjednik ALUMNI TFR je prof. dr. sc. Zmagoslav Prelec, dipl. ing., potpredsjednik mr. sc. Aleksandar Regent, dipl. ing., a tajnica je Tatjana Škorjanc, dipl. ing.

Predsjedništvo broji 15 članova. To su: red. prof. dr. sc. Zmagoslav Prelec, dipl. ing., mr. sc. Aleksandar Regent, dipl. ing., red. prof. dr. sc. Goran Turkalj, dipl. ing. - dekan Tehničkoga fakulteta, red. prof. dr. sc. Bernard Franković, dipl. ing., Renato Fonović, dipl. ing., red. prof. dr. sc. Božidar Križan, dipl. ing., Zlatko Komadina, dipl. ing., dr. sc. Serđo Klapčić, dipl. ing., Davor Lukeš, dipl. ing., Ante Maras, dipl. ing., Zdenko Marčelja, dipl. ing., Mladen Merlak, dipl. ing., red. prof. dr. sc. Zoran Mrša, dipl. ing., red. prof. dr. sc. Jasna Prpić-Oršić, dipl. ing., Danko Venturini, dipl. ing.

Nadzorni odbor čine: mr. sc. Slavko Štambuk, dipl. ing., izv. prof. dr. sc. Duško Pavletić, dipl. ing., Davor Mihovilić, dipl. ing.

U organizaciji ALUMNI TFR održane su u ak. god. 2010/11. sljedeće aktivnosti:

- 25. studenog 2010. predavanje "Globalno zatopljenje - istina ili laž?" održao je akademik prof. dr. sc. Vladimir Paar.
- 2. prosinca 2010. održan je drugi susret 10. generacije studenata.
- 9. veljače 2011. održano je predavanje Ivana Belobrajdića, dipl. ing., pod nazivom „Suvremeni sustavi

cooperation with similar organizations at home and abroad.

On September 30th, 2011, the total number of registered members ALUMNI TFR was 158.

The chairman of ALUMNI TFR is professor Zmagoslav Prelec, D. Sc., vice- chairman Aleksandar Regent, M. Sc., secretary Tatjana Škorjanc, graduate engineer.

The chairmanship has 15 members. They are: professor D. Sc. Zmagoslav Prelec, Aleksandar Regent, M. Sc., professor D. Sc. Goran Turkalj - Dean of the Faculty, professor D. Sc. Bernard Franković, Renato Fonović, graduate engineer, professor D. Sc.. Božidar Križan, Zlatko Komadina, graduate engineer, D. Sc. Serđo Klapčić, Davor Lukeš, graduate engineer, Ante Maras, graduate engineer, Zdenko Marčelja, graduate engineer, Mladen Merlak, graduate engineer, professor D. Sc. Zoran Mrša, professor D. Sc. Jasna Prpić-Oršić, Danko Venturini, graduate engineer.

The Supervisory Board consists of: M. Sc. Slavko Štambuk, associate professor D. Sc. Duško Pavletić, Davor Mihovilić, graduate engineer.

In the period 2010-2011, ALUMNI TFR organised following activities:

- On November 25th 2010, the lecture Global warming - truth or lie, was held by an academic professor D. Sc. Vladimir Paar.
- On December 2nd 2010, the second meeting of the 10th generation of students took place.
- On February 9th 2011, the lecture "Modern system of vertical transport in

vertikalnog transporta u građevinama".

- 13. travnja 2011., u sklopu aktivnosti obilježavanja 50. obljetnice osnutka Fakulteta, organiziran je susret generacija i prigodno druženje, prigodom čega je predstavljena i monografija „Tehnički fakultet – 50. godina". Tom je prilikom posebno upriličen susret 1. generacije studenata Fakulteta.
- 26. svibnja 2011., u suradnji sa Znanstvenim kolokvijem Sveučilišta u Rijeci, organizirano je predavanje prof. dr. sc. Frana Barbira pod nazivom „Gorivi članci i vodikove energetske tehnologije"
- 23. rujna 2011. održan je susret 17. generacije studenata Fakulteta.

buildings" was held by Ivan Belobrajdić, graduate engineer.

- On 13 April 2011, as part of activities celebrating the fiftieth anniversary of the Faculty, a meeting of all generations was organized, during which the monography "The Faculty of Engineering - 50 years " was presented. On that occasion, also, the meeting of the 1st generations of students took place.
- On May 26th 2011, in cooperation with the scientific colloquium at the University of Rijeka, ALUMNI TFR organized a lecture titled "Fuel cells and hydrogen energy technologies" which was held by prof. D. Sc. Frano Barbir
- On September 23rd 2011, the meeting of the 17th generations of the students of this Faculty took place.

3.4. DOKTORSKE DISERTACIJE OBRANJENE U AK. GOD. 2010-2011 / DOCTORAL DISSERTATIONS DEFENDED IN ACAD. YEAR 2010-2011

Ime i prezime	**Sven Maričić**
Područje	Tehničke znanosti, Strojarstvo, Proizvodno strojarstvo
Naziv rada	*Optimizacija tehnoloških procesa izrade biokompatibilnih dijelova*
Mentor(i)	Izv. prof. dr. sc. Mladen Perinić
	Doc. dr. sc. Daniela Kovačević Pavičić
Datum obrane	20. 1. 2011.

SAŽETAK

Tehnološki procesi izrade biokompatibilnih dijelova predstavljaju polazište prilikom izrade implantata i rekonstrukcije anatomske geometrije. Zahvaljujući snažnom tehnološkom napretku omogućena je uža suradnja između istraživača u biotehnološkom području. Postojeći protokoli i tehnološka rješenja moraju se stalno razvijati i češće mijenjati uzimajući u obzir postojeću strukturu kako bi se prilagodili trendovima i svakodnevnim izazovima koji stoje pred njima.

U radu je predstavljen cjeloviti teorijski prikaz s područja tehnologije brze izrade prototipova, medicinske dijagnostike, segmentacijskih tehnika kao i analiza postojećih protokola prilikom rekonstrukcije anatomske geometrije.

Cilj ove disertacije bio je optimizirati tehnološki proces izrade biokompatibilnih dijelova prilikom rekonstrukcije i izrade implantata poštujući pravo svakog pacijenta na što kvalitetniju uslugu i medicinsku skrb. U tu svrhu izvršena je analiza postojećih tehnologija i protokola koji se primjenjuju te su definirane nove smjernice i dan je prijedlog novog protokola uzimajući u obzir dostupne tehnološke kapacitete, njihova

SUMMARY

Technological processes of biocompatible components are the foundation when making implants and reconstruction of anatomical geometry. The fast technological progress has enabled closer cooperation between researchers in the field of biotechnology. Existing protocols and solutions must be constantly developed and changed more frequently, taking into account the existing structure to be adapted to the trends and everyday challenges that lie in front of them.

The aim of dissertation is to provide a comprehensive theoretical view of the technology of additive manufacturing systems, medical diagnostics, segmentational techniques and analysis of existing protocols during reconstruction of anatomical geometry.

The aim was to optimize the technological process of manufacturing biocompatible parts of the reconstruction and development of implants while respecting the right of every patient for the best service and medical care. For this purpose, an analysis of existing technologies and protocols used and defined by new guidelines and with a new protocol, taking into account the available technological capabilities, their limitations and advantages.

ograničenja i prednosti. Zaključno, izložen je pregled nekolicine studija slučaja s detaljnim prikazom temeljenim na uporabi opisanih tehnika i za potrebe ove disertacije razvijenog protokola te novoga programskog rješenja.

Finally, a review of several case studies with detailed presentation based on the use of techniques described for the purposes of this dissertation developed new protocols and software solutions.

Ime i prezime	**Marko Čavrak**
Područje	Tehničke znanosti, Temeljne tehničke znanosti, Mehanika fluida
Naziv rada	*Povećanje učinkovitosti računalnih simulacija onečišćenja zraka*
Mentor(i)	Prof. dr. sc. Zoran Mrša
	Doc. dr. sc. Lado Kranjčević
Datum obrane	30. 3. 2011.

SAŽETAK

Procjenjivanje onečišćenja zraka predstavlja važan segment sustava za ocjenu utjecaja onečišćenja na zdravlje ljudi i okoliša. Temeljni, zakonom propisani postupak procjenjivanja je korištenje standardiziranih modela kakvoće zraka. Modeli kakvoće zraka učestalo se primjenjuju pri višegodišnjim analizama emisija onečišćujućih tvari iz novih potencijalnih postrojenja te pri kontinuiranom procjenjivanju i praćenju emisija iz postojećih izvora. Takve simulacije zahtijevaju iznimnu količinu informacija za pripremu te odabir modela kakvoće s primjerenom učinkovitošću i točnosti izračunatih koncentracija onečišćenja. Analizom različitih modela disperzije i kakvoće zraka odabran je CALPUFF model disperzije. Učinkovitost je povećana na dvije razine. Prva razina odnosi se na efikasniji i robusniji način prikupljanja i pripreme svih potrebnih podataka za CALPUFF model disperzije. U drugom dijelu povećana je učinkovitost modela disperzije dimnih oblaka korištenjem grafičkih procesora opće namjene (GPGPU). Postupak paralelizacije

SUMMARY

Air pollution forecasting presents major segment for mitigation of air pollution effects on humans and environment. Regulatory modeling techniques have been established for such purposes. Air quality models, nowadays, are often used for longtime analysis of emitted pollutants from newly planned sources, for continuous forecasts from current sources. Such simulations need high number of different input parameters and selection of efficient model for each specific purpose in order to obtain accurate ground level concentrations. Different air quality models have been thoroughly analyzed with a conclusion that CALPUFF model is most suited for wide range of applications. Furthermore, the model was made more effective by raising the efficiency of model input data delivery and preparation. Moreover, the model was programmed for parallel execution on general purpose graphical processors (GPGPU). A process of parallelization was conducted on the code segment that consume the most compute time of the entire model. Results of raised

postojećega računalnog koda proveden je na proračunski najzahtjevnijem segmentu modela. Rezultati paralelizacije CALPUFF modela disperzije uspoređeni su s osnovnom serijskom varijantom proračuna.

efficiency of CALPUFF dispersion model have been compared to the results of current serial model version.

Ime i prezime **Dario Iljkić**
Područje Tehničke znanosti, Strojarstvo, Proizvodno strojarstvo
Naziv rada *Prilog razvoju procjene mehaničkih svojstava poboljšanog čelika i čeličnog lijeva*
Mentor(i) Red. prof. dr. sc. Božo Smoljan
Datum obrane 12. 5. 2011.

SAŽETAK

Razvoj procjene mehaničkih svojstava i eksploatacijske nosivosti materijala nezaobilazna je komponenta u području inženjerstva materijala, a čelik i čelični lijev, kao vrlo značajan materijal u području strojogradnje, zauzimaju posebno mjesto u području inženjerstva materijala. Mehanička svojstva materijala, odnosno čelika i čeličnog lijeva moguće je procijeniti na temelju strukturnih značajki na sub-mikro, mikro i na makrorazini. Poznavanjem utjecaja povijesti obrade na strukturne značajke materijala moguće je modelirati mehanička svojstva čelika i čeličnog lijeva te prema definiranim eksploatacijskim uvjetima odabrati optimalan materijal i optimalan postupak obrade, čime se znatno smanjuju troškovi prerade i obrade materijala.

U ovom su radu, prvi put na sveobuhvatan, a time i originalan način, određeni utjecaji različitih postupaka obrade, od samog lijevanja, preko postupaka mehaničke metalurgije do postupaka toplinske obrade, na strukturu i mehanička svojstva čelika i čeličnog lijeva. Posebno važan doprinos ostvaren je u procjeni mehaničkih svojstava čeličnih ljevova. Ovaj doprinos još važnijim

SUMMARY

Development of prediction of mechanical properties and working stress of materials is unavoidable component in area of materials engineering and steel alloys, as very important materials in area of engineering, have a special importance in area of materials engineering. On the basis of structural features on sub-micro, micro and macro scale it is possible to predict mechanical properties of materials, i.e. steel alloys. By knowing the effects of processing history on those structural features it is possible to model the mechanical properties of steel alloys and according to exploitation conditions it is possible to select the optimal material and optimal process of manufacturing which significantly reduce the costs of manufacturing processes.

In this work, the effects of different processes, like casting, processes of mechanical metallurgy and heat treatment processes, on microstructure and mechanical properties of steel alloys was defined on some unique and original way. Great contribution is achieved in prediction of mechanical properties of steel castings. The trend of development of near net shaping processes, which casting

čini sve veća potreba za razvojem "near net shape" procesa, što lijevanje u većini slučajeva i jest. Rezultati i iskustva dobivena i prezentirana ovim radom mogu se, također, kvalitetno primijeniti i na razvoj procesa obrade željeznih ljevova te legura obojenih metala.

U radu su na osnovi dobivenih spoznaja postavljeni matematički modeli procjene mehaničkih svojstava poboljšanog čelika i čeličnog lijeva. Postavljeni modeli implementirani su u postojeći računalni program, "Quenching for Windows", autora B. Smoljana, čime je ovaj program dodatno usavršen te će se moći još uspješnije koristiti u znanstvenim institucijama pri razvoju novih postupaka očvršćivanja legura u kojima se zbog ekonomske efikasnosti sintetiziraju postupci toplinske obrade i oblikovanja materijala. Time ovaj doktorski rad daje važan doprinos ostvarenju ciljeva projekta Ministarstva znanosti obrazovanja i sporta Republike Hrvatske pod nazivom *Optimiranje parametara i predviđanja rezultata toplinske obrade metala*, voditelja B. Smoljana, u okviru kojega je ovaj doktorski rad i izrađen.

is, make these achievement more significant. Results and experiences given by this work can be quality applied in development of manufacturing processes of irons and non-ferrous alloys.

In this Doctoral Thesis, based on obtained cognition, mathematical models of prediction of mechanical properties of steel and cast steel was developed. Developed models are implemented in existing software, "Quenching for Windows" of author B. Smoljan, by which this software was additionally improved. Those improvements make this software more efficiently in applying in research institutes, in the development of new processes of hardening of alloys, in which heat treatment will be integrated into the process of material forming to increase economic efficiency. Accordingly, this Doctoral Thesis gives appreciable contribution in realization of objectives of project Optimization of Parameters and Prediction of Metals Heat Treatment Results, project of Ministry of Science, Education and Sports of the Republic of Croatia of senior researcher B. Smoljan, under which this Doctoral Thesis is carried out.

Ime i prezime	**Sanjin Troha**
Područje	Tehničke znanosti, Strojarstvo, Opće strojarstvo (Konstrukcije)
Naziv rada	***Analiza varijanti mjenjačkog zupčaničkog planetnog pretvarača***
Mentor(i)	prof. dr. sc. Neven Lovrin prof. dr. sc. Roberto Žigulić doc. dr. sc. Dimitar Karaivanov
Datum obrane	13. 6. 2011.

SAŽETAK

Istraživani su dvovodilni planetni pretvarači, izvedeni sa zupčanicima s ravnim zubima, koji imaju dva spojna i četiri vanjska vratila i koji

SUMMARY

A research has been done on coupled two-carrier planetary gear trains built with spur gears which consist of two coupled and

omogućuju dvobrzinske pogone. Sustavno je istražen utjecaj raznih varijanti pretvarača s pripadnim osnovnim parametrima na njihove osnovne karakteristike. Istražen je utjecaj idealnih momentnih omjera planetnih slogova na prijenosne omjere za obje brzine. Određene su kinematičke mjenjačke mogućnosti svake od varijanti. Izvedeni su izrazi za određivanje idealnih momentnih omjera planetnih slogova na osnovi zahtijevanih prijenosnih omjera čime je stvorena osnova za sintezu dvobrzinskih planetnih pretvarača. Koncipirane su kinematičke sheme koje daju uvid u raspored zupčanika i vratila različitih varijanti pretvarača. Određene su ekstremne vrijednosti skokova prijenosa različitih varijanti pretvarača. Identificirane su varijante koje s aspekta ostvarivih prijenosnih omjera mogu imati širu primjenu u praksi. Izvedeni su izrazi za određivanje stupnja iskoristivosti planetnih pretvarača te provedene analize stupnja iskoristivosti kod određenih varijanti. Provedeno je eksperimentalno određivanje stupnja iskoristivosti na eksperimentalnim pretvaračima s ciljem dokazivanja ispravnosti izvedenih matematičko-mehaničkih modela. Identificirane su varijante pretvarača kod kojih je moguća pojava neprihvatljivo velikih specifičnih relativnih brzina vrtnje satelita. Određeni su specifični momenti na sunčanim zupčanicima različitih varijanti pretvarača koji omogućuju dimenzioniranje zupčanika planetnih slogova. Razvijen je programski sustav koji omogućuje analizu, sintezu te ocjenu rješenja i optimalni izbor varijante pretvarača s pripadnim osnovnim parametrima.

four external shafts and enable two-speed transmissions. The influence of different variants of planetary gear trains with related basic parameters on their basic characteristics has been systematically studied. The influence of ideal torque ratios for the planetary stages on speed ratios in both speed drives has also been studied. Kinematic changeable possibilities of each variant have also been designed. Expressions are defined for the determination of the ideal torque ratios for the planetary stages considering requested transmission ratios which resulted in the creation of the basis for synthesis of two-speed planetary gear trains. Kinematic schemes have been created and they clearly show the shaft and gears arrangement of different variants of planetary gear trains. Extreme values of ratio of transmission ratios of different variants of planetary gear trains have been determined and variants have been identified which from the aspect of possible transmission ratios that can be implemented. Expressions have been deduced for the determination of the efficiency of planetary gear trains and analyses of the efficiency of the designated variants have been conducted. The experimental determination of the efficiency has been carried out on experimental planetary gear trains for the purpose of proving the validity of the deduced mathematic-mechanical models. Variants of planetary gear trains have been found, where unacceptable specific angular speed of satellites might occur. Specific torques on the sun gear of various planetary gear trains has been defined, which enable dimensioning gears of planetary stages. A software program has been developed for the analysis, synthesis and evaluation of results as well as for finding out the optimal variant of planetary gear trains with related basic parameters.

Ime i prezime **Vladimir Glažar**
Područje Tehničke znanosti, Strojarstvo, Opće strojarstvo (Konstrukcije), Procesno energetsko strojarstvo
Naziv rada *Optimizacija geometrije kompaktnih izmjenjivača topline*
Mentor(i) Red. prof. dr. sc. Bernard Franković
Red. prof. dr. sc. Gordana Marunić
Datum obrane 13. 6. 2011.

SAŽETAK

U radu je provedena termodinamička i hidrodinamička analiza kompaktnih izmjenjivača topline različitih konstrukcijskih tipova s ciljem optimizacije njihove geometrije. Termodinamička analiza ostvarena je numeričkim putem uz provjeru matematičkog modela i pripadajućih mu numeričkih simulacija eksperimentalnim putem. U zračnom tunelu otvorenog tipa, namjenski razvijenom za potrebe ovog istraživanja, mjereni su temperatura i maseni protoci radnih medija na cijevnom lamelnom i na dva lamelna izmjenjivača topline s mikrokanalima. Usporedba dobivenih rezultata mjerenja za navedene izmjenjivače topline ostvarena je u odnosu na iskoristivost topline i prosječni toplinski tok po ukupnoj masi i volumenu izmjenjivača. Za numeričku analizu su prema izmjenjivačima topline korištenima u eksperimentu razvijeni modeli odgovarajuće geometrije u smjeru strujanja vode i strujanja zraka. Primjenom složenijega matematičkog modela zrak/voda, koji uključuje provođenje topline kroz stijenku cijevi i pad temperature vode u aksijalnom smjeru, postignuti su točniji rezultati u odnosu na modele s pretpostavljenom konstantnom temperaturom stijenke cijevi. Numerički trodimenzijski modeli izmjenjivača topline riješeni su primjenom metode kontrolnih volumena. Optimizacija geometrije kompaktnih izmjenjivača topline

SUMMARY

In this paper thermodynamical and hydraulical analysis of compact heat exchangers of different construction types has been performed in order to optimize their geometry. Thermodynamical analysis has been carried out numerically along with the evaluation of the mathematical model and corresponding numerical simulations through the experiment. In an open circuit wind tunnel developed on purpose for this investigation, the measurement of working media temperatures and mass flows for fin-and-tube and two heat exchangers with microchannel coil has been accomplished. The comparison of the obtained measurement results for the mentioned heat exchangers has been performed in relation to the heat transfer effectiveness and specific heat transfer rate per total mass and heat exchanger's volume. For the purpose of numerical analysis and in accordance with the heat exchangers used for experiments, models with adequate geometry in direction of both air and water flow have been developed. With utilization of air/water side model, more accurate results have been achieved in relation to the model that assumes constant temperature or constant heat flux on the pipe wall. Numerical 3D models of heat exchangers have been solved using the finite volume method. The geometry optimization of compact heat exchangers has been

ostvarena je za lamelni izmjenjivač topline s mikrokanalima koji pripada vrhunskim tehnologijama u tehnici grijanja, klimatizacije i ventilacije. Primijenjena je metoda odzivnih ploha za model izmjenjivača s četiri izabrana parametra od kojih su tri geometrijska, a jedan odražava izabrani pogonski uvjet. Na osnovi dobivenih rezultata optimizacije formirane su smjernice za izbor optimalne geometrije lamelnih izmjenjivača topline s mikrokanalima sa stajališta termodinamičkih i hidrodinamičkih karakteristika.

accomplished for the heat exchanger with microchannel coil that belongs to state of the art technologies in heating, ventilating and air conditioning industry. The response surface method has been used for the heat exchanger model with four chosen parameters three of them being geometrical and one reflecting the chosen operating condition. From the thermodynamical and hydraulical point of view and based on the obtained optimization results, directions have been given for the choice of optimal geometry of the heat exchanger with microchannel coils.

Ime i prezime	**Damir Kolić**
Područje	Tehničke znanosti, Brodogradnja, Tehnologija gradnje i održavanja plovnih i pučinskih objekata
Naziv rada	*Metodologija za unapređenje brodograđevnih procesa temeljena na konceptu vitke proizvodnje*
Mentor(i)	Red. prof. dr. sc. Nikša Fafandjel
Datum obrane	16. 6. 2011.

SAŽETAK

Cilj je ove disertacije omogučiti metodologiju za poboljšanje protoka međuproizvoda kroz primjenu koncepta *vitke proizvodnje.* Uprave brodogradilišta često nisu sigurne kako najbolje pristupiti transformaciji svojih postrojenja radi postojećih rizika. Ova diseratcija povezuje vitku transformaciju s analizom rizika radi usporedbe ključnog parametra u uspoređivanju produktivnosti, efektivnih radni sati. Postaje jasno kako kreiranje promjene korištenjem koncepta *projektiranja za proizvodnju* poboljšava proizvodnju do 30% kada se promjene na tehnologiji naprave komplementarno s metodologijom, aplikacija koncepta *vitke proizvodnje* donosi poboljšanje proizvodnje do 60%.

SUMMARY

The aim of this dissertation is to provide a methodology for improving flow of interim products by applying the lean manufacturing concept. Since shipyard management is usually not sure how to approach a transformation of its facilities due to the risks involved, this dissertation couples lean transformation with risk analysis to compare the key parameter for comparing productivity, man-hours. Based upon this it is clear that while making design for production (DFP) changes will improve productivity up to 30% when technology changes are made in complement with methodology changes, application of the lean manufacturing methodology brings productivity improvements of 60%.

Ime i prezime **Sunčana Smokvina Hanza**
Područje Tehničke znanosti, Strojarstvo, Proizvodno strojarstvo
Naziv rada *Matematičko modeliranje: računalna simulacija mikrostrukturnih pretvorbi i mehaničkih svojstava pri gašenju čelika*
Mentor(i) Red. prof. dr. sc. Božo Smoljan
Datum obrane 08. 7. 2011.

SAŽETAK

Cilj ove doktorske disertacije bio je istraživanje mehanizama i kinetike mikrostrukturnih pretvorbi te mehaničkih svojstava pri gašenju čelika, a u svrhu što točnijeg definiranja fizikalnih pojava pri gašenju čelika. Sve veći zahtjevi u svezi kvalitete mehaničkih svojstava strojnih dijelova ukazuju na nužnost dobrog poznavanja povezanosti mikrostrukture, kemijskog sastava te mehaničkih svojstava.
Iako je jednostavan za izvođenje, proces gašenja čelika spada u jedan od fizikalno najkompleksnijih inženjerskih postupaka jer pri gašenju čelika nastaje više procesa koji se međusobno isprepleću: fizikalni procesi mikrostrukturnih pretvorbi, procesi izmjene, prijelaza i provođenja topline, procesi stvaranja deformacija i zaostalih naprezanja te procesi formiranja i rasta pukotina.
Na temelju provedenih teorijskih istraživanja u radu su predložene metode određivanja kinetičkih parametara izotermičkog raspada austenita u ferit, perlit i bainit te izrazi za predviđanje kinetike raspada austenita. Nadalje, predloženi su izrazi za predviđanje vrijednosti termodinamičkih konstanti raspada austenita u ferit, perlit i bainit na temelju kemijskog sastava podeutektoridnih čelika. Također, predloženi su izrazi za procjenu tvrdoće mikrostrukturnih sastojaka čelika: ferita, perlita, binita i martenzita.
Vlastiti algoritam razvijen u svrhu predviđanja kinetike raspada austenita i tvrdoće mikrostrukturnih sastojaka čelika

SUMMARY

The scope of this doctoral thesis has been the investigation of mechanisms and kinetics of microstructure transformation as well as the study of mechanical properties, with the objective of a more accurate defining of physical phenomena during steel quenching. Increasing technical requirements, relating to the quality of mechanical properties of the engineering components, imply a deep understanding of relations among microstructure, chemical composition and mechanical properties.
Although the process of steel quenching is simple to apply, it is one of the physically most complicated engineering processes, which involves many interacting processes: physical processes of microstructure transformation, processes of heat exchange, transfer and heat conduction, processes of generation of deformation and residual stresses, and processes of crack formation and its growth.
Based on theoretical investigations, methods for determination of kinetics parameters of isothermal austenite decomposition into ferrite, pearlite and bainite have been proposed, as well as equations of austenite decomposition kinetics. Furthermore, on the basis of the chemical composition of hypoeutectioid steels, equations for the estimation of thermodynamic constants of austenite decomposition into ferrite, pearlite and bainite have been put forward. Equations for the evaluation of the microstructure constituents` hardness have been also presented.

implementiran je u računalni program za 3-D simulaciju ohlađivanja uzoraka, čime je omogućena 3-D simulacija raspada austenita pri gašenju čelika. Za provjeru rezultata računalne simulacije mikrostrukturnih pretvorbi te tvrdoće pri gašenju čelika korišten je nisko legirani čelik za poboljšanje: 42CrMo4 (DIN).

Rezultati računalne simulacije ukazuju na to da se razvijeni matematički modeli mikrostrukturnih pretvorbi te tvrdoće mogu uspješno koristiti pri predviđanju rezultata raspada austenita za vrijeme gašenja čelika.

A proper algorithm developed in order to predict the austenite decomposition kinetics as well as the microstructure constituents` hardness has been implemented in the 3-D computer program for a 3-D simulation of the specimen`s cooling, whereby the 3-D simulation of the austenite decomposition during steel quenching is enabled. Low-alloy steel for tempering 42CrMo4 (DIN) has been applied for the verification of results obtained by the computer simulation.

The results of the computer simulation show that developed mathematical models of microstructure transformations and hardness can be efficiently used for the prediction of austenite decomposition during steel quenching.

Ime i prezime	**Goran Vukelić**
Područje	Tehničke znanosti, Strojarstvo, Opće strojarstvo, Temeljne tehničke znanosti, Tehnička mehanika
Naziv rada	*Numerička analiza procesa širenja pukotina konstrukcija*
Mentor(i)	Red. prof. dr. sc. Josip Brnić
Datum obrane	08. 7. 2011.

SAŽETAK

U ovom je radu, uz pregled razvoja mehanike loma, a sukladno značaju kojeg ona ima u projektiranju konstrukcija, razvijen algoritam za procjenu otpornosti materijala konstrukcijskih elemenata spram širenja pukotina. Tako je razvijen numerički algoritam za izračun *J* integrala kao parametra lomne žilavosti. Numeričkom je analizom dobivena promjena *J* integrala ovisno o povećanju (porastu) pukotine, a ta je promjena opisana u rezultirajućim *J-R* krivuljama. Iz njih su određene kritične vrijednosti lomne žilavosti za tri različita materijala koji se često koriste

SUMMARY

An algorithm for assessment of materials crack growth resistance is developed in this work, along an overview of fracture mechanics according to its significance in structure design. Consequently, a numerical algorithm for calculation of J integral as a parameter of fracture toughness is developed. Numerical analysis gives change of J integral in reference to crack growth and dependence is described in the resulting J-R curves. Such curves are used to determine critical values of fracture toughness for three different materials, steels 20MnMoNi55

u konstrukciji posuda pod tlakom, čelika 20MnMoNi55 i 50CrMo4 te aluminijske slitine AA6061. Numerička su ispitivanja najprije izvedena na modelima standardiziranih epruveta SENB i CT izrađenih iz spomenutih materijala s različitim veličinama pukotine, *a*, koje su definirane u odnosu na ukupnu visinu epruvete, *W* (*a/W* = 0.25, 0.375, 0.5, 0.625, 0.75). Nakon toga, numerička su ispitivanja izvedena i na modelima posuda pod tlakom s unutarnjom pukotinom koaksijalnom s uzdužnom osi posude, različitih veličina, *a*, gdje je veličina definirana u odnosu na debljinu stijenke, *t* =*W*, (*a/t* = 0.25, 0.375, 0.5, 0.625). Uz to, numerički je model verificiran tenzometrijskim ispitivanjima provedenim na stvarnoj posudi pod tlakom izrađenoj iz čelika 50CrMo4. Putem standardiziranih epruveta, za dva su materijala vrijednosti *J* integrala dobivene numeričkim algoritmom uspoređene putem *J-R* krivulja s dostupnim eksperimentalnim istraživanjima drugih autora, pri čemu je pokazana dobra podudarnost.

and 50CrMo4 and aluminum alloy AA6061, that are commonly used in pressure vessel manufacture. Numerical investigation is first conducted on the models of standardized SENB and CT specimens made of mentioned materials, with different crack sizes, a, that are defined relative to specimen's width, W (a/W = 0.25, 0.375, 0.5, 0.625, 0.75). Next, numerical investigations are conducted on pressure vessel models containing inner crack coaxial with longitudinal axis, whose size, a, is defined relative to the pressure vessel wall thickness, t = W, (a/t = 0.25, 0.375, 0.5, 0.625). Besides, numerical model is verified by tensometric measurements conducted on a real pressure vessel made of 50CrMo4 steel. Using standardized specimens, J integral values obtained by numerical algorithm are compared through J-R curves with available experimental results of other authors for two materials and a good correspondence is shown.

4. STUDIJSKI PROGRAMI NA FAKULTETU / STUDY PROGRAMS AT THE FACULTY

Studiji na Tehničkom fakultetu ustrojeni su prema Bolonjskom modelu 3 + 2 + 3, što znači da se obrazovanje provodi kroz preddiplomski sveučilišni studij u trajanju od tri godine kojim se stječe 180 ECTS-bodova, zatim diplomski sveučilišni studij u trajanju od dvije godine kojim se stječe 120 ECTS-bodova te poslijediplomski doktorski studij u trajanju od tri godine kojim se stječe 180 ECTS-bodova.

Osim tih studija obrazovanje se provodi i kroz stručne studije u trajanju od tri godine kojima se stječe također 180 ECTS-bodova. Taj je sustav s vrstama pojedinih studija i stečenim nazivima prikazan u sljedećoj tablici.

Studies at Faculty of Engineering are set according to the Bologna model 3 + 2 + 3, which means that education continues through a three-year long undergraduate university study resulting in 180 ECTS credits obtained, followed by a two-year graduate university study resulting in 120 ECTS credits obtained and a postgraduate doctoral study which lasts three years and results in 180 ECTS credits obtained.

Beside these studies, education is accomplished through a three-year vocational study that results in 180 ECTS credits. The curricula with the respective types of studies and obtained titles are shown in the following table.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ 3-godišnji (180 ECTS)	
Studij	*Naziv*
Strojarstvo	Sveučilišni prvostupnik inženjer strojarstva
Brodogradnja	Sveučilišni prvostupnik inženjer brodogradnje
Elektrotehnika	Sveučilišni prvostupnik inženjer elektrotehnike
Računarstvo	Sveučilišni prvostupnik inženjer računarstva
DIPLOMSKI SVEUČILIŠNI STUDIJ 2-godišnji (120 ECTS)	
Studij	*Naziv*
Strojarstvo	Magistar inženjer strojarstva
Brodogradnja	Magistar inženjer brodogradnje
Elektrotehnika	Magistar inženjer elektrotehnike
Računarstvo	Magistar inženjer računarstva
POSLIJEDIPLOMSKI STUDIJ 3-godišnji (180 ECTS)	
Polje	*Naziv*
Strojarstvo	Doktor tehničkih znanosti
Temeljne tehničke znanosti	Doktor tehničkih znanosti
Brodogradnja	Doktor tehničkih znanosti
STRUČNI STUDIJ 3-godišnji (180 ECTS)	
Studij	*Naziv*
Strojarstvo	Stručni prvostupnik inženjer strojarstva
Brodogradnja	Stručni prvostupnik inženjer brodogradnje
Elektrotehnika	Stručni prvostupnik inženjer elektrotehnike

UNDERGRADUATE UNIVERSITY STUDY 3 years (180 ECTS)	
Study	*Title*
Mechanical Engineering	University Bachelor Engineer of Mechanical Engineering
Naval Architecture	University Bachelor Engineer of Naval Architecture
Electrical Engineering	University Bachelor Engineer of Electrical Engineering
Computer Science	University Bachelor Engineer of Computer Science
GRADUATE UNIVERSITY STUDY 2 years (120 ECTS)	
Study	*Title*
Mechanical Engineering	Masters in Mechanical Engineering
Naval Architecture	Masters in Naval Architecture
Electrical Engineering	Masters in Electrical Engineering
Computer Science	Masters in Computer Science
POSTGRADUATE DOCTORAL STUDY 3 years (180 ECTS)	
Field	*Title*
Mechanical Engineering	D. Sc. in Engineering Sciences
Basic Technical Sciences	D. Sc. in Engineering Sciences
Naval Architecture	D. Sc. in Engineering Sciences
VOCATIONAL STUDY 3 years (180 ECTS)	
Study	*Title*
Mechanical Engineering	Bachelor in Mechanical Engineering
Naval Architecture	Bachelor in Naval Architecture
Electrical Engineering	Bachelor in Electrical Engineering

U nastavku su opisane osnovne značajke pojedinog studija.

The basic characteristics of each study are described below.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA

Preddiplomski sveučilišni studij strojarstva priprema studente za diplomski sveučilišni studij strojarstva, ali im pruža i mogućnost zapošljavanja na odgovarajućim stručnim poslovima. Studij ima za cilj osposobljavanje

UNDERGRADUATE UNIVERSITY STUDY OF MECHANICAL ENGINEERING

The undergraduate university study of mechanical engineering prepares the students for graduate university study and provides an opportunity for placement in appropriate professional employment. The

studenata za primjenu temeljnih i specijalističkih znanja iz strojarstva, prepoznavanje, oblikovanje i rješavanje problema iz prakse, primjenu drugih stečenih znanja iz tehnike, matematike i računarstva, korištenje suvremenih inženjerskih alata, razumijevanje timskog rada i učinkovite komunikacije, razumijevanje etičnosti i etičke odgovornosti, te razumijevanje utjecaja inženjerskih rješenja na društvo i okolinu. Student koji završi ovaj studij sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje šire obrazovanje.

aim of the study is to prepare the students for implementing basic and specialistic knowledge in the field of mechanical engineering, recognizing, defining and solving practical problems, implementing other acquired engineering knowledge, math and computing, using modern engineering tools, understanding team work and efficient communication, understanding ethics and responsibility and the influence of engineering solutions on society and the environment. At the end of study, students are able to continue with education and professional development and possess a broader education.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ BRODOGRADNJE

Preddiplomski sveučilišni studij brodogradnje priprema studente za diplomski sveučilišni studij brodogradnje, ali im pruža i mogućnost zapošljavanja na odgovarajućim stručnim poslovima. Na preddiplomskom studiju

UNDERGRADUATE UNIVERSITY STUDY OF NAVAL ARCHITECTURE

The undergraduate university study of naval architecture prepares the students for graduate university study and gives them the opportunity for employment in appropriate professional employment positions. At the

Preddiplomski sveučilišni studiji

S	STROJARSTVO			BRODOGRADNJA			ELEKTROTEHNIKA			RAČUNALSTVO		
	Predmet	N	B	Predmet	N	B	Predmet	N	B	Predmet	N	B
I	Matematika I	5	7	Matematika I	5	7	Matematika I	5	7	Matematika I	5	7
	Statika	5	6	Statika	5	6	Fizika I	4	5	Elektrotehnika R	4	7
	Materijali I	3	4	Materijali I	3	4	Osnove elektrotehnike I	5	7	Programiranje	4	6
	Uvod u modernu fiziku	3	4	Uvod u modernu fiziku	3	4	Uvod u računalstvo	4	6	Primjena računala	4	6
	Primjena računala	3	4	Primjena računala	3	4	Inženjerska grafika i dokumentiranje	3	4	Engleski jezik I	3	3
	Inženjerska grafika	3	4	Inženjerska grafika	3	4						
II	Matematika II	5	7	Matematika II	5	7	Matematika II	5	7	Matematika II	5	7
	Kinematika	4	6	Kinematika	4	6	Fizika II	4	5	Elektronika	4	6
	Nauka o čvrstoći I	5	7	Nauka o čvrstoći I	5	7	Osnove elektrotehnike II	5	7	Programsko inženjerstvo	4	7
	Materijali II	3	5	Materijali II	3	5	Programiranje	4	6	Digitalna logika	4	6
	Oblikovanje pomoću računala	3	4	Oblikovanje pomoću računala	3	4	Tehnologija materijala	3	4	Engleski jezik II	3	3
III	Dinamika	3	5	Dinamika	3	5	Inženjerska matematika ET	5	7	Algoritmi i strukture podataka	5	7
	Mehanika fluida	4	5	Mehanika fluida	4	5	Mjerenja u elektrotehnici	5	7	Operacijski sustavi		
	Nauka o toplini I	5	7	Zavarivanje I	3	4	Elektronika I	4	6	Građa računala	4	7
	Mjerna tehnika	3	5	Termodinamika BG	3	5	Električne mreže	4	7	Signali i sustavi	4	6
	Primjena računalnih metoda	3	5	Uvod u plovne objekte	3	4	Strani jezik I	2	3	Izborni predmet I	4	6
	Strani jezik I	2	3	Osnove konstrukcijskih elemenata	3	4					3	4
				Strani jezik I	2	3						
IV	Inženjerska statistika	3	5	Inženjerska statistika	3	5	Digitalna logika	4	6	Računalne mreže	4	7
	Konstrukcijski elementi I	5	7	Brodske forme	4	6	Elektronika II	4	6	Baze podataka	4	6
	Hidraulički strojevi	3	5	Osnove gradnje broda	3	5	Osnove regulacijske tehnike	4	6	Računalom podržana mjerenja	3	5
	Proizvodne tehnologije	4	5	Konstrukcija broda I	4	6	Izborni kolegij	3	4	Poslovno komuniciranje		
	Strani jezik II	2	3	Strani jezik II	2	3	Strani jezik II	2	3	Izborni predmet II	2	3
	Stručna praksa		5	Stručna praksa		5	Stručna praksa		5	Stručna praksa	3	4
												5
V	Konstrukcijski elementi I	5	7	Plovnost i stabilitet broda	5	7	Električni strojevi	5	6	Ugradbeni računalni sustavi	5	7
	Toplinski strojevi i uređaji	3	5	Oprema broda	4	6	Energetska elektronika	4	6	Razvoj web-aplikacija	4	7
	Proizvodni strojevi, alati i naprave	3	5	Konstrukcija broda II	4	6	Signali i sustavi	4	6	Računalna grafika	4	6
	Zavarivanje I	3	4	Tehnologija brodogradnje	4	6	Izborni kolegij skupine	4	7	Izborni predmet III	4	5
	Tehnološki procesi	3	4	Izborni projekt	3	5	Izborni projekt	3	5	Izborni projekt	3	5
	Izborni projekt	3	5									
VI	Energetski sustavi	3	4	Organizacija i ekonomika posl. sust.	3	4	Elektromotorni pogoni	4	5	Informacijski sustavi	4	8
	Automatizacija	3	4				Organizacija i ekonomika posl. sust.	3	4	Organizacija i ekonomika posl. sust.	3	4
	Osiguranje kvalitete	3	4	Hidrodinamika plovnih objekata	5	8						
	Organizacija i ekonomika posl. sust.	3	4	I			Izborni kolegij skupine	5	7	Izborni predmet II	4	4
	Slobodni kolegij			Slobodni kolegij	3	4	Slobodni kolegij	3	4	Slobodni predmet	3	4
	Završni rad	3	4	Slobodni kolegij	3	4	Završni rad		10	Završni rad		10
			10	Završni rad		10						

(Studijski programi pojedinih studija prikazani su na gornjoj i na tablicama koje slijede: s N su označeni sati nastave tjedno, s B broj ECTS-bodova pripadnog predmeta, a sa S semestar u kojem se predmet predaje.)

Undergraduate University Studies

S	MECHANICAL ENGINEERING			NAVAL ARCHITECTURE			ELECTRICAL ENGINEERING			COMPUTER SCIENCE		
	Course	N	B	Course	N	B	Course	N	B	Course	N	B
I	Mathematics I	5	7	Mathematics I	5	7	Mathematics I	5	7	Mathematics I	5	7
	Statics	5	6	Statics	5	6	Physics I	4	5	Electrical Engineering	4	7
	Materials I	3	4	Materials I	3	4	Fundamentals of Electrical Engineering I	5	7	Programming	4	6
	Introduction in Modern Physics	3	4	Introduction in Modern Physics	3	4	Introduction to Computer Engineering	4	6	Applied Computing	4	6
	Applied Computing	3	4	Applied Computing	3	4	Engineering Graphics and Documenting	3	4	English Language I	3	3
	Engineering Graphics	3	4	Engineering Graphics	3	4						
II	Mathematics II	5	7	Mathematics II	5	7	Mathematics II	5	7	Mathematics II	5	7
	Kinetics	4	6	Kinetics	4	6	Physics II	4	5	Electronics	4	6
	Strength of Materials I	5	7	Strength of Materials I	5	7	Fundamentals of Electrical Engineering II	5	7	Software Engineering	4	7
	Materials II	3	5	Materials II	3	5				Digital Logic	4	6
	Modelling by Computer	3	4	Modelling by Computer	3	4	Programming	4	6	English Language II	3	3
							Technology of Materials	3	4			
III	Dynamics	3	5	Dynamics	3	5	Mathematics for Engineers ET	5	7	Algorithms and Data Structures	5	7
	Fluid Mechanics	4	5	Fluid Mechanics	4	5	Electrical Measurements	5	7			
	Thermodynamics I	5	7	Welding Engineering I	3	4	Electronics I	4	6	Operating Systems	4	7
	Measuring Technique	3	5	Thermodynamics	3	5	Electrical Circuits	4	7	Computer Structure	4	6
	Applied Computational Methods	3	5	Introduction to Floating Objects	3	4	Foreign Language I	2	3	Signals and Systems	4	6
	Foreign Language I	2	3	Fundamentals of Machine Elements Design	3	4				Elective course	3	4
				Foreign Language I	2	3						
IV	Statistics for Engineers	3	5	Statistics for Engineers	3	5	Digital Logic	4	6	Computer Networks	4	7
	Machine Elements Design I	5	7	Ship Hull Forms	4	6	Electronics II	4	6	Databases	4	6
	Hydraulic Machines	3	5	Basics of Ship Production	3	5	Basic of Automatic Control	4	6	Computer Aided Measurements	3	5
	Manufacturing Technologies	4	5	Ship Construction I	4	6	Elective Course	3	4	Business Communication	2	3
	Foreign Language II	2	3	Foreign Language II	2	3	Foreign Language II	2	3	Elective course	3	4
	Professional practice		5	Professional practice		5	Professional practice		5	Professional practice		5
V	Machine Elements Design I	5	7	Seaworthiness and Stability of the Ship	5	7	Electrical Machines	5	6	Embedded Computer Systems	5	7
	Heat Engines and Devices	3	5				Power Electronics	4	6	Web Application Development	4	7
	Production Machines, Jigs, Fixtures and Tools	3	5	Ship Equipment	4	6	Signals and Systems	4	6	Computer Graphics	4	6
				Ship Construction II	4	6	Elective group course	4	7	Free course	4	5
	Welding Engineering I	3	4	Shipbuilding Technology	4	6	Elective project	3	5	Elective project	3	5
	Technological Processes	3	4	Elective project	3	5						
	Elective project	3	5									
VI	Energy Systems	3	4	Organization and Economics of Enterprises	3	4	Electrical Drives	4	5	Informacijski sustavi	4	8
	Automation	3	4				Organization and Economics of Enterprises	3	4	Organization and Economics of Enterprises	3	4
	Quality Assurance	3	4	Marine Hydrodynamics I	5	8						
	Organization and Economics of Enterprises	3	4	Free course	3	4	Elective group course	5	7	Elective course	4	4
	Free course	3	4	Free course	3	4	Free course	3	4	Free course	3	4
	Final work		10	Final Work		10	Final work		10	Final work		10

(Curricula of the described studies are presented above and in the tables below: N signifies lecturing hours per week, with B representing the number of ECTS credits and S the semester in which the subject is placed.)

brodogradnje polaznicima se u razumnoj količini i na dovoljno visokoj razini daje znanje iz temeljnih tehničkih sadržaja s jedne strane, te iz glavnih brodograđevnih sadržaja s druge strane, kako bi u svojoj radnoj praksi, kao i u svojem daljnjem stručnom i znanstvenom usavršavanju, uvijek bili na razini postavljenih zadataka. Svojim opsegom i sadržajem ovaj studij polazniku daje potrebnu širinu stručnih znanja koja ga po završetku studija osposobljava za samostalan rad, odnosno za rad u stručnim timovima u bilo kojem segmentu brodograđevne struke. Završeni student ovog studija sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje i šire obrazovanje.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ ELEKTROTEHNIKE

Završetkom preddiplomskoga sveučilišnog studija elektrotehnike polaznik posjeduje temeljna znanja iz matematike, fizike, elektrotehnike i primjene računala. Nadalje, zna pripremiti i izvesti eksperiment, odnosno određena mjerenja te ih pravilno obraditi i protumačiti rezultate. Sposoban je identificirati, formulirati i riješiti problem. Pri tome se zna koristiti suvremenim inženjerskim alatima i spreman je za rješavanje šireg spektra inženjerskih zadataka uz mogućnost brze specijalizacije u određenom području. Polaznik je također sposoban raditi u (multidisciplinarnoj) grupi, razumije važnost učinkovite komunikacije u rješavanju određenoga inženjerskog problema, a u svojem radu poštuje profesionalne i etičke norme te zaštitu okoliša. Nakon završetka studija sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje šire obrazovanje.

undergraduate study of naval architecture, students on the one hand acquire a reasonable quantity and quality of knowledge in basic engineering and, on the other hand, they acquire knowledge about the main constructs of shipbuilding, so that they can be prepared for professional jobs, as well as for further professional education. With its volume and contents, this study gives adequate width of knowledge so that students can work either in teams or as individuals in any field of the shipbuilding process. At the end of study, students are able to continue with education and professional development and possess broader education.

UNDERGRADUATE UNIVERSITY STUDY OF ELECTRICAL ENGINEERING

Upon completion of the undergraduate university study of electrical engineering, the student obtains a basic knowledge of math, physics, basic electrical engineering and applied computer science. Moreover, he knows how to prepare and conduct experiments and appropriate measurement and correctly process and recognize the obtained results. He is capable of identifying, formulating and solving problems. In such a way, he is able to use modern engineering tools and is prepared for solving a wide spectrum of engineering tasks related to the ability of fast specialization in certain fields. He is able to work in teams, he understands the importance of efficient communication in solving particular engineering problems and he acts in accordance with professional and ethic codes, as well as environmental protection standards. At the end of the study, students are able to continue with their education and professional development and they possess a broader education.

PREDDIPLOMSKI SVEUČILIŠNI STUDIJ RAČUNARSTVA

Ovaj preddiplomski sveučilišni studij ima za cilj pružiti razinu znanja koje će osigurati profil stručnjaka osposobljenih za samostalno obavljanje poslova sastavljanja, održavanja i posluživanja računalnih sustava kao i njihova korištenja kao alata. Ova znanja obuhvaćaju područja računalne programske i sklopovske opreme te znanja iz područja računalnih mreža i sustava. Time se osigurava razina izobrazbe nužna za svladavanje niza stručnih poslova. Pri tome je polaznik sposoban raditi u (multidisciplinarnoj) skupini, razumije važnost učinkovite komunikacije na rješavanju određenoga inženjerskog problema, a u svojem radu poštuje profesionalne i etičke norme te zaštitu okoliša. Završeni polaznik ovog studija sposoban je uključiti se u kontinuirano obrazovanje i profesionalni razvoj te posjeduje šire obrazovanje.

UNDERGRADUATE UNIVERSITY STUDY OF COMPUTER SCIENCE

This study program aims at providing a level of knowledge that will yield a profile of experts trained to independently perform tasks of assembling, serving and maintaining computer systems and using the same as tools. This category includes knowledge of computer software and hardware as well as knowledge in the field of computer networks and systems, ensuring the level of training required to master a number of related jobs. The student is also able to work in a group and he understands the importance of effective communication when solving specific engineering problems. His work respects professional and ethical standards and environmental protection. Upon completion of the study program, the student will be able to engage in lifelong learning and professional development. He will have acquired a broad education.

DIPLOMSKI SVEUČILIŠNI STUDIJ STROJARSTVA

Na ovom studiju omogućena je specijalizacija u jednome od sljedećih područja:

- Konstruiranje i mehatronika
- Računalno inženjerstvo
- Tehnološko-informatičko inženjerstvo
- Industrijsko inženjerstvo i menadžment
- Kompjutorska analiza konstrukcija i strojeva
- Termotehnika
- Procesno i energetsko strojarstvo
- Brodostrojarstvo
- Inženjerstvo materijala

Diplomskim sveučilišnim studijem strojarstva studenti stječu potrebna uskospecijalistička

GRADUATE UNIVERSITY STUDY OF MECHANICAL ENGINEERING

In this study, specialization is enabled in one of the following fields:

- Mechanical design and mechatronics
- Computer engineering
- Technological information engineering
- Industrial engineering and management
- Computer analysis of machine elements and machines
- Thermodynamics
- Process and energy mechanical engineering
- Naval mechanical engineering
- Engineering of materials

This study enables students to obtain the necessary specialist knowledge in

znanja iz navedenih područja te su time osposobljeni za obavljanje najsloženijih inženjerskih zadaća temeljenih na znanstvenom pristupu rješavanju problema. Stječu se nova specijalistička znanja iz strojarstva i sposobnost njegove primjene, kao i poznavanje i primjena drugih specijalističkih znanja iz tehnike, matematike i računarstva. Studenti usvajaju sposobnost kontinuiranog obrazovanja i samoobrazovanja, sposobnosti samostalnog istraživanja, otkrivanja novih znanja, pripreme i izvođenja eksperimenata, te tumačenja podataka. Studijem se stječu znanja i kompetencije potrebne za projektiranje novih sustava, komponenata ili procesa te učinkovito djelovanje u ulozi vođe tima. Studijski program sličan je programima studija na inozemnim visokim učilištima uz postizanje specifičnih zahtjeva sredine za koju se prvenstveno školuju kadrovi na Tehničkom fakultetu Sveučilišta u Rijeci. U studijski program uvedene su preporuke iz Bolonjske deklaracije koje se odnose na način osiguranja kvalitete studijskog programa te mobilnost pri studiranju i priznavanju diploma.

the mentioned fields and to perform the most complex engineering tasks based on a scientific problem solving approach. Students acquire new specialised knowledge of mechanical engineering and the ability to implement it, as well as that of other topics in engineering, maths and computing. Students are able to continue their education and self-education, to autonomously perform research and experimental work, as well as to validate the obtained results. The study extends the knowledge and competencies necessary for designing new systems, components or processes and the efficient management of projects as team leaders. The curriculum is similar to other programs at foreign universities with some specificities tuned to the needs of the surroundings that most of the students will work in. In the study program, recommendations of the Bologna system are implemented, especially concerning quality assurance, mobility during the study, as well as diploma recognition.

DIPLOMSKI SVEUČILIŠNI STUDIJ BRODOGRADNJE

Na diplomskom sveučilišnom studiju brodogradnje osposobljavaju se budući stručnjaci koji će raditi na poslovima i zadacima projektiranja i konstruiranja različitih vrsta i tipova plovnih objekata, te razvoja i vođenja tehnoloških procesa, poglavito gradnje i održavanja plovnih objekata i objekata morske tehnologije, na poslovima klasifikacijskih i nadzornih institucija te drugim poslovima u širem području brodogradnje i inženjerstva morske tehnologije, odnosno pomorstva.

GRADUATE UNIVERSITY STUDY OF NAVAL ARCHITECTURE

In this study, professional qualifications are acquired for tasks pertaining to the design and construction of various types of vessels, the development and leading of technological processes (mainly in shipbuilding and servicing of vessels and other objects of maritime technology), qualifications pertaining to jobs in classification and supervising institutions, as well as other jobs in the wide field of naval architecture and maritime engineering.

Na ovom studiju moguće je odabrati sljedeće izborne skupine:

- Projektiranje i konstrukcija plovnih objekata
- Tehnologija i organizacija brodogradnje.

Studijski je program usklađen s preporukama u Bolonjskoj deklaraciji koje se odnose na način osiguranja kvalitete studijskog programa te mobilnost pri studiranju i priznavanju diploma.

In this study, it is possible to choose the following elective groups:

- Design and construction of vessels
- Technology and organization of shipbuilding

In the study program, recommendations of the Bologna system are implemented, especially concerning quality assurance, mobility during the study, as well as diploma recognition.

DIPLOMSKI SVEUČILIŠNI STUDIJ ELEKTROTEHNIKE

Na ovom studiju omogućena je specijalizacija u jednom od sljedećih područja:

- Automatika
- Elektroenergetika.

GRADUATE UNIVERSITY STUDY OF ELECTRICAL ENGINEERING

In this study, specialization in one of the following fields is made possible:

- Automatics
- Power engineering.

Diplomski sveučilišni studiji

S	STROJARSTVO			BRODOGRADNJA			ELEKTROTEHNIKA			RAČUNARSTVO		
	Predmet	N	B	Predmet	N	B	Predmet	N	B	Predmet	N	B
I	Inženjerska matematika	4	6	Inženjerska matematika	4	6	Numerička i stohastička	4	6	Stohastička matematika	4	6
	Nauka o čvrstoći II	3	5	Čvrstoća broda	3	5	matematika			Teorija informacija i kodiranje	4	6
	Nauka o toplini II	3	5	Brodska elektrotehnika	3	4	Upravljanje elektromo-	4	6	Predmet izborne skupine	4	6
	Predmet izborne skupine	4	5	Metodologija gradnje plov-	3	5	tornim pogonima			Predmet izborne skupine	4	6
	Predmet izborne skupine	3	5	nih objekata			Predmet izborne skupine	4	6	Predmet izborne skupine	4	6
	Predmet izborne skupine	3	4	Predmet izborne skupine	4	6	Predmet izborne skupine	4	6			
				Predmet izborne skupine	3	4	Predmet izborne skupine	4	6			
II	Projekt I	2	5	Brodski sustavi	4	5	Projekt I	2	5	Upravljanje u programskom	6	7
	Slobodni predmet	3	5	Projekt I	2	5	Slobodni predmet	3	5	inženjerstvu		
	Stručna praksa	-	5	Slobodni predmet	3	5	Stručna praksa	-	5	Projekt I	2	5
	Predmet izborne skupine	4	5	Stručna praksa	-	5	Predmet izborne skupine	4	5	Stručna praksa	3	5
	Predmet izborne skupine	4	5	Predmet izborne skupine	4	5	Predmet izborne skupine	4	5	Predmet izborne skupine	4	6
	Predmet izborne skupine	3	5	Predmet izborne skupine	3	5	Predmet izborne skupine	4	5	Predmet izborne skupine	4	6
III	Projekt II	2	5	Osnivanje plovnih objekata I	4	5	Projekt II	2	5	Napredni operacijski sustavi	6	8
	Slobodni predmet	3	5	Projekt II	2	5	Slobodni predmet	3	5	Projekt II	2	5
	Predmet izborne skupine	4	5	Slobodni predmet	3	5	Predmet izborne skupine	4	6	Slobodni predmet	3	5
	Predmet izborne skupine	4	5	Predmet izborne skupine	4	5	Predmet izborne skupine	4	5	Predmet izborne skupine	4	6
	Predmet izborne skupine	4	5	Predmet izborne skupine	4	5	Predmet izborne skupine	4	5	Predmet izborne skupine	4	6
	Predmet izborne skupine	3	5	Predmet izborne skupine	3	5	Predmet izborne skupine	3	4			
IV	Slobodni predmet	3	5	Slobodni predmet	3	5	Slobodni predmet	3	5	Projektni management	2	3
	Predmet izborne skupine	3	5	Predmet izborne skupine	3	5	Predmet izborne skupine	4	8	Slobodni predmet	3	5
	Predmet izborne skupine	3	5	Predmet izborne skupine	3	5	Predmet izborne skupine	4	7	Predmet izborne skupine	4	6
	Predmet izborne skupine	3	5	Predmet izborne skupine	3	5	Diplomski rad		10	Predmet izborne skupine	4	6
	Diplomski rad		10	Diplomski rad		10				Diplomski rad		10
Moduli	Konstruiranje i mehatronika Računalno inženjerstvo Tehnološko informatičko inženjerstvo Industrijsko inženjerstvo i menadžment Kompjutorska analiza konstrukcija i strojeva Termotehnika Procesno i energetsko strojarstvo Brodostrojarstvo Inženjerstvo materijala			Projektiranje i konstrukcija plovnih objekata Tehnologija i organizacija brodogradnje			Automatika Elektroenergetika					

Graduate university studies												
S	MECHANICAL ENGINEERING			NAVAL ARCHITECTURE			ELECTRICAL ENGINEERING			COMPUTER SCIENCE		
	Subject	N	B	Subject	N	B	Subject	N	B	Subject	N	B
I	Mathematics for Engineers	4	6	Mathematics for Engineers	4	6	Numerical and Stochastic	4	6	Stochastic Mathematics	4	6
	Strength of Materials II	3	5	Ship Strength	3	5	Mathematics			Information Theory and	4	6
	Thermodynamics II	3	5	Ships Electrical Engineering	3	4	Control of Electrical Drives	4	6	Coding		
	Elective group course	4	5	Methodology of Shipbuilding	3	5	Elective group course	4	6	Elective group course	4	6
	Elective group course	3	5	Elective group course	4	6	Elective group course	4	6	Elective group course	4	6
	Elective group course	3	4	Elective group course	3	4	Elective group course	4	6	Elective group course	4	6
II	Project I	2	5	Ship Systems	4	5	Project I	2	5	Software Engineering	6	7
	Free course	3	5	Project I	2	5	Free course	3	5	Management		
	Professional practice	-	5	Free course	3	5	Professional practice	-	5	Project I	2	5
	Elective group course	4	5	Professional practice	-	5	Elective group course	4	5	Professional practice	4	5
	Elective group course	4	5	Elective group course	4	5	Elective group course	4	5	Elective group course	4	7
	Elective group course	3	5	Elective group course	3	5	Elective group course	4	5	Elective group course	4	6
III	Project II	2	5	Ship Design I	4	5	Project II	2	5	Advanced Operating Systems	6	8
	Free course	3	5	Project II	2	5	Free course	3	5	Project II	2	5
	Elective group course	4	5	Free course	3	5	Elective group course	4	6	Free course	3	5
	Elective group course	4	5	Elective group course	4	5	Elective group course	4	5	Elective group course	4	6
	Elective group course	4	5	Elective group course	4	5	Elective group course	4	5	Elective group course	4	6
	Elective group course	3	5	Elective group course	3	5	Elective group course	3	4			
IV	Free course	3	5	Free course	3	5	Free course	3	5	Project Management	2	3
	Elective group course	3	5	Elective group course	3	5	Elective group course	4	8	Free course	3	5
	Elective group course	3	5	Elective group course	3	5	Elective group course	4	7	Elective group course	4	6
	Elective group course	3	5	Elective group course	3	5	Graduation thesis		10	Elective group course	4	6
	Graduation thesis		10	Graduation thesis		10				Graduation thesis		10
Modules	Mechanical Design and Mechatronics Computer Engineering Technological Information Engineering Industrial Engineering and Management Computer Analysis of Machine Elements and Machines Thermodynamics Process and Energy Mechanical Engineering Naval Mechanical Engineering Engineering of Materials			Design and Construction of Vessels Technology and Organization of Shipbuilding			Automatics Power Engineering					

Studenti stječu potrebna specijalistička znanja iz navedenih područja te su time osposobljeni za obavljanje stručnih, ali i znanstvenih poslova iz domene elektrotehnike. Student po završetku studija mora znati u potpunosti voditi samostalno istraživanje. Njegovi radni zadaci uključuju ne samo rješavanje problema na postojećim sustavima, nego i projektiranje novih sustava, komponenata ili procesa uz postavljene uvjete. Pri tome mora biti sposoban djelovati i kao vođa i kao član skupine ili istraživačkog tima. Studijski je program usklađen s preporukama u Bolonjskoj deklaraciji koje se odnose na način osiguranja kvalitete studijskog programa te mobilnost pri studiranju i priznavanju diploma.

Students acquire the necessary specialistic knowledge in the fields mentioned above, so that they are enabled to perform the most complex professional engineering tasks as well as those based on a scientific approach to problem solving in the area of electrical engineering. Students should be able to perform autonomous research. The student's tasks include not only problem solving of existing systems, but also the design of new systems, components and processes based on given specifications. Therefore, he is capable of working as a team or research group member or leader. In the study program, recommendations of the Bologna system are implemented, especially concerning quality assurance, mobility during the study, as well as diploma recognition.

DIPLOMSKI SVEUČILIŠNI STUDIJ RAČUNARSTVA

Diplomskim svučilišnim studijem računarstva studenti stječu potrebna uskospecijalistička znanja iz jednog od navedenih područja:

- Programsko inženjerstvo
- Računalni sustavi

Time su osposobljeni za obavljanje najsloženijih zadataka temeljenih na znanstvenom pristupu rješavanju problema. Studenti usvajaju sposobnost interdisciplinarnog pristupa integraciji sustava, obrade informacija i traženja inovativnih rješenja. Samostalno će projektirati, upravljati, analizirati problem i predlagati rješenja vezana uz razvoj sklopovske i programske podrške i umrežavanja sustava. Znat će učinkovito birati i primjenjivati odgovarajuće suvremene alate i metode iz struke na kompleksne inženjerske aktvinosti. Steći će znanja i vještine za projektiranje

GRADUATE UNIVERSITY STUDY OF COMPUTER SCIENCE

By completing the university graduate programme in computer science, students attain the necessary narrowly specialised knowledge in one of the following areas:

- Software engineering
- Computer systems

Students are trained to performe the most complex engineering tasks based on the scientific approach to problem solving. They attain the skills needed for information processing, seeking innovative solutions and performing interdisciplinary approach to systems integration. Students will be able to independently plan, manage, analyse problems and propose solutions related to the development of hardware and software. They will learn how to efficiently select and apply modern tools and procedures from this field on complex engineering activities. They will

sustava, komponenata i procesa koji odgovaraju specifičnim potrebama određenih područja.

POSLIJEDIPLOMSKI DOKTORSKI STUDIJ

Završetkom ovoga studija student stječe stupanj doktora znanosti koji prvenstveno označava da superiorno poznaje određeno znanstveno područje unutar tehničkih znanosti i da je dokazao sposobnost originalnoga znanstvenog istraživanja. Njegove kompetencije obuhvaćaju vrsno poznavanje literature i nerazjašnjenih problema iz određenog područja te sposobnost osmišljavanja i provođenja znanstvenoistraživačkog projekta do kraja, objavljivanja rezultata istraživanja te prezentiranja tih rezultata drugim znanstvenicima, izražavanja svojih stavova u prisutnosti eksperta u području (na kongresima, seminarima, gostovanjima na drugim institucijama itd.) Njegove osobine obuhvaćaju i želju da prenese svoje znanje i iskustvo na mlađe generacije studenata, kritičnost, u prvom redu prema vlastitom istraživanju, ali i radu drugih te sposobnost prilagođavanja promjenama koje dolaze.

Nakon završetka doktorskog studija otvaraju se brojne mogućnosti nastavka znanstvenoistraživačkog rada na matičnoj instituciji ili srodnim institucijama u Hrvatskoj ili inozemstvu, kao i postdoktorskog usavršavanja. Također otvaraju se i mogućnosti zapošljavanja u javnom i privatnom sektoru, posebno u onim gospodarskim subjektima s kojima Fakultet ima razvijenu suradnju, ali i drugdje u Hrvatskoj i inozemstvu.

acquire knowledge and skills for designing systems, components and processes that meet the specific needs of certain domains.

POSTGRADUATE DOCTORAL STUDY

With the completion of the study, the student gains the academic degree of Doctor of Science. He has a superior knowledge of a particular scientific field within the technical sciences and he will have proven to have the capability to conduct original scientific research. His competences cover comprehension of literature and unsolved problems of a particular area and the ability to conduct a scientific project up to its completion, to publish the research results and to present these results to other scientists, the ability to express his opinion in the presence of experts in the research area (at conferences and similar gatherings). His characteristics include the desire to transfer his knowledge to the younger generations, criticism, in the first place towards his own work, but also towards the work of others and the ability to adapt to imminent changes.

Upon completion of the doctoral study, numerous possibilities for the continuation of scientific work are present at the Faculty of Engineering or other institutions in Croatia and abroad, as well as the possibility to continue education in postdoctoral study. Also, the possibility of finding an occupation in the public as well as in the private business sector becomes available (e.g. entities with whom the Faculty of Engineering has developed collaboration), as well as in other enterprises in Croatia and abroad.

Poslijediplomski doktorski studij

Zajednički predmeti: Metodologija znanstvenoistraživačkog rada; Matematičko modeliranje i numeričke metode; Metode optimizacije; Statističke metode i stohastički procesi

Moduli / Predmeti po modulima

1. Proizvodno strojarstvo	2. Termoenergetika	3. Računarska mehanika	4. Projektiranje i gradnja plovnih objekata	5. Konstruiranje u strojarstvu	6. Osiguranje kvalitete i vođenje tehničkih sustava	7. Ekološko inženjerstvo i zaštita okoliša
Planiranje i vođenje proizvodnje	IP iz toplinskih znanosti	Elastomehanika i plastomehanika	Metodologija projektiranja plovnih objekata	IP iz hidrostatskih i pneumatskih prijenosnika	Upravljanje kvalitetom	IP iz zaštite okoliša
IP iz konvencionalne obrade odvajanjem čestica	Numeričko modeliranje prijelaza topline	MKE i optimizacija konstrukcija	Pomorstvenost i upravljivost plovnih objekata	Modeliranje inženjerskih konstrukcija	Planiranje i vođenje proizvodnje	Opća ekologija
Deformabilnost i suvremeno oblikovanje deformiranjem	Optimizacija energetskih procesa	Viskoelastičnost i viskoplastičnost	IP iz osnivanja plovnih objekata	Nauka o konstruiranju	Statistička kontrola procesa	Zaštita mora i priobalja
Primjenjena teorija plastičnosti u procesima oblikovanja	IP iz brodskih strojnih kompleksa	Stabilnost konstrukcija	Optimizacija projekta broda	IP iz konstrukcijskih elemenata	Automatizacija postrojenja i sustava	Trendovi i instrumenti zaštite okoliša
IP iz nekonvencionalnih postupaka obrade	Termodinamička analiza procesa	Nelinearna analiza konstrukcija	Hidrodinamika plovnih objekata	Specijalni mehanički prijenosnici	Projektiranje baze podataka	Kemija okoliša
Modeliranje procesa obrade	Eksperimentalne metode u toplinskoj tehnici i termoenergetici	Tankostijene konstrukcije	Integralna tehnologija gradnje broda	Konstrukcija i optimizacija zupčastih prijenosnika	Poslovno odlučivanje	Upravljanje održivim razvojem i zaštita okoliša
Razvojni i proizvodni management	Termodinamika smjesa i toplinski uređaji	Kontaktna mehanika	IP iz metodologije gradnje plovnih objekata	IP iz prijenosnika snage	Modeli stohastičkih procesa informacija	Zaštita okoliša u energetici i procesnoj industriji
CAM, CAP, CAD/NC-CIM	IP iz tehnike hlađenja i tehnike niskih temperatura	IP iz termomehanike	Ugovaranje plovnih objekata	Strateško planiranje	Pouzdanost tehničkih sustava	Pravo zaštite okoliša
Roboti i manipulatori	IP iz izmjenjivača topline	Računalno modeliranje plastičnog oblikovanja metala	IP iz otpora plovnih objekata	IP iz transportnih sredstava u industriji	Arhitektura računarskih sustava za vođenje	Instrumentacija i analitičke tehnike u zaštiti okoliša
IP iz fleksibilnih proizvodnih sustava	IP iz grijanja i klimatizacije	Vibracije i trajnost strojeva i konstrukcija	IP iz propulzije plovnih objekata	Metoda rubnih elemenata	Inteligentni sustavi	Okoliš i gospodarstvo
Inteligentni proizvodni sustavi	Obnovljivi izvori energije	Mehatronika u strojarstvu	IP iz dinamike plovnih objekata	Specijalni hidrostatski prijenosnici	Sustavi za podršku odlučivanju	Zaštita okoliša u tehnici hlađenja
Metode simulacije u proizvodnji	Racionalna potrošnja energije	Kinematika i dinamika robota	Vjerojatnosno predviđanje morskih valova	Kontaktni problemi u analizi konstrukcijskih elemenata	Mikroekonomija i konkurentnost	Dinamika procesa
Optimizacija tehnoloških procesa	Numeričko modeliranje procesa izgaranja	Zaštita od buke i vibracija strojeva i konstrukcija	Valno opterećenje plovnih objekata	Principi konstrukcija visokih i ultravisokih preciznosti	Inženjerstvo kvalitete	
IP iz ispitivanja materijala	IP iz motora s unutarnjim izgaranjem	Dinamika fluida	Projektiranje strukture plovnih objekata	Podatljivi elementi i mehanizmi	Sigurnost tehničkih sustava	
Toplinska obrada i inženjerstvo površina	Suvremene konstrukcije motora	Računarska mehanika fluida				
Kemija materijala	Trajnost i pouzdanost termoenergetskih sustava	Hidrodinamika turbostrojeva				
Korozija i zaštita metala	IP iz toplinskih turbostrojeva	Turbulentno strujanje				
Mehanika prijeloma i umorljivost	IP iz generatora pare	Modeliranje onečišćenja zraka				
Kinetika mikrostrukturnih pretvorbi	IP iz brodskih energetskih postrojenja	Modeliranje strujanja sa slobodnom površinom				
Procesi oštećivanja materijala	Električne mreže	Modeliranje nestacionarnog strujanja u cjevovodima				

Postgraduate Doctoral Study							
Common subjects	Methodology of Science and Research Mathematical Modelling and Numerical Methods Optimization Methods Statistical Methods and Stochastic Processes						
Modules	1. Production Technologies in Mechanical Engineering	2. Termoenergetics	3. Computational Mechanics	4. Design and Building of Naval Vessels	5. Mechanical Engineering Design	6. Quality Assurance and Technical Systems Management	7. Ecological Engineering and Environmental Protection
Module Subjects	Planning and processing of manufacture Selected chapters on conventional machining processes Formability and Modern Forming Technology Application of Plasticity Theory in Forming Processes Selected chapters on nonconventional machining processes Machining process modeling Production and development management CAM, CAP, CAD/NC-CIM Robots and manipulators Selected chapters on flexible production systems Intelligent manufacturing systems Simulation methods in production Processes plans optimization Selected chapters on material testing Heat treatment and Surface Engineering Material chemistry Corrosion and Metals Protection Fracture Mechanics and Fatigue of Materials Kinetics of Microstructural Changes Processes of Damaging of Materials	Selected topics on thermal sciences Numerical modeling of heat transfer Optimization of energy processes Selected topics of marine machinery systems Thermodynamic analysis of processes Experimental methods in thermal and power engineering Thermodynamics of mixtures and thermal devices Selected topics in refrigeration and low-temperature refrigeration Selected topics on heat exchangers Selected topics on heating and air-conditioning Renewable energy sources Rational energy consumption Numerical modeling of combustion process Selected topics in internal combustion engines Advanced design of internal combustion engine Durability and reliability of thermal energy systems Selected topics on thermal turbomachines Selected topics on steam generators Selected topics marine energy systems Electrical circuits	Elastomechanics and Plastomechanics FEM and Structural Optimization Viscoelasticity and Viscoplasticity Structural Stability Nonlinear Structural Analysis Thin-walled Structures Contact mechanics Advanced Thermomechanics Computer Modeling of Metal Forming Plasticity Vibrations and Durability of Machines and Structures Mechatronics in Engineering Kinematics and Dynamics of Robots Protection against Noise and Vibrations of Machines and Structures Fluid dynamics Computational fluid mechanics Hydrodynamics of turbomachines Turbulent flow Air Pollution Modeling Free Surface Flow Modeling Unsteady pipe flow modeling	Methodology of Floating Objects Design Seakeeping and manoeuvrability Selected Chapter on Floating Objects design Ship Design Optimization Marine Hydrodynamics Integrated ship production technology Selected topics of floating objects production methodology Ship negotiation process Advanced Chapters of Ship Resistance Advanced Chapters of Ship Propulsion Selected topics in marine dynamics Probabilistic prediction of ocean waves Wave load of floating object Structural design of floating objects	Selected chapters of hydrostatic and pneumatic transmissions Modelling of engineering structures Design science Selected chapters of machine elements design Special mechanical transmissions Mechanical engineering design and optimization of gear transmitting Selected chapters of power transmissions Strategic planning Selected chapters of industrial transport equipment and devices Boundary elements method Special hydrostatic transmissions Contact problems in machine elements analyses Principles of high and ultra-high precision devices Compliant elements and mechanisms	Quality management Planning and processing of manufacture Statistical Process Control Plant and system automatization Design of data Base Business Decision Models of stochastic information processes Reliability of technical systems Architecture of computer guidance systems Intelligent systems Decision making support systems Microeconomics and competitiveness Quality engineering Safety of technical systems	Selected Topics on Environment Protection Environmental protection Zaštita mora i priobalja Trends and instruments in environmental protection Environmental chemistry Management of sustainable development and environmental protection Environment protection in energetics and process industry Pravo zaštite okoliša Instrumentation and analytical techniques in environment protection Environment and economy Environmental protection in refrigeration Dynamics of processes

Doktorski studij sastoji se od:

- provedbe znanstvenoistraživačkog rada pod nadzorom i uz pomoć mentora odnosno komentora koja rezultira izradom doktorskog rada (90 ECTS-bodova),
- polaganja obveznih i izbornih predmeta propisanih studijskim programom doktorskog studija (60 ECTS-bodova),
- boravka na drugim domaćim ili inozemnim sveučilišnim ili znanstvenim institucijama u trajanju od najmanje 4 mjeseca (20 ECTS-bodova),
- drugih aktivnosti koje obuhvaćaju prezentaciju znanstvenih rezultata na domaćim i međunarodnim znanstvenim skupovima, pisanje znanstvenih radova i sl. (30 ECTS-bodova).

Nastava doktorskog programa organizirana je u sedam modula:

1. Proizvodno strojarstvo
2. Termoenergetika
3. Računalna mehanika
4. Projektiranje i gradnja plovnih objekata
5. Konstruiranje u strojarstvu
6. Osiguranje kvalitete i vođenje tehničkih sustava
7. Ekološko inženjerstvo i zaštita okoliša

The doctoral study consists of:

- scientific research work under the guidance and help of a mentor and possibly a co-mentor, which results in the completion of a doctoral thesis (90 ECTS credits),
- sitting examinations for all obligatory and elective subjects prescribed by the curriculum of the doctoral study (60 ECTS credits),
- visiting other Croatian or foreign universities or scientific institutions in the duration of at least four months (20 ECTS credits),
- other activities that include the presentation of scientific research results at national or international scientific gatherings or the writing of scientific papers (30 ECTS credits).

The curriculum of the doctoral study comprises seven modules:

1. Production Technologies in Mechanical Engineering,
2. Thermoenergetics,
3. Computational Mechanics,
4. Design and Building of Naval Vessels,
5. Mechanical Engineering Design,
6. Quality Assurance and Technical System Management,
7. Ecological Engineering and Environmental Protection.

STRUČNI STUDIJ STROJARSTVA

Preddiplomski stručni studij strojarstva ima za cilj osposobljavanje stručnjaka strojarstva za rad na izvršavanju složenih operativnih poslova kod razrade projekata strojarskih konstrukcija, odnosno složenih operativnih poslova planiranja, pripreme, unapređenja i kontrole tehnoloških i proizvodnih procesa i planiranja, organiziranja i vođenja proizvodnih odnosno energetskih postrojenja.

STRUČNI STUDIJ BRODOGRADNJE

Preddiplomski stručni studij brodogradnje ima za cilj osposobljavanje stručnjaka brodogradnje za rad na izvršavanju složenih operativnih poslova pri razradi projekata plovnih objekata i objekata morske tehnologije i njihovih elemenata, odnosno složenih operativnih poslova planiranja, pripreme, unapređenja i kontrole procesa gradnje plovnih objekata.

STRUČNI STUDIJ ELEKTROTEHNIKE

Preddiplomski stručni studij elektrotehnike ima za cilj osposobljavanje stručnjaka elektrotehnike za sudjelovanje u projektiranju i konstruiranju elemenata elektroenergetskih prostrojenja, odnosno telekomunikacijskih uređaja, sustava i mreža, ovisno o odabranoj izbornoj skupini predmeta.

UNDERGRADUATE VOCATIONAL STUDY OF MECHANICAL ENGINEERING

The vocational study of mechanical engineering has the aim to prepare the students for their profession as mechanical engineers performing jobs that include complex operating tasks in mechanical design, planning, preparing, improvement and controlling of technological and production processes as well as planning, organizing and conducting of production or energy processes and plants.

UNDERGRADUATE VOCATIONAL STUDY OF NAVAL ARCHITECTURE

The vocational study of naval architecture has the aim to prepare the students for their profession as shipbuilding engineers performing jobs that include complex operating tasks in designing vessels and other maritime objects and their elements as well as planning, improvement and controlling vessel building processes.

UNDERGRADUATE VOCATIONAL STUDY OF ELECTRICAL ENGINEERING

The vocational study of electrical engineering has the aim, depending upon the chosen elective subject group, to prepare the students for their profession as electrical engineers in jobs which include designing and constructing elements of power plants, as well as telecommunication equipment, systems and networks.

Stručni studiji									
S	STROJARSTVO			BRODOGRADNJA			ELEKTROTEHNIKA		
	Predmet	N	B	Predmet	N	B	Predmet	N	B
I	Matematika I	5	7	Matematika I	5	7	Matematika I	5	7
	Mehanika I	5	7	Mehanika I	5	7	Fizika	4	6
	Materijali	4	6	Materijali	4	6	Osnove elektrotehnike ST I	5	8
	Osnove elektrotehnike	3	5	Osnove elektrotehnike	3	5	Materijali i tehnološki postupci	3	4
	Primjena računala ST	3	4	Primjena računala ST	3	4	Primjena računala ST	3	4
II	Matematika II	5	7	Matematika II	5	7	Matematika II	5	7
	Mehanika II	4	6	Mehanika II	4	6	Osnove elektrotehnike ST I	5	7
	Čvrstoća	4	6	Čvrstoća	4	6	Digitalna logika ST	4	6
	Tehničko crtanje	4	6	Tehničko crtanje	4	6	Mehanika i elementi konstrukcija ST	3	5
	Tehnologija obrade I	3	4	Plovni objekti	3	4	Tehničko dokumentiranje	3	4
III	Organizacija i ekonomika	3	4	Organizacija i ekonomika	3	4	Mjerenja u elektrotehnici ST	5	7
	Mehanika fluida ST	3	5	Mehanika fluida ST	3	5	Elektroničke komponente i osnovni	5	7
	Toplina	4	6	Toplina	4	6	sklop.		
	Tehnologija obrade II	4	6	Brodske forme	4	7	Linearne električne mreže	4	7
	Elementi strojeva I	4	6	Zavarivanje	3	5	Mehatronika	4	6
	Strani jezik I	2	3	Strani jezik I	2	3	Strani jezik I	2	3
IV	Elementi strojeva II	4	6	Hidrostatika broda	4	6	Osnove energetske elektronike	5	7
	Obradni strojevi	3	5	Strukturni elementi broda	4	6	Osnove automatske regulacije	4	7
	Toplinski strojevi i uređaji I	3	5	Tehnologija brodogradnje I	3	5	Kolegij izborne skupine	5	8
	Strani jezik II	2	3	Elementi strojeva I BG	3	5	Strani jezik II	2	3
	Stručna praksa I		5	Strani jezik II	2	3	Stručna praksa I		5
	Kolegij izborne skupine	4	6	Stručna praksa I		5			
V	Mjerna tehnika ST	3	5	Mjerna tehnika ST	3	5	Organizacija i ekonomika	3	4
	Toplinski strojevi i uređaji II	3	5	Tehnologija brodogradnje II	5	6	Kolegij izborne skupine	5	7
	Hidraulički strojevi	3	5	Tehnološki procesi gradnje i remonta	5	6	Kolegij izborne skupine	4	7
	Zavarivanje	3	5	broda			Kolegij izborne skupine	4	6
	Kolegij izborne skupine	4	5	Konstrukcija broda	4	6	Kolegij izborne skupine	4	6
	Kolegij izborne skupine	4	5	Oprema broda ST	4	7			
VI	Slobodni kolegij	4	5	Gradnja i održavanje malih plovnih	4	5	Slobodni kolegij	4	5
	Stručna praksa II		10	objekata			Stručna praksa II		10
	Kolegij izborne skupine	4	5	Slobodni kolegij	4	5	Kolegij izborne skupine	4	5
	Završni rad		10	Stručna praksa II		10	Završni rad		10
				Završni rad		10			

Vocational studies									
S	MECHANICAL ENGINEERING			NAVAL ARCHITECTURE			ELECTRICAL ENGINEERING		
	Subject	N	B	Subject	N	B	Subject	N	B
I	Mathematics I	5	7	Mathematics I	5	7	Mathematics I	5	7
	Mechanics I	5	7	Mechanics I	5	7	Physics	4	6
	Materials	4	6	Materials	4	6	Fundamentals of Electrical Engineering I VS	5	8
	Fundamentals of Electrical Engineering	3	5	Fundamentals of Electrical Engineering	3	5		3	4
	Applied Computing VS	3	4	Applied Computing VS	3	4	Materials and Technological Processes	3	4
							Applied Computing VS		
II	Mathematics II	5	7	Mathematics II	5	7	Mathematics II	5	7
	Mechanics II	4	6	Mechanics II	4	6	Fundamentals of Electrical Engineering II VS	5	7
	Strength of Materials	4	6	Strength of Materials	4	6		4	6
	Technical Drawing	4	6	Technical Drawing	4	6	Digital Logic VS	3	5
	Manufacturing Technology I	3	4	Floating Objects	3	4	Mechanics and Structural Elements VS	3	4
							Technical Documenting		
III	Organization and Economics	3	4	Organization and Economics	3	4	Electrical Measurements VS	5	7
	Fluid Mechanics VS	3	5	Fluid Mechanics VS	3	5	Electronic Components and Basic Circuits	5	7
	Thermodynamics	4	6	Thermodynamics	4	6	Linear Electric Circuits		
	Manufacturing Technology II	4	6	Ship Hull Forms	4	7	Mechatronics	4	7
	Machine Elements I	4	6	Welding Engineering	3	5	Foreign Language I	4	6
	Foreign Language I	2	3	Foreign Language I	2	3		2	3
IV	Machine Elements II	4	6	Ship Hydrostatics	4	6	Fundamentals of Power Electronics	5	7
	Machine Tools	3	5	Ship Structural Elements	4	6	Fundamentals of Automatic Regulation	4	7
	Heat Engines and Devices I	3	5	Shipbuilding Technology I	3	5	Elective group course	5	8
	Foreign Language II	2	3	Machine Elements I NA	3	5	Foreign Language I	2	3
	Professional Practice I		5	Foreign Language II	2	3	Professional practice I		5
	Elective group course	4	6	Professional practice I		5			
V	Measuring Technique VS	3	5	Measuring Technique VS	3	5	Organization and Economics	3	4
	Heat Engines and Devices II	3	5	Shipbuilding Technology II	5	6	Elective group course	5	7
	Hydraulic Machines	3	5	Technological Processes of Shipbuilding	5	6	Elective group course	4	7
	Welding Engineering	3	5	and Repair			Elective group course	4	6
	Elective group course	4	5	Ship Construction	4	6	Elective group course	4	6
	Elective group course	4	5	Ship Equipment VS	4	7			
VI	Free course	4	5	Small Craft Building and Maintenance	4	5	Free course	4	5
	Professional practice II		10	Free course			Professional practice II		10
	Elective group course	4	5	Professional practice II	4	5	Elective group course	4	5
	Final thesis		10	Final thesis		10	Final thesis		10
						10			

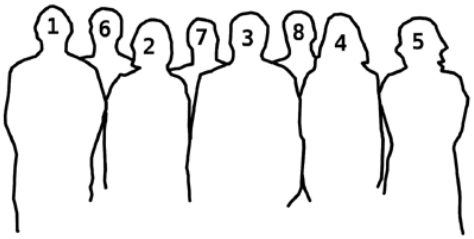
5. UPRAVA / DEAN'S OFFICE

Dekan / Dean:
Prof. dr. sc. / Full Prof. D. Sc. Goran Turkalj

Tehnički fakultet Sveučilišta u Rijeci / Faculty of Engineering – University of Rijeka
Vukovarska 58, 51000 Rijeka, HRVATSKA

URL: http://www.riteh.uniri.hr
e-pošta / e-mail: dekanat@riteh.hr

1. Juraj Šimunić
2. Sanja Prpić
3. Goran Turkalj
4. Anica Trp
5. Jasna Prpić-Oršić
6. Tomo Vergić
7. Zlatan Car
8. Lado Kranjčević



DEKAN

Red. prof. dr. sc. Goran Turkalj

PRODEKANI

Red. prof. dr. sc. Jasna Prpić-Oršić
znanstvena djelatnost

Red. prof. dr. sc. Zlatan Car
poslovni odnosi

Red. prof. dr. sc. Anica Trp
nastava

POMOĆNICI DEKANA

Red. prof. dr. sc. Juraj Šimunić

Doc. dr. sc Lado Kranjčević

GLAVNI TAJNIK

Tomo Vergić, dipl. iur.

URED DEKANA

Sanja Prpić, dipl. oec.
voditeljica

DEAN

Full Prof. D. Sc. Goran Turkalj

VICE-DEANS

Full Prof. D. Sc. Jasna Prpić-Oršić
research activities

Full Prof. D. Sc. Zlatan Car
business affairs

Full Prof. D. Sc. Anica Trp
academics

DEAN'S ASSISTANTS

Full Prof. D. Sc. Juraj Šimunić

Assist. Prof. D. Sc. Lado Kranjčević

SECRETARY GENERAL

Tomo Vergić, grad. in iur.

DEAN'S OFFICE

Sanja Prpić, grad. economist
head

6. ZAVODI

NA TEHNIČKOM FAKULTETU
SVEUČILIŠTA U RIJECI

DEPARTMENTS

AT THE FACULTY OF ENGINEERING
UNIVERSITY OF RIJEKA

6.1. ZAVOD ZA AUTOMATIKU I ELEKTRONIKU / DEPARTMENT OF AUTOMATION AND ELECTRONICS

Predstojnik Zavoda / Department Head:
Izv. prof. dr. sc. / Assoc. Prof. Viktor Sučić

URL: http://www.riteh.uniri.hr/ustroj/zae/

1. Saša Vlahinić
2. Vera Gradišnik
3. Viktor Sučić
4. Nicoletta Saulig
5. Željka Milanović
6. Miroslav Vrankić
7. Dragica Jurin
8. Jonatan Lerga
9. Dalibor Brnobić
10. Vesna Krajči

DJELATNICI

IZVANREDNI PROFESORI

Vera Gradišnik
poluvodičke komponente, fotodetektor, fotodioda, detekcija boja, tranzijentna analiza, numeričko modeliranje, defekti, senzor slike

Nino Stojković
analogna obrada signala, analogni filtri

Viktor Sučić
vremensko-frekvencijska i statistička analiza i obrada signala

Saša Vlahinić
mjerenja u elektrotehnici, mjerenja kvalitete električne energije, elektronička i virtualna instrumentacija

DOCENTI

Miroslav Vrankić
digitalna obrada signala i slike, teorija valića, filtarski slogovi

ASISTENTI

Dalibor Brnobić
ugradbeni sustavi i sustavi za rad u stvarnom vremenu, mjerenje kvalitete električne energije, algoritmi za vođenje aktivnih filtara i izmjenjivača

Vedran Grudenić
računalni vid, obrada slike, prepoznavanje uzoraka i objekata

Vesna Krajči
automatsko upravljanje, robotika

FACULTY AND STAFF

ASSOCIATE PROFESSORS

Vera Gradišnik
semiconductor devices, photodetector, photodiode, color detection, transient analysis, numerical modeling, defects, image sensor

Nino Stojković
analog signal processing, analog filters

Viktor Sučić
time-frequency and statistical signal analysis and processing

Saša Vlahinić
electrical measurements, power quality measurements, electronic and virtual instrumentation

ASSISTANT PROFESSORS

Miroslav Vrankić
digital signal and image processing, wavelets and filter banks

ASSISTANTS

Dalibor Brnobić
embedded systems, real-time systems, power quality instrumentation, control of active filters and power converters

Vedran Grudenić
computer vision, image processing, pattern and object detection

Vesna Krajči
automatic control, robotics

ZNANSTVENI NOVACI

Marino Franušić
mjerenja u elektrotehnici, mjerenja kvalitete električne energije, elektronička i virtualna instrumentacija

Jonatan Lerga
obrada signala, vremensko-frekvencijska obrada signala, obrada slike i videa

Željka Milanović
poluvodičke komponente, usmjerena perkolacija, nanostrukture, polimeri

Nicoletta Saulig
vremensko-frekvencijska obrada signala

JUNIOR RESEARCHERS

Marino Franušić
electrical measurements, power quality measurements, electronic and virtual instrumentation

Jonatan Lerga
signal processing, time-frequency signal processing, image and video processing

Željka Milanović
semiconductor devices, directed percolation, nanostructures, polymers

Nicoletta Saulig
time-frequency signal processing

ADMINISTRATIVNO OSOBLJE

Dragica Jurin
administrativna tajnica

ADMINISTRATIVE STAFF

Dragica Jurin
administrative secretary

VANJSKI SURADNICI

Red. prof. dr. sc. Dario Matika / MORH
Automatika

Pred. Ivan Grakalić / Veleučilište
Elektronika, Automatika

Asist. Branko Lukić / T-COM
Elektronika

ASSOCIATES

Prof. D. Sc. Dario Matika / MORH
Automation

Lect. Ivan Grakalić / Veleučilište
Electronics, Automation

Asist. Branko Lukić / T-COM
Electronics

NASTAVA

Nastava se izvodi iz područja automatike, robotike, elektronike, mjerenja u elektrotehnici, mjerne instrumentacije te obrade signala.

EDUCATION

Lectures in the field of automatic control, robotics, electronics, electrical measurements, instrumentation and signal processing.

KOLEGIJI NA SVEUČILIŠNOM PREDDIPLOMSKOM STUDIJU

Automatsko upravljanje
Digitalna logika
Električne mreže
Elektronika
Elektronika I
Elektronika II
Elementi automatizacije postrojenja
Mjerenja u elektrotehnici
Modeliranje i simuliranje sustava
Osnove regulacijske tehnike
Računalom podržana mjerenja
Signali i sustavi
Stručna praksa I

KOLEGIJI NA SVEUČILIŠNOM DIPLOMSKOM STUDIJU

Alarmni sustavi
Analogna obrada signala
Automatizacija postrojenja i procesa
Automatizirana instrumentacija
Digitalna obrada signala
Optoelektronika
Osnove robotike
Sustavi digitalnog upravljanja
Sustavi kontrole
Stručna praksa II

KOLEGIJI NA STRUČNOM STUDIJU

Digitalna logika ST
Elektroničke komponente i osnovni sklopovi
Linearne električne mreže
Mjerenja u elektrotehnici ST
Osnove automatske regulacije

UNDERGRADUATE COURSES

Automatic Control
Digital Logic
Electrical Circuits
Electronics
Electronics I
Electronics II
Elements of Plant Automation
Electrical Measurements
System Modelling and Simulation
Basic of Automatic Control
Computer Aided Measurement
Signals and Systems
Industrial Practice I

GRADUATE COURSES

Alarm systems
Analog Signal Processing
Automation of Plants and Processes
Automatic Instrumentation
Digital Signal Processing
Optoelectronics
Fundamentals of Robotics
Digital Control Systems
Control Systems
Industrial Practice II

VOCATIONAL COURSES

Digital Logic ST
Semiconductors Devices and Basic Electronic Circuits
Linear Electrical Circuits
Electrical Measurements ST
Fundamentals of Automatic Regulation

ZNANSTVENOISTRAŽIVAČKI RAD

Obrada signala, elektronika, mjerenje kvalitete električne energije

RESEARCH AND DEVELOPMENT ACTIVITIES

Signal processing, electronics, power quality measurements

PROJEKTI

Optimizacija i dizajn vremensko-frekvencijskih distribucija, 069-0362214-1575, MZOŠ, Viktor Sučić, 2006 – 2011, znanstvenoistraživački.

E-uključiva Hrvatska, RN18-033/08, 991113, Središnji državni ured za e-Hrvatsku, Miroslav Vrankić, 2009 - 2011, stručni.

Mjerenje i analiza kvalitete električne energije za Neograf d.o.o.,RN31-019/11, Neograf d.o.o., Saša Vlahinić, 2011, ekspertiza.

PROJECTS

Optimisation and Design of Time-Frequency Distributions, 069-0362214-1575, Ministry of Science, Education and Sports of the Republic of Croatia, Viktor Sučić, 2006 – 2011, research and scientific project.

E-inclusive Croatia, RN18-033/08, 991113, Central State Administrative Office for e-Croatia, Miroslav Vrankić, 2009 – 2011, professional project.

Measurement and analyses of electric power quality for Neograf d.o.o., RN31-019/11, Neograf d.o.o., Saša Vlahinić, 2011, expertise..

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Lerga, J., Sucic, V., Boashash, B.: An Efficient Algorithm for Instantaneous Frequency Estimation of Nonstationary Multicomponent Signals in Low SNR, EURASIP Journal on Advances in Signal Processing, ISSN 1687-6172, str. 1-16, 2011.

Lerga, J., Sucic, V., Vrankić, M.: Separable Image Denoising Based on the Relative Intersection of Confidence Intervals Rule, Informatica, ISSN 0868-4952, vol. 22, br. 3, str. 383-394, 2011.

Stojković, N., Kamenar, E., Šverko, M.: Optimized Second- And Fourth- Order LP and BP Filters, Automatica, ISSN 0005-1144, vol. 52, br. 2, 2011, str. 158-168.

Stojković, N., Tomljenović, F., Vlahinić, S.: Optimized Second- And Fourth- Order OTA-C LP Filters, Engineering Review, ISSN 1330-9587, vol. 30, br. 2, str. 27-36, 2010.

MEĐUNARODNI KONGRES / INTERNATIONAL CONGRESS

Brnobić, D., Vlahinić, S., Stojković, N.: The effect of IEC grouping algorithms on the measurement uncertainty of harmonic distortion indices, IEEE International Instrumentation and Measurement Technology Conference (I2MTC), ISBN: 978-1-4244-7934-4, str. 100-103, Hangzhou, Kina, 2011.

Grbac, E., Lerga, J., Sucic, V.: Video Denoising Using the ICI Method, International Conference on Innovative Technologies (IN-TECH), ISBN: 978-80-904502-6-4, str. 182-186, Bratislava, Slovačka, 2011.

Korač, D., Saulig, N., Sucic, V., Seršić, D.: Detecting the number of components of multicomponent nonstationary signals using the Rényi entropy of their time-frequency distributions, International Conference on Innovative Technologies (IN-TECH), ISBN: 978-80-904502-6-4, str. 304-307, Bratislava, Slovačka, 2011.

Lerga, J., Sucic, V., Boashash, B.: An Improved Method for Nonstationary Signals Components Extraction Based on the ICI Rule, 7th International Workshop on Systems, Signal Processing and their Applications (WOSSPA), ISBN 978-1-4577-0689-9, str. 307-310, Tipaza, Alžir, 2011.

Milanović, Ž., Marasović, I., Betti, T.: Simulation of directed percolation on ideal and real random diode networks, International Conference on Innovative Technologies (IN-TECH), ISBN: 978-80-904502-6-4, str. 377-380, Bratislava, Slovačka, 2011.

Ružić Baršić, A., Antulov, R., Lerga, J., Rubeša, G., Miletić, D.: Gray Matter Changes In Patients With Schizophrenia: A Voxel-Based Morphometry Study, 5. Congress of Croatian Society of Radiology with International Participations, str. 58-58, Opatija, Hrvatska, 2010.

Rubeša, G., Antulov, R., Ružić Baršić, A., Lerga, J., Miletić, D.: The relationship between gray matter changes in schizophrenia patients and the number of psychotic episodes, Abstracts of the 19th European Congress of Psychiatry, ISSN: 0924-9338, Beč, Austrija, 2011.

Saulig, N., Sucic V.: Nonstationary signals information content estimation based on the local Rényi entropy in the time-frequency domain, 11th International Conference on Telecommunications (ConTEL), ISBN 978-1-61284-169-4, str.465-472, Graz, Austrija, 2011.

Saulig, N., Sucic, V., Boashash, B.: An automatic time-frequency procedure for interference suppression by exploiting their geometrical features, 7th International Workshop on Systems, Signal Processing and their Applications (WOSSPA), ISBN 978-1-4577-0689-9, str. 311-314, Tipaza, Alžir, 2011.

Stojković, N., Tovilović, G., Vlahinić, S.: Optimized 2nd- and 4th- Order HP Filters, 34th International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), ISBN: 978-953-233-060-1, str.109-113, Opatija, Hrvatska, 2011.

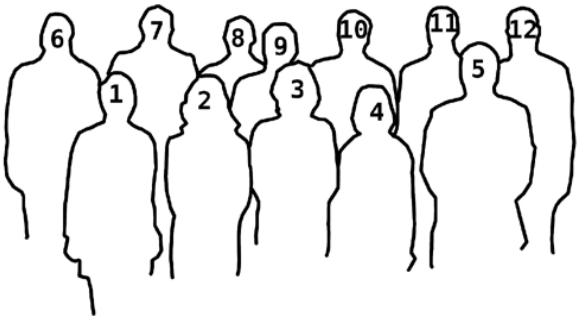
MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

RMIT University, Melbourne, Australia/Australija.
University of Queensland, Brisbane, Australia/Australija.
Politecnico di Torino, Torino, Italy/Italija.

6.2. ZAVOD ZA BRODOGRADNJU I INŽENJERSTVO MORSKE TEHNOLOGIJE / DEPARTMENT OF NAVAL ARCHITECTURE AND OCEAN ENGINEERING

Predstojnik Zavoda / Department Head:
Prof. dr. sc. Roko Dejhalla / Prof. D. Sc. Roko Dejhalla

URL: http://www.riteh.uniri.hr/ustroj/zbimt/



1. Dunja Matulja
2. Iva Kolacio
3. Jasna Prpić-Oršić
4. Nerina Čugelj
5. Roko Dejhalla
6. Damir Kolić
7. Anton Turk
8. Marko Hadjina
9. Nikša Fafandjel
10. Bruno Čalić
11. Tin Matulja
12. Albert Zamarin

DJELATNICI

REDOVITI PROFESORI

Bruno Čalić
plovnost i stabilitet broda, stabilitet u eksploataciji broda, osnivanje plovnih objekata I i II, objekti morske tehnologije, projektiranje malih plovnih objekata, brodske forme, hidrostatika broda, projektiranje malih plovnih objekata, metodologija projektiranja plovnih objekata, osnivanje plovnih objekata

Roko Dejhalla
otpor i propulzija plovnih objekata, brodski propulzori, gradnja i održavanje malih plovnih objekata

Nikša Fafandjel
gradnja i opremanje plovnih objekata, tehnologija i organizacija brodogradnje, osnivanje brodogradilišta i proizvodnih procesa, oprema broda, upravljanje projektima u brodogradnji, analiza tržišta, tehnološko prognoziranje i ugovaranje plovnih objekata

Jasna Prpić - Oršić
pomorstvenost, njihanje i opterećenje plovnih objekata na morskim valovima, modeliranje okoliša i okolišnih opterećenja, dinamika pomorskih objekata, vibracije broda

IZVANREDNI PROFESORI

Albert Zamarin
konstrukcija broda, čvrstoća broda, strukturna analiza broda, opterećenje plovnih objekata na morskim valovima, projektiranje strukture plovnih objekata, konstrukcija malih plovnih objekata

FACULTY AND STAFF

PROFESSORS

Bruno Čalić
seaworthiness and stability of the ship, ship hull forms, ship hydrostatics, ship stability in exploitation, ship design I & II, ocean mobile and fixed structures, small craft design, methodology of floating objects design, selected chapter on floating objects design

Roko Dejhalla
ship resistance and propulsion, ship propulsion devices, small craft building and maintenance

Nikša Fafandjel
ship production and outfitting, shipbuilding technology and organisation, shipyard and production process design, ship equipment, project management in shipbuilding, market analysis, technological forecasting and contracting.

Jasna Prpić - Oršić
seakeeping, motions and sea loads of ships and offshore structures, modeling of environment and environmental loads, marine structures dynamics, ship vibrations

ASSOCIATE PROFESSORS

Albert Zamarin
ship construction, ship strength, ship structural analysis, vessel structure design, sea loads of ships and offshore structures, small craft construction

DOCENTI

Marko Hadjina
gradnja i opremanje plovnih objekata, tehnologija i organizacija brodogradnje, osnivanje brodogradilišta i proizvodnih procesa, simulacijsko modeliranje brodograđevnih procesa, analiza tržišta, ugovaranje i tehnološko prognoziranje.

Tin Matulja
gradnja i opremanje plovnih objekata, tehnologija i organizacija brodogradnje, osnivanje brodogradilišta i proizvodnih procesa, oprema plovnih objekata.

VIŠI ASISTENTI

Damir Kolić
tehnologija i organizacija brodogradnje, vitka proizvodnja, tehnološki procesi brodogradnje, ugovaranje.

ASISTENTI

Anton Turk
plovnost i stabilitet broda, brodske forme, hidrostatika broda, stabilitet u eksploataciji broda, vibracije broda

ZNANSTVENI NOVACI

Iva Kolacio
dinamika broda, čvrstoća broda

Dunja Matulja
otpor i propulzija plovnih objekata, dinamika broda, brodski propulzori

ADMINISTRATIVNO OSOBLJE

Nerina Čugelj
administrativna tajnica

ASSISTANT PROFESSORS

Marko Hadjina
ship production and outfitting, shipbuilding technology and organisation, shipyard and production process design, shipyards' production processes simulation modelling, market analysis, contracting and technological forecasting.

Tin Matulja
ship production and outfitting, shipbuilding technology and organisation, shipyard and production process design, floating objects equipment and outfitting.

SENIOR ASSISTANTS

Damir Kolić
shipbuilding technology and organisation, lean manufacturing, Technological processes of shipbuilding, contracts.

ASSISTANTS

Anton Turk
seaworthiness and stability, ship hull forms, ship hydrostatics, ship stability in exploitation, ship vibrations

JUNIOR RESEARCHERS

Iva Kolacio
ship dynamics, ship strength

Dunja Matulja
ship resistance and propulsion, ship dynamics, ship propulsion devices

ADMINISTRATIVE STAFF

Nerina Čugelj
administrative secretary

VANJSKI SURADNICI

V. pred. Ante Pavelić / Brodogrаđevna industrija 3. MAJ
tehnološki procesi gradnje broda

V. pred. Rajko Rubeša / Brodogrаđevna industrija 3. MAJ
opremanje i remont broda, tehnološki procesi gradnje broda

Pred. Robert Grubiša / Brodogrаđevna industrija 3. MAJ
osnivanje plovnih objekata

Pred. Željko Monjac / Brodogrаđevna industrija 3. MAJ
tehnologija brodogradnje

Pred. Romano Pičuljan /Pičuljan Marine
gradnja i održavanje malih plovnih objekata

Pred. Davor Sablić / Brodogrаđevna industrija 3. MAJ
ugovaranje plovnih objekata

Pred. Gordana Semijalac / Brodarski institut
hidrodinamika broda

Pred. Milica Stanić / Brodogrаđevna industrija 3. MAJ
tehnologija brodogradnje

Pred. Valerija Tancabel Prpić / Brodogrаđevna industrija 3. MAJ
osnivanje plovnih objekata

Asist. D. Sc. Alan Klanac / As2con - Alveus
konstrukcija broda, strukturna analiza broda

ASSOCIATES

S. Lect. Ante Pavelić /Shipbuilding industry 3. MAJ
technological processes in shipbuilding

S. Lect. Rajko Rubeša /Shipbuilding industry 3. MAJ.
ship outfitting and repair, technological processes in shipbuilding

Lect. Robert Grubiša / Shipbuilding industry 3. MAJ
ship design

Lect. Željko Monjac / Shipbuilding industry 3. MAJ
shipbuilding technology

Lect. Romano Pičuljan / Pičuljan Marine
small craft building and maintenance

Lect. Davor Sablić / Shipbuilding industry 3. MAJ
ship contracting

Lect. Gordana Semijalac / Brodarski institute
marine hydrodynamics

Lect. Milica Stanić / Shipbuilding industry 3. MAJ
shipbuilding technology

Lect. Valerija Tancabel Prpić / Shipbuilding industry 3. MAJ
ship design

Assist. D. Sc. Alan Klanac / As2Con
ship construction, ship structural analysis

NASTAVA

Nastava iz područja:
Projektiranje plovnih objekata, tehnologija i organizacija brodogradnje, konstrukcija plovnih objekata, hidrodinamika plovnih objekata

KOLEGIJI NA PREDDIPLOMSKOM SVEUČILIŠNOM STUDIJU

Brodske forme
Gradnja i održavanje malih plovnih objekata SV
Hidrodinamika plovnih objekata I
Konstrukcija broda I
Konstrukcija broda II
Oprema broda
Osnove dinamike broda
Osnove gradnje broda
Plovnost i stabilitet broda
Stručna praksa I
Tehnologija brodogradnje
Tehnološki procesi brodogradnje
Uvod u plovne objekte

KOLEGIJI NA SVEUČILIŠNOM DIPLOMSKOM STUDIJU

Brodski propulzori
Brodogradilišta
Čvrstoća broda
Dinamika pomorskih konstrukcija
Hidrodinamika plovnih objekata II
Konstrukcija malih plovnih objekata
Metodologija gradnje plovnih objekata
Objekti morske tehnologije
Oprema malih plovnih objekata
Opremanje i remont broda
Organizacija i poslovanje brodogradilišta
Osnivanje plovnih objekata I
Osnivanje plovnih objekata II
Pomorstvenost plovnih objekata
Projektiranje malih plovnih objekata

EDUCATION

Lectures in the field of:
marine vessel design, technology and organization of shipbuilding, marine vessel construction, marine hydrodynamics

UNDERGRADUATE COURSES

Ship Hull Forms
Small Craft Building and Maintenance SV
Marine Hydrodynamics I
Ship Construction I
Ship Construction II
Ship Equipment
Basic Ship Dynamics
Basics of Ship Production
Seaworthiness and Stability of the Ship
Industrial practice I
Shipbuilding Technology
Technological Processes of Shipbuilding
Introduction to Floating Objects

GRADUATE COURSES

Ship Propulsion Devices
Shipyards
Ship Strength
Dynamics of Off shore Structures
Marine Hydrodynamics II
Small Craft Construction
Methodology of Shipbuilding
Ocean Mobile & Fixed Structures
Small Crafts Outfitting
Ship Outfitting and Repair
Shipyards Organisation and Management
Floating Objects Design I
Floating Objects Design II
Seakeeping
Small Craft Design

Stabilitet broda u eksploataciji
Stručna praksa II
Strukturna analiza broda
Tehnološki proces gradnje broda
Ugovaranje plovnih objekata
Upravljanje projektima u brodogradnji
Vibracije broda

Ship Stability in Exploitation
Industrial practice II
Ship Structural Analysis
Technological Process of Ship Production
Ship Negotiation Process
Project Management in Shipbuilding
Ship Vibrations

KOLEGIJI NA STRUČNOM STUDIJU

Brodske forme ST
Gradnja i održavanje malih plovnih objekata
Hidrostatika broda
Konstrukcija broda
Oprema broda ST
Osnivanje plovnih objekata
Plovni objekti
Stručna praksa I
Stručna praksa II
Strukturni elementi broda
Tehnologija brodogradnje I
Tehnologija brodogradnje II
Tehnološki procesi gradnje i remonta broda

VOCATIONAL STUDY COURSES

Ship Hull Forms ST
Small Craft Building and Maintenance
Ship Hydrostatic
Ship Construction
Ship Equipment ST
Floating Objects Design
Floating Objects
Professional practice I
Professional practice II
Ship Structural Elements
Shipbuilding Technology I
Shipbuilding Technology II
Technological Processes of Shipbuilding and Repair

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

Integralna tehnologija gradnje broda
Izabrana poglavja iz metodologije gradnje plovnih objekata
Ugovaranje plovnih objekata
Metodologija projektiranja plovnih objekata
Izabrana poglavlja iz osnivanja plovnih objekata
Optimizacija projekta broda
Pomorstvenost i upravljivost plovnih objekata
Izabrana poglavlja iz dinamike plovnih objekata
Vjerojatnosno predviđanje morskih valova
Hidrodinamika plovnih objekata
Izabrana poglavlja iz otpora plovnih objekata
Izabrana poglavlja iz propulzije plovnih objekata
Projektiranje strukture plovnih objekata
Valno opterećenje plovnih objekata

POSTGRADUATE COURSES

Integrated Ship Production Technology
Selected Topics on Floating Objects Production Methodology
Ship Negotiation Process
Methodology of Floating Objects Design
Selected Chapter on Floating Objects Design
Ship Design Optimisation
Seakeeping and Manoeuvrability
Selected Topics on Marine Dynamics
Probabilistic Prediction of Ocean Waves
Marine Hydrodynamics
Advanced Chapters of Ship Resistance
Advanced Chapters of Ship Propulsion
Floating Objects Structural Design
Wave Load on Floating Object

ZNANSTVENOISTRAŽIVAČKI RAD

Tehnologija gradnje i održavanje plovnih objekata.

Hidrodinamičko opterećenje i odziv pomorskih objekata na morskim valovima.

Sustavi i tehnologije u zaštiti podmorja, priobalja i pomorskoj sigurnosti.

Otpor i propulzija plovnih objekata.

Optimizacija strukture trupa broda, projektiranje za proizvodnju.

RESEARCH AND DEVELOPMENT ACTIVITIES

Shipbuilding technology and maintenance of floating objects.

Hydrodynamic loads and response of marine objects.

Systems and technologies in sub sea, coastal zone protection and maritime security.

Ship resistance and propulsion.

Ship hull structure optimization, design for production.

PROJEKTI

Numeričko modeliranje hidrodinamičkog opterećenja i odziva pomorskih objekata, 069-0691736-1667, MZOŠ, Jasna Prpić-Oršić, 2007 - 2011, znanstvenoistraživački

Izrada 3D modela tradicijske brodice "Rapska ladja", RN 34-014/11, Ogranak Matice hrvatske Rab, Nikša Fafandjel, Marko Hadjina, Tin Matulja, Tehnički fakultet Rijeka, 2011, stručni projekt.

PROJECTS

Numerical modeling of hydrodynamic loads and response of marine objects, 069-0691736-1667, Ministry of Science, Education and Sports of the Republic of Croatia, Jasna Prpić-Oršić, 2007.– 2010., research and scientific project.

3D modeling of traditional boat "Rapska ladja", RN 34-014/11, Ogranak Matice hrvatske Rab, Nikša Fafandjel, Marko Hadjina, Tin Matulja, Faculty of engineering Rijeka, 2011, professional project.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Kolić, D., Fafandjel, N., Bićanić, D.: Proposal for the determination of the technological parameters for design rationalization of a shipbuilding production program, Engineering Review, Faculty of Engineering, University of Rijeka, ISSN 1330-9587,vol. 30, br. 2, str. 59-69, Rijeka, 2010.

Matulja, D., Sportelli, M., Guedes Soares, C., Prpić-Oršić, J.: Estimation of Added Resistance of a Ship in Regular Waves, časopis Brodogradnja, ISSN 0007-215X, god. 62, br. 3, str. 259-264, Zagreb, 2011.

Rubeša, R, Fafandjel, N., Kolić, D.: Procedure for estimating the effectiveness of ship modular outfitting, Engineering Review, Faculty of Engineering, University of Rijeka, ISSN 1330-9587, vol. 31, br. 1, str. 55-62, Rijeka, 2011.

R. de Silva, S., Turk, A., Guedes Soares, C., Prpić-Oršić, J.: On the parametric rolling of container vessels, časopis Brodogradnja, ISSN 0007-215X, god. 61, br. 4, str. 347-359, Zagreb, 2010.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Bajič, D., Prpić-Oršić, J., Turk, A.: Bow flare impact loads on containerships, Zbornik XIX. Simpozij teorija i praksa brodogradnje, in memoriam prof. Leopold Sorta, ISBN 978-953-290-022-4, str. 344-351, Lumbarda, Italija, 2010.

Hadjina, M., Fafandjel, N., Šimundić, S., Kolić, D.: Metoda simulacije za projektiranje brodograđevnog proizvodnog procesa, Zbornik XIX. Simpozij teorija i praksa brodogradnje, in memoriam prof. Leopold Sorta, ISBN 978-953-290-022-4, str. 208-217, Lumbarda, Italija, 2010.

Kolić, D., Matulja, T., Fafandjel, N.: Matching product mix shipyard effectiveness through the design for production concept, 14th International Congress of the International Maritime Association of the Mediterranean - IMAM, Proceedings ISBN 978-415-62081-9, str. 567-573, Genoa, Italija, 2011.

Kolić, D., Storch, R.L., Fafandjel, N.: Lean manufacturing in shipbuilding with Monte Carlo simulation, International Conference on Computer Applications in Shipbuilding - ICCAS 2011, Royal Institute of Naval Architects, ISBN 978-1-905040-87-2, str. 159-168, Trieste, Italija, 2011.

Matulja, D., Dejhalla, R.; Numerical optimization of a hull form with bulbous bow, Proceedings of the 14th International Congress of the International Maritime Association of the Mediterranean - IMAM, ISBN 978-415-62081-9, str. 13-18, Genoa, Italija, 2011.

Matulja, D., Sportelli, M., Prpić-Oršić, J., Guedes Soares, C.; Methods for estimation of ships added resistance in regular waves, Zbornik XIX Simpozij teorija i praksa brodogradnje, In memoriam prof. Leopold Sorta, ISBN 978-953-290-022-4, str. 344-351, Lumbarda, Italija, 2010.

Matulja, T., Fafandjel, N., Markovina, R., Zamarin, A., Kolić, D.: Projektiranje optimalnog rasporeda proizvodnih površina brodogradilišta. Zbornik XIX. Simpozij teorija i praksa brodogradnje, in memoriam prof. Leopold Sorta, ISBN 978-953-290-022-4, str. 218-230, Lumbarda, Italija, 2010.

Turk, A., Prpić-Oršić, J., R. de Silva, S., Guedes Soares, C., Dynamic instabilities in following seas caused by parametric rolling of C11 class containership, 14th International Congress of the International Maritime Association of the Mediterranean - IMAM, Proceedings ISBN 978-415-62081-9, str. 125-135, Genoa, Italija, 2011.

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Helsinki University of Technology, Espoo-Helsinki, Finland/Finska.

Norwegian University of Science and Technology, Center of Ships and Ocean Structures, Norwegian Center of Excelence, Trondheim, Norway/Norveška.

Technical University of Lisbon, Instituto Superior Tecnico, Lisabon, Portugal.

University of Technology, Krakow/Krakov, Poland/Poljska.

University of Trieste, Department of Naval Architecture and Ocean Engineering, Trieste/Trst, Italy/Italija.

University of Washington, Department of Industrial and Systems Engineering, Seattle, USA/SAD

6.3. ZAVOD ZA ELEKTROENERGETIKU / DEPARTMENT OF ELECTRICAL POWER ENGINEERING

Predstojnik Zavoda / Department Head:
Doc. dr. sc. / Assist. Prof. D. Sc. Srđan Skok

URL: http://www.riteh.uniri.hr/ustroj/zee/

1. Vibor Belašić
2. Livio Šušnjić
3. Juraj Šimunić
4. Srđan Skok
5. Marijana Živić Đurović
6. Goran Klobučar
7. Aleksandra Kalinić
8. Dragica Jurin
9. Andrea Andrijašević
10. Vedran Kirinčić
11. Saša Sladić
12. Dubravko Franković

DJELATNICI

REDOVITI PROFESORI

Juraj Šimunić
osnove elektrotehnike, elektroenergetska postrojenja, vođenje elektroenergetskog sustava, procesna informatika, istosmjerni razvodi EEP-a

IZVANREDNI PROFESORI

Livio Šušnjić
električni strojevi, elektromagnetski proračuni, analiza konačnim elementima

DOCENTI

Srđan Skok
zaštita elektroenergetskog sustava, električna postrojenja, stabilnost elektroenergetskog sustava, nadzor i vođenje elektroenergetskog sustava u realnom vremenu, sustavi besprekidnih napajanja, obnovljivi izvori energije, brodska elektrotehnika

Neven Bulić
elektromotorni pogoni, upravljanje elektromotornim pogonima, sustavi uzbude sinkronih generatora, digitalni sustavi upravljanja električnim strojevima, motori s magnetnim ležajevima

Dubravko Franković
elektroenergetika, električna postrojenja, projektiranje, uzemljenje

Saša Sladić
energetska elektronika, elektromotorni pogoni, mehatronika, nove tehnologije i obnovljivi izvori energije

FACULTY AND STAFF

PROFESSORS

Juraj Šimunić
fundamentals of electrical engineering, electrical power plant, electric power management systems, process informatics of electrical power system, DC distribution

ASSOCIATE PROFESSORS

Livio Šušnjić
electrical machines, electromagnetic calculation, finite element analysis

ASSISTANT PROFESSORS

Srđan Skok
power system protection, electric facilities, power system stability, power system real time monitoring and control, uninterruptible power supplies, renewable energy sources, ship electrical engineering

Neven Bulić
Electrical drives, Control of electrical drives, Synchronous generator excitation systems, digital control systems for electrical machines, bearingless motors

Dubravko Franković
power engineering, electric installations, electrical design, grounding

Saša Sladić
power electronic, electric drives, mechatronics, new technologies and renewable energy sources

VIŠI PREDAVAČI

Branka Dobraš
nadzor i vođenje elektroenergetskog sustava, modeliranje procesnih informacija, objektno orijentirano modeliranje

Marijana Živić Đurović
kvaliteta električne energije, pouzdanost, mikromreže

ASISTENTI

Vedran Kirinčić
zaštita elektroenergetskog sustava, električna postrojenja, stabilnost elektroenergetskog sustava

Goran Klobučar
elektrane, osnove elektrotehnike

ZNANSTVENI NOVACI

Vibor Belašić
sustav automatizacije elektroenergetskih postrojenja, procesne informacije, standardizacija, modeliranje informacijskih sustava, inteligentni sustavi

Aleksandra Kalinić
tržište električnom energijom, trgovanje energijom, elektroenergetski sustavi

Andrea Andrijašević
digitalna obrada signala govora, akustika prostora, elektroakustički pretvarači

ADMINISTRATIVNO OSOBLJE

Dragica Jurin
administrativna tajnica

SENIOR LECTURER

Branka Dobraš
electric power system control, process information modelling, object oriented modelling

Marijana Živić Đurović
quality of electricity supply, reliability, microgrids

ASSISTANTS

Vedran Kirinčić
power system protection, electric facilities, power system stability

Goran Klobučar
Electric Power Systems, Electrical engineering fundamentals

JUNIOR RESEARCHERS

Vibor Belašić
power system automation, process information, SCADA, standardization, information system modeling, intelligent systems

Aleksandra Kalinić
electricity market, energy trading, electric power systems

Andrea Andrijašević
digital processing of speech signals, room acoustics, electroacoustic transducers

ADMINISTRATIVE STAFF

Dragica Jurin
administrative secretary

VANJSKI SURADNICI

Izv. prof. dr. sc. Antun Kraš / Pomorski fakultet, Sveučilište u Rijeci
elektroenergetika

Izv. prof. dr. sc. Alfredo Višković / HEP
elektroenergetika

Doc. dr. sc. Vitomir Komen / HEP ODS
elektroenergetika

V. pred. mr. sc. Josip Karneluti / 5E
elektroenergetika

Mr. sc. Vladimir Valentić / HEP OPS
elektroenergetika

Marin Antunović
elektroenergetika

Ivan Mužić / Hrvatski registar brodova
elektroenergetika

Neven Pavlović / T-HT Grupa
elektroenergetika

Zoran Zbunjak / HEP OPS
elektroenergetika

ASSOCIATES

Assoc. Prof. D. Sc. Antun Kraš / Faculty of maritime studies, University of Rijeka
electric power systems

Assoc. Prof. D. Sc. Alfredo Višković / HEP
electric power systems

Assist. Prof. D. Sc. Vitomir Komen / HEP DSO
electric power systems

S. Lect. M. Sc. Josip Karneluti / 5E
electric power systems

M. Sc. Vladimir Valentić / HEP TSO
electric power systems

Marin Antunović
electric power systems

Ivan Mužić / Croatian ship register
electric power systems

Neven Pavlović / T-HT Group
electric power systems

Zoran Zbunjak / HEP TSO
electric power systems

NASTAVA

Nastava se izvodi iz područja osnova elektrotehnike, elektroenergetike i elektrostrojarstva.

KOLEGIJI NA SVEUČILIŠNOM PREDDIPLOMSKOM STUDIJU

Električna postrojenja
Električni strojevi
Elektroenergetske mreže
Elektromotorni pogoni
Elektrotehnika R
Energetska elektronika
Modeliranje procesnih informacijskih sustava
Osnove elektrotehnike I
Osnove elektrotehnike II

KOLEGIJI NA SVEUČILIŠNOM DIPLOMSKOM STUDIJU

Brodska elektrotehnika
Elektrane
Elektroenergetski sustavi
Modeliranje procesne informatike električnih postrojenja
Numerička analiza u elektromagnetizmu
Prijenos i distribucija električne energije
Projektiranje električnih postrojenja
Teorijska elektrotehnika
Upravljanje elektromotornim pogonima
Vođenje elektroenergetskog sustava
Zaštita i automatika električnih postrojenja

KOLEGIJI NA STRUČNOM STUDIJU

Električne energetske mreže
Elektroenergetska postrojenja
Elementi elektroenergetskih postrojenja
Izgradnja i održavanje elektroenergetskih postrojenja
Osnove električnih strojeva
Osnove elektrotehnike

EDUCATION

Lectures in the field of electrical engineering fundamentals, power engineering and electrical machines and drives

UNDERGRADUATE COURSES

Electric Power Substations
Electrical Machines
Electric Power Networks
Electrical Drives
Electrical Engineering R
Power Electronics
Modeling of process information systems
Fundamentals of Electrical Engineering I
Fundamentals of Electrical Engineering II

GRADUATE COURSES

Ships Electrical Engineering
Power Plants
Electric Power Systems
Modeling of Process Informatics in Power System
Numerical Analysis in Electromagnetics
Electrical Power Transfer and Distribution
Electric Power Substation Design
Theoretical Electrical Engineering
Control of Electrical Drives
Power System Control
Power System Protection and Automation

VOCATIONAL COURSES

Electrical Power Networks
Electrical Power System
Electric Power Station Equipment
Electric Power Plant Building and Maintenance
Fundamentals of Electrical Machines
Fundamentals of Electrical Engineering

Osnove elektrotehnike ST I
Osnove elektrotehnike ST II
Osnove energetske elektronike
Osnove projektiranja elektroenergetskih postrojenja
Stručna praksa I
Stručna praksa II
Zaštita električnih postrojenja

Fundamentals of Electrical Engineering ST I
Fundamentals of Electrical Engineering ST II
Fundamentals of Power Electronics
Fundamentals of Electric Power Substation Design
Professional practice I
Professional practice II
Protective System in Electrical Power System

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

Automatizacija postrojenja i sustava
Modeli stohastičkih procesa informacija

POSTGRADUATE COURSES

Plant and System Automatization
Models of Stochastic Information Processes

PROJEKTI

Otvoreno tržište i nove tehnologije u procesnom informacijskom sustavu EES-a, 069-0361557-1615, MZOŠ, Juraj Šimunić, 2007 - 2012, znanstvenoistraživački.

Nadzor, zaštita i vođenje širokog područja elektroenergetskog sustava u okruženju dereguliranog i liberaliziranog tržišta električne energije, 0114-24/110-2006, NZZ, HEP, Srđan Skok, 2006 - 2009, znanstvenoistraživački.

Dinamička analiza pogona dijela elektroenergetskog sustava Prijenosnog područja Rijeka zasnovana na sinkroniziranim mjerenjima, HEP, Srđan Skok, 2009 - 2010, elaborat.

PROJECTS

Open market and new technologies in EPS process information system, 069-0361557-1615, Ministry of Science, Education and Sports of the Republic of Croatia, Juraj Šimunić, 2007.- 2012., research and scientific project.

Wide Area Monitoring, Protection and Control of Power System in Deregulated and Liberalized Energy Market, 0114-24/110-2006, The National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia; HEP Group, Srđan Skok, 2006.- 2009., research and scientific project.

Dynamic analysis of the operation of the part of the electric power system in the transmission area Rijeka based on the synchronized measurements, HEP Group, Srđan Skok, 2009.- 2010., study.

Inteligentni sustavi u prijenosnoj elektroenergetskoj mreži, SIPS, NZZ, HEP, Srđan Skok, 2010. - 2013., znanstvenoistraživački.

Izrada matematičkog modela, algoritama i proračuna vezanih uz dizajniranje i konačnu izradu arhitekture WAM - Wide area monitoring sustava, Končar-KET, Srđan Skok, 2010 - 2011, elaborat.

Ispitivanje selektivnosti sustava istosmjernih podrazvoda na HE Čakovec i HE Dubrava, HEP, Srđan Skok, 2011, elaborat.

Intelligent systems in the transmission electric power network, SIPS, The National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia, HEP Group, Srđan Skok, 2010.- 2013, research and scientific project.

Development of mathematical model, algorithms and calculations related to design and final architecture of WAM - Wide area monitoring system, Končar-KET, Srđan Skok, 2010-2011, study.

Testing of the DC system selectivity in HPP Čakovec and HPP Dubrava, HEP, Srđan Skok, 2011, study.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Bulić, N.; Sumina D. Mišković, M.: A Comparison of Advanced Control Structures for Synchronous Generator Excitation Control, International Review of Electrical Engineering, ISSN 1827-6660, vol. 5, br. 2, str. 473-480, 2010.

Bulić, N., Sumina D., Radulović, M.: On-Line Synchronous Generator Stability Limit Determination, International Review of Electrical Engineering, ISSN 1827-6660, vol. 5, br. 1, str. 90-98, 2010.

Bulić, N., Sumina, D., Švigir, N.: Determining the Limit of Synchronous Generator Dynamic Stability Depending on Electromechanical Oscillation Damping, Transactions of FAMENA, ISSN 1333-1124, vol. 34, br. 1, str. 39-50, 2010.

Mirošević, M., Sumina, D., Bulić, N.: Impact of induction motor starting on ship power network, International Review of Electrical Engineering, ISSN 1827-6660, Vol. 6, br. 1, str. 186-197, 2011.

Mirošević, M., Sumina, D., Bulić, N.: Influence of Time Gap Between Impact Loads on torsional Dynamics of Generator Units, International Review of Electrical Engineering, ISSN 1827-6660, vol. 5, br.3, str. 1012-1021, 2010.

Radulović, D., Skok, S., Kirinčić V.: Energy Efficiency Public Lighting Management in the Cities, Energy, Elsevier Ltd., ISSN 0360-5442, vol. 36, br. 4, str. 1908-1915, 2011.

Sumina, D., Bulić, N., Erceg, I.: Three-dimensional power system stabilizer, Electric Power Systems Research, ISSN 0378-7796, vol. 80, br. 7, str. 886-892, 2010.

Sumina D., Bulić, N., Mišković, M.: Parameter tuning of power system stabilizer using eigenvalue sensitivity, Electric Power Systems Research, ISSN 0378-7796, vol. 81, br. 12, str. 2171-2177, 2011.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Radulović, D., Skok, S., Kirinčić V.: Cogeneration – investment dilemma, Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), Dubrovnik, Hrvatska, 2011.

Skok, S., Kirinčić, V., Ivanković I.: Automated control for power transmission system in urban area, GCC Conference and Exhibition (GCC), ISBN 978-1-61284-118-2, str. 649-652, Dubai, UAE, 2011.

KNJIGE / BOOKS

Sumina, D., Bulić, N., Mirošević M., Mišković, M.: Synchronous Generator Advanced Control Strategies Simulation, Source: MATLAB - A Ubiquitous Tool for the Practical Engineer, ISBN 978-953-307-907-3, Edited by: Clara M. Ionescu, Publisher: InTech, October 2011

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

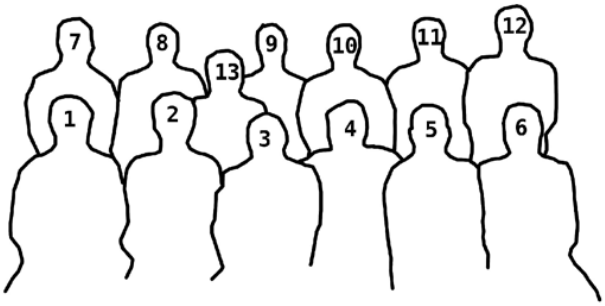
ABB, Baden, Švicarska
Cedrat Group, Grenoble, Francuska
Imperial Colledge, London, Velika Britanija,
KEMA, Amsterdam, Nizozemska
North Carolina State University, Raleigh, SAD
Quanta Technology, Raleigh, SAD
The Manchester University, Manchester, Velika Britanija
University of Sannio, Benevento, Italija
Johannes Kepler Universität Linz, Institut für Elektrische Antriebe und Leistungselektronik, Linz, Austrija
Linz Center of Mechatronics GmbH, Linz, Austrija
Austrian Center of Competence in Mechatronics GmbH, Linz, Austrija

6.4. ZAVOD ZA INDUSTRIJSKO INŽENJERSTVO I MANAGEMENT / DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT

Predstojnik Zavoda / Head of Department:
Izv. prof. dr. sc. Milan Ikonić / Assoc. Prof. D. Sc. Milan Ikonić

URL: http://www.riteh.uniri.hr/ustroj/ziim/

1. Duško Pavletić
2. Goran Cukor
3. Tonči Mikac
4. Milan Ikonić
5. Mladen Perinić
6. Zlatan Car
7. Sandro Doboviček
8. Leon Šikulec
9. Hrvoje Radelja
10. Zoran Jurković
11. Samir Žic
12. Marko Kršulja
13. Vesna Franelić



DJELATNICI

REDOVITI PROFESORI

Zlatan Car
umjetne inteligencije, inteligentni sustavi, robotika, CNC/NC obradni strojevi i robotika, kostrukcija i optimizacija alata i naprava, simulacija i optimizacija rada sustava i strojeva

Goran Cukor
napredni obradni sustavi i tehnologije, modeliranje i optimiranje obradnih procesa

Branko Katalinić
automatizacija, robotika

Tonči Mikac
organizacija i ekonomika poslovnih sustava, proizvodni menadžment, projektiranje proizvodnih sustava, vođenje proizvodnje računalom, organizacija proizvodnje, planiranje i upravljanje proizvodnjom

IZVANREDNI PROFESORI

Branimir Barišić
tehnologija oblikovanja deformiranjem, modeliranje procesa obrade, deformabilnost i suvremeno oblikovanje deformiranjem, MKE u tehnologiji oblikovanja deformiranjem, neuronske mreže u tehnologiji oblikovanja deformiranjem, nehomogeno tečenje materijala, mjerna tehnika i mjerna kontrola, mjerna i regulacijska tehnika, računalom podržana mjerenja, računalna simulacija proizvodnih procesa

Milan Ikonić
organizacija i ekonomika poslovnih sustava, organizacija i ekonomika projektiranje proizvodnih sustava, management i organizacijski razvoj, projektni i proizvodni management, razvojni management

FACULTY AND STAFF

PROFESSORS

Zlatan Car
Artificial intelligence, intelligent systems, CNC/NC machines & robotics, design of tools & fixtures, modeling, simulation and optimization of systems and machines

Goran Cukor
Advanced manufacturing systems and technology, modelling and optimisation of machining processes

Branko Katalinić
Automation, robotics

Tonči Mikac
Organization and economics of business entity, operational management, designing of production systems planning, computer aided manufacturing, organization of manufacturing, planning and managing of manufacturing

ASSOCIATE PROFESSORS

Branimir Barišić
Forming technology, modeling of machining processes, formability and modern forming technology, FEM in the forming technology, neural network in forming technology, no homogenous yielding of materials, measuring technique and measuring inspection, measuring and regulation technique, computer aided measuring, computational simulation of production processes

Milan Ikonić
Organization and economy of business entity, designing of production systems, project management and operational management, management and organizational development

Duško Pavletić
upravljanje kvalitetom, osiguranje i nadzor kvalitete, sustavi kvalitete, zavarivačko inženjerstvo

Mladen Perinić
projektiranje tehnoloških procesa, CAM, CAP, CAD/NC-CIM, modeliranje, simulacija i optimizacija tehnoloških procesa,

DOCENTI

Zoran Jurković
alatni strojevi i oprema; CAD/CAM/ CAE; dizajn alata i naprava; modeliranje, simulacija i optimizacija procesa obrade; planiranje eksperimenta.

VIŠI ASISTENT

Sven Maričić
simulacija i optimizacija tehnoloških procesa

ASISTENTI

Sandro Doboviček
projektni management, proizvodni management, projektiranje proizvodnih sustava, organizacija proizvodnje, planiranje i upravljanje proizvodnjom

Hrvoje Radelja
osnove tehnoloških procesa, CAD/CAPP/ CAM, umjetne inteligencije, inteligentni sustavi, robotika, CNC/NC obradni strojevi i robotika, konstrukcija i optimizacija alata i naprava

Samir Žic
organizacija i ekonomika poslovnih sustava, planiranje i upravljanje proizvodnjom

Duško Pavletić
Quality management, quality assurance and control, quality systems, welding engineering

Mladen Perinić
Process planning, CAM, CAP, CAD/NC-CIM, modeling, simulation and processes plans optimization,

ASSISTANT PROFESSORS

Zoran Jurković
Machine tools & equipment; CAD/CAM/ CAE; design of tools and fi xtures; modeling, simulation and optimization of machining processes; design of experiments.

SENIOR ASSSISTANT

Sven Maričić
Simulation and process planning optimization

ASSISTANTS

Sandro Doboviček
Designing of production systems, project management, operational management, organization of manufacturing, planning and managing of manufacturing

Hrvoje Radelja
Basics of technological processes, CAD/ CAPP/CAM, artificial intelligence, intelligent systems, CNC/NC machines & robotics, design of tools & fixtures, modeling

Samir Žic
Organization and economics of business entity, organization and economics, planning and managing of manufacturing

ZNANSTVENI NOVACI

Marko Kršulja
mjerna tehnika, tehnologija oblikovanja, tehnologija obrade II, mjerna i regulacijska tehnika, računalna simulacija proizvodnih procesa.

Tomislav Meštrović
napredni obradni sustavi i tehnologije, modeliranje i optimiranje obradnih procesa

Leon Šikulec
umjetne inteligencije, inteligentni sustavi, robotika, CNC/NC obradni strojevi,

ADMINISTRATIVNO OSOBLJE

Vesna Franelić
administrativna tajnica

VANJSKI SURADNICI

Red. prof. dr. sc. Dražen Bajić / FESB, Split
obrada skidanjem čestica

Red. prof. dr. sc. Bruno Grbac / EF, Rijeka
marketing

Viši pred. dr. sc. Ksenija Juretić / EF, Rijeka
poslovno komuniciranje

Akademik Elso Kuljanić / HAZU
obrada skidanjem čestica

stručni suradnik Toni Vidulin / 3. MAJ d.d., Rijeka
tehnologija zavarivanja

Dražen Kostelac / JGL d.d., Rijeka
projektni management

JUNIOR RESEARCHERS

Marko Kršulja
Measurement techniques, technology of forming, technology of processing II, measuring technique and measuring inspection, computational simulation of production processes.

Tomislav Meštrović
Advanced manufacturing systems and technologies, modeling and optimization of machining processes

Leon Šikulec
Artificial intelligence, intelligent systems, CNC/NC machines,

ADMINISTRATIVE STAFF

Vesna Franelić
Administrative secretary

ASSOCIATES

Prof. D. Sc. Dražen Bajić / FESB, Split
Machining Processes

Prof. D. Sc. Bruno Grbac / EF, Rijeka
Marketing

S. Lect. D. Sc. Ksenija Juretić / EF, Rijeka
Business Communication

Akademik Elso Kuljanić / HAZU
Machining Processes

Toni Vidulin / 3. MAJ d.d., Rijeka
Welding Technology

Dražen Kostelac / JGL d.d., Rijeka
Project Management

NASTAVA

Nastava iz područja: mjerne tehnike i sustava kvalitete, organizacije i operacijskog menadžment, proizvodne tehnologije, proizvodne opreme i robotike, projektiranja procesa

KOLEGIJI NA SVEUČILIŠNOM PREDDIPLOMSKOM STUDIJU

Automatizacija
Mjerna tehnika
Organizacija i ekonomika poslovnih sustava
Osiguranje kvalitete
Poslovno komuniciranje
Proizvodne tehnologije
Proizvodni strojevi, alati i naprave
Tehnološki procesi
Zavarivanje I

KOLEGIJI NA SVEUČILIŠNOM DIPLOMSKOM STUDIJU

CAD/CAPP/CAM
CNC/NC obradni strojevi
Fleksibilni i inteligentni sustavi
Industrijska robotika
Ljevarstvo
Management i organizacijski razvoj
Marketing
Mjerna i regulacijska tehnika
Napredni proizvodni postupci
Obrada odvajanjem čestica
Organizacija proizvodnje
Planiranje i upravljanje proizvodnjom
Poslovno računovodstvo – zamrznuto
Primjena umjetne inteligencije
Proizvodni management
Projektiranje proizvodnih sustava
Projektiranje tehnoloških procesa
Projektni management
Računalna simulacija proizvodnih procesa

EDUCATION

Lectures in the field of: measuring technique and quality systems, organization and operational management, manufacturing technologies, manufacturing equipments and robotics, process planning

UNDERGRADUATE COURSES

Automation
Measuring Technique
Organization and Economics of Enterprises
Quality Assurance
Business Communication
Manufacturing Technologies
Production Machines, Jigs, Fixtures and Tools
Technological Processes
Welding Engineering I

GRADUATE COURSES

CAD/CAPP/CAM
CNC/NC Machine Tools
Flexible and Intelligent Systems
Industrial Robotics
Foundry
Management and Organizational Development
Marketing
Measuring and Regulation Technique
Advanced Manufacturing Processes
Machining Processes
Production Organization
Production Planning and Management
Accounting – zamrznuto
AI Implementation
Production Management
Designing of Production Systems
Process Planning
Project Management
Computer Simulation of Production Processes
Computer Integrated Manufacturing

Računalom integrirana proizvodnja
Tehnička logistika
Tehnologija oblikovanja
Upravljanje kvalitetom
Zavarivanje II

KOLEGIJI NA STRUČNOM STUDIJU

Alati i naprave
Automatizacija ST
Mjerna tehnika ST
Obradni strojevi
Organizacija i ekonomika
Organizacija i upravljanje proizvodnjom
Osiguranje kvalitete ST
Proizvodni sustavi
Tehnologija obrade I
Tehnologija obrade II
Tehnološki procesi ST
Zavarivanje

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

Deformabilnost i suvremeno oblikovanje deformiranjem
Primjenjena teorija plastičnosti u procesima oblikovanja
Modeliranje procesa obrade
Planiranje i vođenje proizvodnje
Razvojni i proizvodni management
Strateško planiranje
IP iz fleksibilnih proizvodnih sustava
IP iz nekonvencionalnih postupaka obrade
IP iz konvencionalne obrade odvajanjem čestica
Metode simulacije u proizvodnji
Inteligentni proizvodni sustavi
Upravljanje kvalitetom
Inženjerstvo kvalitete
CAM, CAP, CAD/NC-CIM
Optimizacija tehnoloških procesa

Technical Logistics
Forming Technology
Quality Engineering
Welding Engineering II

VOCATIONAL COURSES

Tools, Jigs and Fixtures
Automation ST
Measuring Technique ST
Machine Tools
Organization and Economics
Organization and Production Management
Quality Assurance ST
Production Systems
Manufacturing Technology I
Manufacturing Technology II
Technological Processes ST
Welding Engineering

POSTGRADUATE COURSES

Formability and Modern Forming Technology
Application of Plasticity Theory in Forming Processes
Modeling of Machining Processes
Planning and Processing of Manufacture
Production and Development Management
Strategic Planning
Selected Chapters from flexible production system
Selected Chapters on Nonconventional Machining
Processes
Selected Chapters on Conventional Machining Processes
Simulation Methods in Production
Intelligent Manufacturing Systems
Quality Management
Quality Engineering
CAM, CAP, CAD/NC-CIM
Processes Plans Optimization

ZNANSTVENOISTRAŽIVAČKI RAD

Industrijsko inženjerstvo: mjerna tehnika i mjerna kontrola, mjerna i regulacijska tehnika, računalom podržana mjerenja.

Tehnologija oblikovanja deformiranjem, računalna simulacija proizvodnih procesa, modeliranje procesa obrade, deformabilnost i suvremeno oblikovanje deformiranjem, primijenjena teorija plastičnosti u procesima oblikovanja, MKE u tehnologiji oblikovanja deformiranjem, neuronske mreže u tehnologiji oblikovanja deformiranjem, nehomogeno tečenje materijala.

Organizacija proizvodnje. projektiranje proizvodnih sustava, menadžment.

Proizvodno strojarstvo i druge temeljne tehničke znanosti.

Primjena umjetne inteligencije u strojarstvu, inteligentni i fleksibilni sustavi, simulacija, optimizacija i automatizacija procesa i sustava, robotika, računalno upravljani sustavi i strojevi, optimizacija dizajna alata i naprava.

Projektiranje tehnoloških procesa.

RESEARCH AND DEVELOPMENT ACTIVITIES

Industrial engineering: Measuring Technique and Measuring Inspection, Measuring and Regulation Technique, Computer Aided Measuring.

Forming Technology, Computational Simulation of Production Processes, Modeling of Machining Processes, Formability and Modern Forming Technology, Application of Plasticity Theory in Forming Processes, FEM in the Forming Technology, Neural Networks in the Forming Technology, Nonhomogenous Yielding of Materials.

Organization of production. Designing of production systems, Management

Production engineering and other fundamental technical sciences.

AI implementation. Intelligent and fl exible systems; simulation, optimization and automation of processes and systems, robotics, computer controlled systems and machines, design optimization of jigs, fixtures and tools.

Process planning.

PROJEKTI

Savjetovanje pri uspostavi sustava upravljanja kvalitetom prema normi ISO 9001, TOME d.o.o., Duško Pavletić, 2008 - 2011, savjetodavni.

Istraživanje visokoproduktivnih obrada na inteligentnim obradnim sustavima, 069-0692976-1738, MZOŠ, suradnik Goran Cukor, 2007 - 2012, znanstvenoistraživački.

PROJECTS

Quality management system implementation in accordance with the ISO 9001, TOME d.o.o., Duško Pavletić, 2008.- 2011., consulting project.

Investigation of high productivity machining on intelligent machining systems, 069-069-2976-1738, Ministry of Science, Education and Sports of the Republic of Croatia, partner

Projektiranje modela organizacijskih struktura kooperacijskih mreža, 069-0000000-3264, MZOŠ, Goran Cukor, 2008 - 2011, znanstvenoistraživački.

Numeričko modeliranje, simulacija i optimizacija u oblikovanju lima, 069-1201787-1754, MZOŠ, Branimir Barišić, 2007 - 2011, Zlatan Car 2011-2012 znanstvenoistraživački.

Modeliranje naprednih proizvodnih struktura kod inteligentne proizvodnje, 069-0692976-1740, MZOŠ, Tonči Mikac, 2007 - 2010, znanstvenoistraživački.

Obrazovanje i obučavanje ustanova u upravljanju kvalitetom i mjeriteljstvu, IB_JEP-41120-2006, Europska komisija, suradnik Duško Pavletić, 2007 - 2010, Tempus.

Projekt utvrđivanja normi manipulacija za trgovačko društvo Luka Rijeka d.d., RN 23-001/05, Luka Rijeka d.d., Tonči Mikac, 2005 - 2010, elaborat.

WBC – Mreža korisnika virtualne proizvodnje – potpora cjelovitosti trokuta znanja, 144684-Tempus-2008-RS-JPHES, Europska komisija, suradnik Zoran Jurković, 2009 - 2012, Tempus IV.

Modeliranje i optimizacija alata primjenom informacijskih tehnologija virtualne proizvodnje s eksperimentalnom verifikacijom, MZOŠ, Zoran Jurković, 2011-2013, bilateralni Hrvatska – Srbija znanstvenoistraživački projekt. *PUBLIKACIJE / PUBLICATIONS*

Goran Cukor, 2007-2012, research and scientific project.

Designing models of the organization structures of co-operative networks, 069-0000000-3264, Ministry of Science, Education and Sports of the Republic of Croatia, Goran Cukor, 2008.– 2011, research and scientific project.

Numerical modelling, simulation and optimization in sheet metal forming, 069-1201787-1754, Ministry of Science, Education and Sport of the Republic Croatia, Branimir Barišić, 2007.-2011., Zlatan Car 2011-2012 research and scientific project.

The modeling of advanced production structures at intelligent production, 069-0692976-1740, Ministry of Science, Education and Sport of the Republic of Croatia, Tonči Mikac, 2007.- 2010., research and scientific project.

Education and Training of Institutions in Quality Management and Metrology, IB_JEP-41120-2006, European Commission, partner Duško Pavletić, 2007.- 2010., Tempus project.

Measuring and setting of time norms for cargo manipulation in Port of Rijeka, Port of Rijeka inc., Tonči Mikac, 2005.- 2010., study.

WBC Virtual Manufacturing Network - Fostering an Integration of the Knowledge Triangle 144684-Tempus-2008-RS-JPHES, European Commission, partner Zoran Jurković, 2009.- 2012., Tempus IV project.

Modelling and optimization of tool by application of information technologies of virtual manufacturing with experimental verification, Ministry of Science, Education and Sports of the Republic of Croatia, Zoran Jurković, 2011-2013, bilateral Croatia-Serbia research and scientific project.

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Adamović, D., Mandić, V., Jurković, Z., Grizelj, B., Stefanović, M., Marinković, T., Aleksandrović, S.: An Experimental Modelling and Numerical FE Analysis of Steel-Strip Ironing Process, Tehnički vjesnik/Technical Gazette, ISSN 1330-3651, vol. 17, br. 4, str. 435-444, Osijek, Slavonski Brod, Hrvatska, 2010.

Barišić, B., Cukor, G., Radošević, M.: Hardness Measurement by Means of PCE 2000 Hardness Tester Using Leeb Method, Výrobné inžinierstvo, vol. 9, br. 3, str. 77-80, 2010.

Benčić, M., Barišić, B., Varga, G., Miroslav P.: Technology of Roller Bed Belt Conveyor Manufacture by Implemention of CAD-CAM Connection, Engineering review : znanstveni časopis za nove tehnologije u strojarstvu, brodogradnji i elektrotehnici, vol. 30, br.1, str. 1-12, 2010.

Budak, I., Soković, M., Barišić B.: Accuracy improvement of point data reduction with sampling-based methods by Fuzzy logic-based decision-making, Original Research Article, Measurement, vol. 44, br. 6, str. 1188-1200, 2011.

Cukor, G., Jurković, Z.: Optimization of Turning Using Evolutionary Algorithms, Engineering Review, Vol. 30, br. 2, str. 1-10, 2010.

Cukor, G., Jurković, Z., Sekulić, M.: Rotatable central composite design of experiments versus Taguchi method in the optimization of turning, Metalurgija (Metallurgy), vol. 50, br. 1, str. 17-20, Zagreb, Hrvatska, 2011.

Dražić, I., Barišić, B., Mujaković, N, Čep, R.: Implementation of Shishkin mesh in the modelling of spring-mass system, Sborník vědeckých prací Vysoké školy báňské-Technické univerzity Ostrava, Řada strojní (1992), vol 56., br. 1, str. 49-52, 2010.

Jurković, Z., Cukor, G., Andrejcak, I.: Improving the surface roughness at longitudinal turning using the different optimization methods, Tehnički vjesnik (Znanstveno-stručni časopis tehničkih fakulteta Sveučilišta u Osijeku), Vol. 17, br. 4, str. 397-402, 2010.

Kršulja, M., Barišić, B., Plančak, M., Čep, R.: Investigation Of Alluminium Alloy Composition AlSi9Cu3 Alloy In Foundury Process, Technologické inžinierstvo - Technological Engineering, vol. 7, br. 2, str. 53-56, 2010.

Krunić, S., Perinić, M., Maričić, S.: Rapid prototyping application, Engineering review: Znanstveni časopis za nove tehnologije u strojarstvu, brodogradnji i elektrotehnici, ISSN 1330-9587, vol. 30, br. 2, str. 91-100, 2010.

Lazanja, M., Barišić, B., Car, Z., Plančak, M.: Accuracy Inspection of a Milling Machine with Ballbar System, CA Systems in production process Planning, vol. 12, br. 1; str. 79-82, 2011.

Mandić, V., Adamović, D., Jurković, Z., Stefanović, M., Živković, M., Ranđelović, S., Marinković, T.: Numerical FE Modelling of the Ironing Process of Aluminium Alloy and its Experimental Verification, Transactions of FAMENA, ISSN 1333-1124, vol. 34, br. 4, str. 59-69, Zagreb, Hrvatska, 2010.

Maričić, S., Kovačević Pavičić, D., Perinić, M., Lajnert, V.: Uporaba tehnološke dokumentacije kod izrade fiksacijskih pločica za vestibuloplastiku: Medicina Fluminensis: glasilo Hrvatskoga liječničkoga zbora, Podružnica Rijeka. vol. 47, br. 3, str. 294-298, Rijeka, Hrvatska, 2011.

Maričić, S., Perinić, M., Kovačević Pavičić, D.: Contribution to Faster Artifact Classification by Creating an Expert Database, Engineering review: Znanstveni časopis za nove tehnologije u strojarstvu, brodogradnji i elektrotehnici. vol. 31, br. 1, str. 13-18, 2011.

Matković, R., Kršulja, M., Barišić, B., Plančak, M.: CMM Measurement and Measurement Quality Plan for Dimension Control, CA Systems in production process Planning, vol. 12, br. 1, str. 87-90, 2011.

Plančak, M., Barišić, B., Vilotić, D., Kacmarcik, I., Movrin, D., Skakun, P., Milutinović, M.: Analytical and Numerical Solutions for Friction Calibration Curves (FCC) in Bulk Metal Forming, CA Systems in production process Planning, vol. 12, br. 1, str. 107-110, 2011.

Plančak, M., Kuzman, K., Barišić, B., Vilotić, D., Čupković, D.: Analysis of the Double Backward Extrusion Process, Cercetări metalurgice şi de noi materiale, vol. 8, br. 2, str. 15-21, 2010.

Rucki, M., Barišić, B., Ocenasova, L.: Dynamic Calibration of Air Gauges, Archives of Mechanical Technology and Automation, vol. 30, br. 2; str. 129-135, 2010.

Vuković, A., Ikonić, M., Doboviček, S.: Reconfigurable manufacturing system and the need for new taylorism, Engineering review: znanstveni časopis za nove tehnologije u strojarstvu, brodogradnji i elektrotehnici, vol. 30, br. 2; str. 71-82, 2010.

Vuković, A., Perinić, M., Ikonić, M.: Conceptual framework for creating customized modular CAPP system, Engineering review: znanstveni časopis za nove tehnologije u strojarstvu, brodogradnji i elektrotehnici, vol. 31, br. 1; str. 35-43, 2011.

Vučetić, B., Sekulić, M., Jurković, Z.: Primena Taguči metoda u planiranju eksperimenata, Zbornik radova Fakulteta tehničkih nauka, ISSN 0350-428X, vol.25, br.9, str.1865-1868, Novi Sad, Srbija, 2010.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Barišić, B., Jurjević, M., Plančak, M.: Comparison of Device for Measuring Surface Roughness, International Conference „Automation in Production Planning and Manufacturing", str. 9-14, Žilina, Slovačka, 2011.

Barišić, B., Kuzmanović, S., Rackov, M.: Effect of External Loads at the Output Shaft End of Universal Worm Gear Reductor on its Thermal Capacity, International Scientific Conference "Research and Development of Mechanical Elements and Systems", str. 535-540, Niš, Srbija, 2011.

Barišić, B., Math, D. M., Plančak, M.: Implementation of Different Sheet Metal Forming Methods for Development of Mobile Holder Production, Proceedings of 11th International Conference Automation in Production Planning and Manufacturing, str. 9-18, Žilina, Slovačka, 2010.

Barišić, B., Plančak, M., Car, Z.: Analysis of Nonhomogeneous Yielding by Means of Different Intelligent System Based on Stochastic and Finite Element Method, Proceeding of The 14th Asia Pacific Symposium on Intelligent and Evolutionary Systems, str. 326-334, Miyajima - Hiroshima, Japan, 2010.

Barišić, B., Plančak, M., Kuzman, K.: Sheet Metal Forming Strategy for Advanced Production in Computer Aided Manufacturing, Proceedings of 10th International Scientific Conference "New Ways in Manufacturing" Technologies, str. 52-61, Prešov, Slovačka, 2010.

Božić, D., Kršulja, M., Barišić, B., Matković, R., Lazanja, M.: Investigation of an a Quallity Measurement Plan for an Alternator Carrier on a CMM Machine, Quality and Innovation in Engineering and Management, Cluj-Napoca, Rumunjska, str. 27-30, 2011.

Car, Z., Ogrizović, D., Barišić, B., Katalinić, B.: Introduction of Scientific Cloud Concept for Industry Application, 14th Asia Pacific Symposium on Intelligent and Evolutionary Systems, str. 213-220, Miyajima - Hiroshima, Japan, 2010. Czeslaw, J., Rucki, M., Barišić, B.: Examinations of Characteristics of Pneumatic Follower for Profile Measurement, Proceedings of International Conference on Innovative Technologies IN-TECH, str. 197-202, Prag, Češka Republika, 2010.

Doboviček, S., Ikonić, M., Mikac, T., Perinić, M., Rubeša, I.: Graphical depicting of processing cycle in multiproduct production system, Proceeding TMT 2010, str. 701-704, Zenica, Bosna i Hercegovina, 2010.

Drasnar, P., Kudlaček, J., Kreibich, V., Roskanin, P., Pakosta, M., Vales, M., Car, Z.: The Tribological Properties of Zn-PTFE Composite Coating, International Conference on Innovative Technologies IN-TECH, str. 142-146, Bratislava, Slovačka 2011.

Dražić, I., Mujaković, N., Barišić, B.: The Numerical Approximations of the Solution for the Piston Problem With Viscous Compressible Micropolar Fluid, Proceedings of International Conference on Innovative Technologies (IN-TECH), str. 375-384, Prag, Češka Republika, 2010.

Éles, I., Szalay, T., Barišić, B.: Adjustable Positioning Using Deformation of V-Blocks, International Conference on Innovative Technologies IN-TECH, str. 183-187, Bratislava, Slovačka 2011.

Gregov, G., Kršulja, M., Barišić, B., Lukovics, I.: A Study of Plastic Processing and Tool Design for a Polypropylene Product, 8th International Tools Conference, Procedings ITC 2011, str. 156-161, Zlin, Češka Republika, 2011.

Gregov, G., Žic, S., Kršulja, M., Barišić, B., Kudlaček, J.: Some Considerations on a Molding Simulation for a Polyethylene Product, International Conference on Innovative Technologies IN-TECH, str. 790-793, Bratislava, Slovačka, 2011.

Jurković, Z., Andrejčák, I., Kalincová, D., Gečevska, V., Kokavec, M.: Determination of Optimal Cutting Parameters, The 7th International Science Conference KOD 2010 – Chip and Chipless Woodworking Processes, ISBN: 978-80-228-2143-8, str. 97-103, Terchová, Slovačka, 2010.

Jurković, M., Doleček, V., Karabegović, I., Jurković, Z.: Reengineering of Industrial Manufacturing

– Imperative of Development and Competitive Capability, 4th International Conference for Entrepreneurship, Innovation and Regional Development - ICEIRD 2011, ISBN 978–608–65144-2-6, str. 512-519, Skopje, Macedonia, 2011.

Jurković, M., Jurković, Z., Jušić, A., Mandić, V.: Experimental Analysis and Mathematical Modelling of the Rolling Force, 34th International Conference on Production Engineering – ICPE2011, ISBN 9788660550196, str. 297-300, 2011, Niš, Srbija.

Jurković, Z., Jurković, M., Buljan, S.: Innovation and Advanced Technologies for Transition Countries, 4th International Conference for Entrepreneurship, Innovation and Regional Development - ICEIRD 2011, ISBN 978–608–65144-2-6, str. 520-527, Skopje, Macedonia, 2011.

Jurković, Z., Mandić, V., Tadić, B., Janjić, M., Purković, D.: Implementation of Modelling and Optimization Methods in Manufacturing Processes, 9th International Scientific-Expert Conference Maintenance and Production Engineering – KODIP 2011, ISBN 978-9940-527-17-4, str. 35-41, Herceg Novi, Crna Gora, 2011.

Kršulja, M., Cukor, G., Car, Z.: Simulation of Product Logistic, Investigation of Facility Layout Capabilities, International Conference on Innovative Technologies IN-TECH, str. 759-761, Bratislava, Slovačka, 2011.

Kudláček, J., Chaber, P., Barišić, B.: New Possibilities of Degreasing Process Evaluation, Proceedings of International Conference on Innovative Technologies IN-TECH, str. 624-631, Prag, Češka Republika, 2010.

Lazanja, M., Barišić, B., Car, Z.: Considerations on the use of Ballbar System in Accuracy Assessment of the Triaxial CNC Machine Tool, International Conference on Innovative Technologies IN-TECH, str. 762-764, Bratislava, Slovačka, 2011.

Mandić, V., Adamović, D., Jurković, Z., Stefanović, M., Živković, M., Ranđelović, S., Marinković, T.: CAE Analysis of Ironing Process with Experimental Verification, International Scientific Conference MOTSP 2010 - Management of Technology – Step to Sustainable Production, ISBN: 978-953-7738-09-9, str. 255-256, Rovinj, Hrvatska, 2010.

Manestar, D., Maričić, S., Perinić, M., Manestar, D.: Doprinos edukaciji kirurga endoskopičara, 3. Kongres otorinolaringologa i cervikofacijalnih kirurga u Federaciji Bosne i Hercegovine s međunarodnim učešćem, Konjic, Bosna i Hercegovina, 2011.

Manestar, D., Perinić, M., Maričić, S.: Model-sample for the exercise of endoscopic sinus surgery, arranged in several plane cuts, 7. kongres Hrvatskog društva za otorinolaringologiju i kirurgiju glave i vrata s međunarodnim sudjelovanjem, Bol, Hrvatska, 2011.

Maričić, S., Kovačević Pavičić, D., Lajnert, V., Perinić, M.: Comparison of several segmentation techniques used in prosthetic treatment, 45th Meeting of the Continental European Division of the International Association of Dental Research (CED-IADR) with the Scandinavian Division (NOF), Budimpešta, Mađarska, 2011.

Mendiković, T., Jurković, Z., Perinić, M., Mandić, V.: Konstruiranje kalupa za injekcijsko prešanje primjenom reverzibilnog inženjerstva, 2nd International Conference Mechanical Technology and Structural Materials - MTSM 2011, ISSN 1847-7917, str. 111-114, Split, Croatia, 2011.

Milutinović, M., Movrin, D., Plančak, M., Ranđelović, S., Pepelnjak, T., Barišić, B.: Design of hot forging process of parts with complex geometry in digital environment, 15th International Research/Expert Conference Trends in the Development of Machinery and Associated Technology, TMT 2011, str. 101-104, Prag, Češka Republika, 2011.

Mutavgjić, V., Jurković, Z., Franulović, M., Sekulić, M.: Experimental Investigation of Surface Roughness Obtained by Abrasive Water Jet Machining, 15th International Research/Expert Conference - Trends in the Development of Machinery and Associated Technology TMT 2011, ISSN 1840-4944, str. 73-76, Prag, Češka Republika, 2011.

Mutavgjić, V., Jurković, Z., Perinić, M., Mandić, V.: Optimization of Cutting Parameters for Surface Roughness in Abrasive Water Jet Machining, 2nd International Conference Mechanical Technology and Structural Materials - MTSM 2011, ISSN 1847-7917, str. 105-110, Split, Hrvatska, 2011.

Perinić, M., Maričić, S., Gržinić, E.: Primjena SMED metode kao jednog od bitnih alata za unapređivanje proizvodnje, 1st International Conference of Mechanical Technologies and Structural Materials – MTSM, Split, Hrvatska, 2010.

Pilvousek, T., Tatíček, F., Roleček, L., Barišić, B.: The Effect of Strain Rate on the Propreties and Microstructure of the DC 06 Steel, Proceedings of International Conference on Innovative Technologies IN-TECH, str. 628-637, Prag, Češka Republika, 2010.

Plančak, M., Barišić, B., Vilotić, D., Lužanin, O.: Radial Stress in Cold Backward Extrusion: Upper Bound and Analytical Solution, Proceedings of International Conference on Innovative Technologies IN-TECH, str. 14-19, Prag, Češka Republika, 2010.

Plančak, M., Barišić, B., Vilotić, D., Milutinović, M., Lužanin, O.: Identification of Stress State in Cold Backward Extrusion of Steel, Proceeding of 7th International Conference on Mechanical Engineering 2010, str. 294-300, 2010.

Plančak, M., Vilotić, D., Barišić, B.: FE Simulation of Inhomogeneity in Tube Hydroforming, Proceeding of 13th International Scientific Conference Mechanical Engineering 2010, str. 102-110, Bratislava, Slovačka, 2010.

Plančak, M., Vilotić, D., Kuzman, K., Barišić, B.: Experimental Determination of Friction Coefficient in Tube Hydroforming, Proceedings of 1st International Scientific Conference on Engineering "Manufacturing and Advanced Technologies", str. 211-217 , Mostar, Bosna i Hercegovina, 2010.

Radelja, H., Kršulja, M., Šikulec, L., Car, Z.: Measurements Data Analysis and Defect Classification Using NN, Proceedings of International Conference on Innovative Technologies IN-TECH, str. 770-772, Bratislava, Slovačka, 2011.

Radošević, M., Katalinić, B., Cesarec, P., Štimac, S., Barišić, B.: Making device for torque initiation which is appliedin torquewrench calibration, Annals of DAAAM for 2010 & Proceedings, str. 1521-1522, Beč, Austrija, 2010.

Sekulić, M., Gostimirović, M., Kovač, P., Savković, B., Jurković, Z.: Optimization of Cutting Parameters Based on Tool-Chip Interface Temperature in Turning Process Using Taguchi's Method, 15th International Research/Expert Conference - Trends in the Development of Machinery and Associated Technology TMT 2011, ISSN 1840-4944, str. 69-72, Prag, Češka Republika, 2011.

Sekulić, M., Hadžistević, M., Jurković, Z., Kovač, P., Gostimirović, M.: Application of Taguchi Method in the Optimization of Face Milling Parameters, 34th International Conference on Production Engineering – ICPE2011, ISBN 9788660550196, str. 57-60, Niš, Srbija, 2011.

Szalay, T., Székely, F., Barišić, B.: Some Experimental Results in Moulding of Glass Lenses, International Conference on Innovative Technologies IN-TECH 2010, Prag, Češka Republika, 2010.

Šikulec, L., Radelja, H., Kršulja, M., Car, Z.: Comparison in Production Planning of the Classical Method and RL Advanced Algorithms, Proceedings of International Conference on Innovative Technologies IN-TECH, str. 778-780, Bratislava, Slovačka, 2011.

Štimac, S., Katalinić, B., Cesarec, P., Radošević, M., Barišić, B.: Measurement of the closing force on the medical bottles, Annals of DAAAM for 2010 & Proceedings, str. 1523-1524 Beč, Austrija, 2010.

Vitulić, N., Jurković, Z., Perinić, M.: Implementacija CAD/CAM sustava u vituralnoj simulaciji automatiziranog tokarskog obradnog centra, 1st International Conference Mechanical Technology and Structural Materials - MTSM 2010, ISSN 1847-7917, str. 89-95, Split, Hrvatska, 2010.

Žic, S., Ikonić, M., Gljuščić, M.: Human resource management and NHS scheme of job evaluation, Proceeding of International Conference on Innovative Technologies, In-Tech 2010, str. 231-233, Prag, Češka Republika, 2010.

POZVANA PREDAVANJA / INVITED LECTURES

Maričić, S.: Primjena tehnologije Additive manufacturing, Tempus projekt: WBC-VMnet, Workshop "Inovacije u inženjerskom projektiranju" Tehnički fakultet u Rijeci, siječanj 2011.

Maričić, S.: Uvod u 3D modeliranje pomoću CAD/CAM alata, Workshop Studentska inicijativa BioLeonardo, Znanstveno tehnologijski park Sveučilišta u Rijeci, svibanj 2011.

Maričić, S.: Uloga CBCT u rekonstrukciji velikih defekata čeljusti: Cone beam computed tomography, Workshop Medicinski fakultet u Rijeci, listopad 2011.

KNJIGE / BOOKS

Tonči, Mikac; Milan Ikonić: Proizvodni management, Tehnički fakultet Sveučilišta u Rijeci, ISBN 978-953-6326-57-0, Fintrade, Rijeka, 2010.

Proceedings of International Conference on Innovative Technologies IN-TECH 2011 / Kudlaček, J., Car, Z., Barišić, B., Pepelnjak, Tomaž; Pakosta, Michal; Kršulja, Marko (ur.), Prag, Češka: Tisk AS, s.r.o., Jaroměř, 2011.

Proceedings of International Conference on Innovative Technologies IN-TECH 2010 / Kudlaček, J., Barišić, B., Velay, Xavier; Ohkura, Kazuhiro (ur.), Prag, Češka : Tisk AS, 2010.

Jurković, Milan, Jurković, Zoran, Buljan, Stipo, Mahmić, Mehmed: Reinženjering proizvodnih poduzeća: razvoj i modernizacija proizvodnje, str.556, ISBN:978-9958-9269-7-6, Bihać, 2011.

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Budapest University of Technology and Economics, Department of Manufacturing Engineering, Budapest/Budimpešta, Hungary/Mađarska.

Department of Electrical and Electronic Engineering, Faculty of Engineering, Setsunan University Poznan, Poland/Poljska.

Institut für Fertigungstechnik, Vienna University of Technology, Austria/Austrija.

Kielce University of Technology, Chair of Mechanical Technology and Metrology, Kielce, Poland/Poljska.

Manufacturing Systems Laboratory, Graduate School of Engineering, Hiroshima University/Japan.

Poznan University of Technology, Institute of Measurement, Poznan/Poznanj, Poland/Poljska.

Research into Artifacts, Center for Engineering, The University of Tokyo/Japan.

Technical University in Košice, Faculty of Manufacturing Technologies with seat in Preshov, Slovakia/Slovačka.

University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia/Slovenija.

University of Novi Sad, Department for Material Forming Technologies and Surface Engineering, Novi Sad, Serbia/Srbija.

University of Novi Sad, Faculty of technical sciences, Department of Production Engineering, Novi Sad, Serbia/Srbija.

University of Technology, Institute of Mechanical Technology, Poznan/Poznanj, Poland/Poljska.

University of Žilina, Department of Machining and Automation, Žilina, Slovakia/Slovačka.

6.5. ZAVOD ZA KONSTRUIRANJE U STROJARSTVU / DEPARTMENT OF MECHANICAL ENGINEERING DESIGN

Predstojnik Zavoda / Department Head:
Red. prof. dr. sc. / Full Prof. D. Sc. Neven Lovrin

URL: http://www.riteh.uniri.hr/ustroj/zks/

1. Kristina Marković
2. Marina Franulović
3. Gordana Marunić
4. Dubravka Siminiati
5. Marija Kura
6. Saša Zelenika
7. Sanjin Troha
8. Boris Obsieger
9. Neven Lovrin
10. Željko Vrcan
11. Božidar Križan
12. Ervin Kamenar
13. Branimir Rončević
14. Robert Basan
15. Vladimir Glažar
16. Goran Gregov
17. David Blažević

DJELATNICI

REDOVITI PROFESORI

Božidar Križan
konstrukcijski elementi, konstruiranje i oblikovanje proizvoda

Neven Lovrin
konstrukcijski elementi, mehanički prijenosnici snage, transportna sredstva u industriji, inženjerska etika

Gordana Marunić
inženjerska grafika, dokumentiranje, tehničko crtanje, oblikovanje pomoću računala, inženjerska vizualizacija

Boris Obsieger
konstrukcijski elementi, konstrukcijski elementi robota, prijenosnici snage, tribologija, metoda rubnih elemenata, numeričke metode u konstruiranju

Dubravka Siminiati
elementi strojeva, prijenosnici snage, hidraulika i pneumatika

Saša Zelenika
precizno inženjerstvo, tehnologija mikrosustava, MEMS i NEMS, sustavi žetve energije, mjerni sustavi, konstrukcijski elementi

DOCENTI

Robert Basan
konstrukcijski elementi, mehatronika, CAE, zamor materijala

Marina Franulović
konstrukcijski elementi, konstruiranje

FACULTY AND STAFF

PROFESSORS

Božidar Križan
machine elements, systematic product design

Neven Lovrin
machine elements, mechanical power transmissions, industrial transport equipment and devices, engineering etics

Gordana Marunić
engineering graphics, documenting, technical drawing, modelling by computer, engineering visualization

Boris Obsieger
machine elements, construction elements of robots, power transmitting, tribology, boundary elements method, numerical methods in mechanical engineering design

Dubravka Siminiati
machine elements, hydraulics and pneumatics

Saša Zelenika
precision engineering, microsystems technologies, MEMS and NEMS, energy scavenging devices, measurement systems, machine elements

ASSISTANT PROFESSORS

Robert Basan
machine elements, mechatronics, CAE, fatigue of materials

Marina Franulović
machine elements, design in mechanical engineering

VIŠI ASISTENTI

Vladimir Glažar
inženjerska grafika, dokumentiranje, tehničko crtanje, oblikovanje pomoću računala, inženjerska vizualizacija

Sanjin Troha
inženjerska grafika, dokumentiranje, tehničko crtanje, oblikovanje pomoću računala

ASISTENTI

Kristina Marković
konstrukcijski elementi, precizno inženjerstvo

Branimir Rončević
konstrukcijski elementi, kontrukcijski elementi robota, numeričke metode u konstruiranju

ZNANSTVENI NOVACI

David Blažević
precizno inženjerstvo, tehnologija mikrosustava, sustavi žetve energije, mjerni sustavi, konstrukcijski elementi

Goran Gregov
inženjerska grafika, dokumentiranje, tehničko crtanje, oblikovanje pomoću računala, inženjerska vizualizacija, hidraulika i pneumatika

Ervin Kamenar
precizno inženjerstvo, tehnologija mikrosustava, mehatronika, sustavi regulacije i kontrole, sustavi žetve energije, mjerni sustavi

Željko Vrcan
konstrukcijski elementi, mehanički prijenosnici snage, transportna sredstva u industriji

SENIOR ASSISTANTS

Vladimir Glažar
engineering graphics, documenting, technical drawing, modelling by computer, engineering visualization

Sanjin Troha
engineering graphics, documenting, technical drawing, modelling by computer

ASSISTANTS

Kristina Marković
machine elements, precision engineering

Branimir Rončević
machine elements, elements of robots, numerical methods in Mechanical Engineering Design

JUNIOR RESEARCHERS

David Blažević
precision engineering, microsystems technologies, energy scavenging devices, measurement systems, machine elements

Goran Gregov
engineering graphics, documenting, technical drawing, modelling by computer, engineering visualization, hydraulics and pneumatics

Ervin Kamenar
precision engineering, microsystems technologies, mechatronics, control systems, energy scavenging devices, measurement systems

Željko Vrcan
machine elements, mechanical power transmissions, industrial transport equipment and devices

ADMINISTRATIVNO OSOBLJE

Marija Kura
administrativna tajnica

VANJSKI SURADNICI

Mr. sc. Zdenko Novak / Veleučilište u Rijeci
inženjerska grafika i dokumentiranje, tehničko crtanje

Ivan Belobrajdić / Institut za vertikalni transport
transportni sustavi

Vladimir Pelić / Centar zaštitu na radu i zaštite od požara
inženjerska grafika, dokumentiranje, tehničko crtanje

ADMINISTRATIVE STAFF

Marija Kura
administrative secretary

ASSOCIATES

M. Sc. Zdenko Novak / Veleučilište u Rijeci
Engineering Graphics and Documenting, Technical Drawing

Ivan Belobrajdić / Institut za vertikalni transport
Transport Systems

Vladimir Pelić / Centar zaštitu na radu i zaštite od požara
Engineering Graphics and Documenting, Technical Drawing

NASTAVA

Nastava se izvodi iz područja: konstruiranje u strojarstvu, konstrukcijski elementi, mehanički prijenosnici snage, zupčani prijenosnici, tribologija, transportna sredstva u industriji, tehnička logistika, mehatronika, precizno inženjerstvo, tehnologija mikrosustava, MEMS i NEMS, mjerni sustavi, inženjerska grafika i dokumentiranje, oblikovanje pomoću računala.

KOLEGIJI NA SVEUČILIŠNOM PREDDIPLOMSKOM STUDIJU

Inženjerska grafika
Inženjerska grafika i dokumentiranje
Primjena računala
Konstrukcijski elementi I
Konstrukcijski elementi II
Oblikovanje pomoću računala

EDUCATION

Lectures in the field of: design in mechanical engineering, machine elements, mechanical power transmissions, gear transmissions, tribology, industrial transport equipment and devices, technical logistics, mechatronics, precision engineering, microsystems technologies, MEMS and NEMS, measurement systems, engineering graphics and documenting, modelling by computer.

UNDERGRADUATE COURSES

Engineering Graphics
Engineering Graphics and Documenting
Computer Applications
Machine Elements Design I
Machine Elements Design II
Modelling by Computer
Fundamentals of Engineering Design

Osnove konstruiranja
Osnove konstrukcijskih elemenata
Izborni projekt - Konstrukcijski elementi I
Izborni projekt - Konstrukcijski elementi II

KOLEGIJI NA SVEUČILIŠNOM DIPLOMSKOM STUDIJU

Brodski palubni strojevi
CAE u razvoju proizvoda
Elementi transportne tehnike
Hidraulika i pneumatika I
Hidraulika i pneumatika II
Inženjerska vizualizacija
Konstruiranje i oblikovanje
Konstrukcijski elementi III
Konstrukcijski elementi robota
Laboratorijske vježbe A
Laboratorijske vježbe B
Mehanički prijenosnici snage
Mehatronički sustavi
Metodičko konstruiranje
Mikro i nano elektromehanički sustavi
Numeričke metode u konstruiranju
Osnove konstruiranja
Precizne konstrukcije i tehnologija mikrosustava
Tehnička logistika
Trajnost strojeva i konstrukcija
Transportni sustavi
Projekt I - Hidraulika i pneumatika I
Projekt I - Inženjerska vizualizacija
Projekt I - Konstrukcijski elementi III
Projekt I - Konstrukcijski elementi robota
Projekt I - Mehanički prijenosnici snage
Projekt I - Metodičko konstruiranje
Projekt I - Numeričke metode u konstruiranju
Projekt II – Elementi transportne tehnike
Projekt II - Hidraulika i pneumatika II
Projekt II – Konstruiranje i oblikovanje
Projekt II–Precizne konstrukcije i tehnologija mikrosustava

Fundamentals of Machine Elements Design
Elective project - Machine Elements Design I
Elective project - Machine Elements Design II

GRADUATE COURSES

Ship's Deck Machinery
CAE in Product Development
Elements of the Transport Technic
Hydraulics and Pneumatics I
Hydraulics and Pneumatics II
Engineering Visualization
Designing and Product Shaping
Machine Elements Design III
Robot Elements Design
Laboratory exercises A
Laboratory exercises B
Mechanical Power Transmissions
Mechatronics Systems
Systematic Engineering Design
Micro and Nano Electromechanical Systems
Hydraulics and Pneumatics I
Numerical Methods in Mechanical Engineering Design
Fundamentals of Engineering Design
Precision Engineering and Microsystems Technologies
Technical Logistics
Durability of Machines and Structures
Transport Systems
Project I - Hydraulics and Pneumatics I
Project I - Engineering Visualization
Project I - Machine Elements Design III
Project I - Robot Elements Design
Project I - Mechanical Power Transmissions
Project I - Systematic Engineering Design
Project I - Numerical Methods in Mechanical Engineering Design
Project II – Elements of the Transport Technic
Project II - Hydraulics and Pneumatics II
Project II - Designing and Product Shaping

KOLEGIJI NA STRUČNOM STUDIJU

Elementi strojeva I
Elementi strojeva II
Elementi strojeva I BG
Hidraulika i pneumatika
Konstruiranje
Mehatronika
Osnove mehatronike
Tehničko crtanje
Tehničko dokumentiranje

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

IP iz hidrostatskih i pneumatskih prijenosnika
Izabrana poglavlja iz konstrukcijskih elemenata
Izabrana poglavlja iz prijenosnika snage
IP iz transportnih sredstava u industriji
Konstrukcija i optimizacija zupčastih prijenosnika
Kontaktni problemi u analizi konstrukcijskih elemenata
Metoda rubnih elemenata
Modeliranje inženjerskih konstrukcija
Nauka o konstruiranju
Podatljivi elementi i mehanizmi
Principi konstrukcija visokih i ultravisokih preciznosti
Specijalni mehanički prijenosnici
Project II - Precision Engineering and Microsystems Technologies

VOCATIONAL COURSES

Machine Elements I
Machine Elements II
Machine Elements I NA
Hydraulics and Pneumatics
Mechanical Engineering Design
Mechatronics
Fundamentals of Mechatronics
Technical Drawing
Technical Documenting

POSTGRADUATE COURSES

Selected Chapters on Hydrostatic and Pneumatic Transmissions
Selected Chapters on Machine Elements Design
Selected Chapters on Power Transmission
Selected Chapters on Industrial Transport Equipment and Devices
Mechanical Engineering Design and Optimization of Gear Transmitting
Contact Problems in Machine Elements Analyses
Boundary Elements Method
Design Science
Modeling of Engineering Structures Design Science
Compliant Elements and Mechanisms
Principles of High and Ultra-High Precision Devices
Special Mechanical Transmissions

ZNANSTVENOISTRAŽIVAČKI RAD

Konstrukcijsko strojarstvo: modeliranje, zupčasti prijenosnici, planetarni prijenosi, evolventno ozubljenje s velikim stupnjem prekrivanja profila, zamor materijala, alternativni hidraulički sustavi, hibridni pogoni.

Precizno inženjerstvo: podatljivi mehanizmi, strukturna analiza, integracija u mehatroničke sustave, mjerne tehnike, oprema za sinkrotronsko zračenje.

Tehnologija mikrosustava: MEMS, manipulacija, montaža i pakiranje, skalirajući učinci, proizvodnja mikrostruktura, prikupljanje otpadne energije iz okoline.

RESEARCH AND DEVELOPMENT ACTIVITIES

Mechanical engineering design: modeling, gear transmissions, planetary gears, high transverse contact ratio gears, material fatigue, alternative hydraulic systems, hybrid drives.

Precision engineering: compliant mechanisms, structural analysis, integration into mechatronics devices, measurement techniques, equipment for synchrotron radiation.

Micro-systems technologies: MEMS, handling, assembly and packaging, scaling effects, micro-fabrication, energy scavenging.

PROJEKTI

Podatljivi uređaji ultravisoke preciznosti za uporabu u mikrotehnologiji i nanotehnologiji, 069-0692195-1792, MZOŠ, Saša Zelenika, 2007 - 2012, znanstvenoistraživački.

Istraživanje dušikovih efekata u složenim poluvodičkim spojevima, 009-0982886-0542, MZOŠ, suradnik Saša Zelenika, 2007 - 2012, znanstvenoistraživački.

Materijali, trajnost i nosivost suvremenih zupčastih prijenosnika, 069-0692195-1796, MZOŠ, Božidar Križan, 2007 - 2012, znanstvenoistraživački.

Razvoj matematičkog modela nastanka i rasta zamornih pukotina u uvjetima kotrljajnokliznog kontakta, MZOŠ, Robert Basan, 2010 - 2011, kolaborativni.

Konstrukcija i optimizacija prijenosnika snage, 069-0692195-1793, MZOŠ, Boris Obsieger, 2007 - 2012, znanstvenoistraživački.

Bežični autonomni senzor tlaka u automobilskim gumama – 'BAST', POC-02-02, Poslovno-inovacijski centar Hrvatske – BICRO, Saša Zelenika, 03. – 09. 2011., tehnologijski projekt.

Hrvatsko nazivlje strojnih elemenata, Hrvatska zaklada za znanost, Božidar Križan, 2010 – 2011, stručni projekt

PROJECTS

Ultra-high precision compliant devices for micro and nanotechnology applications, 069-0692195-1792, Ministry of Science, Education and Sports of the Republic of Croatia, Saša Zelenika, 2007-2012, research and scientific project.

Analysis of nitrogen-related defects in compound semiconductors, 009-0982886-0542, Ministry of Science, Education and Sports of the Republic of Croatia, partner Saša Zelenika, 2007-2012, research and scientific project.

Materials, Durability and Load Capacity of Modern Gear Transmissions, 069-0692195-1796, Ministry of Science, Education and Sports of the Republic of Croatia, Božidar Križan, 2007- 2012, research and scientific project.

Development of a mathematical model of rolling-sliding-contact fatigue crack initiation and growth, Ministry of Science, Education and Sports of the Republic of Croatia, Robert Basan, 2010-2011, collaborative project.

Design and optimization of power transmissions, 069-0692195-1793, Ministry of Science, Education and Sports of the Republic of Croatia, Boris Obsieger, 2007-2012, research and scientific project.

Wireless autonomous tire pressure sensor – 'BAST', POC-02-02, Business Innovation Center of Croatia – BICRO, Saša Zelenika, 03. – 09. 2011., technology development project.

Croatian Machine Elements Technology, Croatian Science Foundation, Božidar Križan, 2010 – 2011, professional project

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Basan, R., Franulović, M., Lengauer, M., Križan, B.: Rolling-sliding-contact fatigue damage of the gear tooth flanks, Engineering review, vol. 30, 2; str. 37-46, 2010.

Basan, R., Franulović, M., Prebil, I., Črnjarić-Žic, N.: Analysis of strain life fatigue parameters and behaviour of different groups of metallic materials, International journal of fatigue, vol. 33, 3, str. 484-491, 2011.

Basan, R., Franulović, M., Rubeša, D., Prebil, I.: Implementation of strain-life fatigue parameters estimation methods in a web-based system, Procedia Engineering, vol. 10, str. 2369-2374, 2011.

De Bona, F., Zelenika, S., Munteanu, M. Gh.: Mechanical properties of microcantilevers: Influence of the anticlastic effect, Sensors and Actuators A, 165, 2; str. 431-438, 2011.

Franulović, M., Basan, R., Kunc, R., Prebil, I.: Numerical modeling of life prediction of gears, Procedia Engineering, vol. 10, str. 562-567, 2011.

Gregov G., Siminiati D.: Computer Simulation of a Laboratory Hydraulic System with Matlab-Simulink, International Journal Advanced Engineering (1846-5900) 4, 1, str. 17-24, Rijeka, 2010.

Marković, K., Franulović, M.: Contact stresses in gear teeth due to tip relief profile modification, Engineering Review, ISSN 1330-9587, vol. 31, br. 1, str. 63-67, Eng. Rev., Rijeka, 2011.

Marunić,G.: Tooth Root Stress Modifying Factors of Webbed Gears, Machines Technologies Materials, vol. 10, str. 38-41, 2011.

Rončević, B., Staniša, B.: Finite Element Analysis of Highly Loaded Components of a 50 MW Steam Turbine, Advanced Engineering 5, 1, str. 69-82, 2011.

Siminiati, D.: Energy saving with close circuit pneumatic system, Engineering Review, ISSN 1330-9857, vol. 30, br. 1, str. 111- 116, Eng. Rev., Rijeka, 2010.

Siminiati, D.: Price reduction on compressed air, Engineering Review, ISSN 1330-9587, vol. 31, br. 1, str. 63-67, Eng. Rev., Rijeka, 2011.

Stojković, N., Kamenar, E., Šverko, M.: Optimized Second- and Fourth- Order LP and BP Filters, Automatika, 52, 2, str. 158-168, 2011.

Zelenika, S., Blažević, D.: Issues in validation of performances of piezoelectric vibration-based energy harvesters, SPIE Proceedings, 8066, 806615-1 – 806615-11, 2011.)

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Basan, R., Franulović, M., Križan, B.: Web-based material data knowledge base and expert system, Trends in the development of machinery and associated technology - TMT 2011, Ekinović, S., Vivancos Calvet, J., Tacer, E. (ur.)., str. 505-508, Fojnica: Faculty of Mechanical Engineering in Zenica, Escola Tecnica Superior D'Enginyeria Industrial de Barcelona, Bahçeşehir University Istanbul, 2011.

Basan, R., Franulović, M., Križan, B., Prebil, I.: A web-based material properties database and system for estimation of material parameters - concept and implementation, Proceedings of the 7th International scientific conference Research and development of mechanical elements and systems, Miltenović, V. (ur.), str. 95-98, Mechanical Engineering Faculty, Niš, Srbija, 2011.

Basan, R., Franulović, M., Rubeša, D., Prebil, I.: Implementation of strain-life fatigue parameters estimation methods in a web-based system, Proceedings of 11th International Conference on the Mechanical Behavior of Materials, Guagliano, M., Vergani, L. (ur.), str. 2369-2374, Milano, Italija, 2011.

Blažević, D., Zelenika, S.: Sensitivity Analysis of Piezoelectric Scavenging of Vibration Energy, Proceedings of the 11th International Conference of the European Society for Precision Engineering and Nanotechnology – vol. II, str. 454-457, Como, Italija, 2011.

Franulović, M., Basan, R., Križan, B.: Low cycle fatigue and elasto-plastic material behaviour simulation, Proceedings of the 7th International scientific conference Research and development of mechanical elements and systems, Miltenović, V. (ur.), str. 89-94, Niš, Srbija, 2011.

Franulović, M., Basan, R., Kunc R., Prebil I.: Numerical Modelling of Life Prediction in Gears, Proceedings of 11th International Conference on the Mechanical Behavior of Materials, Guagliano, M., Vergani, L. (ur.), Milano, Italija, 2011.

Glažar, V., Franković, B.: Heat Transfer Analysis of the Compact Heat Exchanger with Different Microchannel Geometry, Proceedings - The 23rd IIR International Congress of Refrigeration - Refrigeration for Sustainable Development, Prag, Češka, 2011.

Glažar, V., Lenić, K., Bonefačić, I.: Numerical and Experimental Analysis of Heat Exchanger with Microchannel Coil, International Congress Energy and the Environment 2010 - Symposium Heat SET 2010 - vol. II, str. 233-240, Rijeka, 2010.

Glažar, V., Lenić, K., Trp, A., Franković, B.: Experimental Analysis of Thermodynamical Properties of Fin-and-Tube and Heat Exchanger with Microchannel Coil, Zbornik radova / Proceedings INTERKLIMA 2011 - 21st International symposium on heating, refrigerating and air conditioning, Zagreb, 2011.

Lovrin, N., Vrcan, Ž.: Engineering Ethics for the 21st Century, 3rd International Scientific Conference Management of Technology Step to Sustainable Production MOTSP 2011 Conference Proceedings, Ćosić, P., Barić, G., Đukić, G. (ur.), Faculty of Mechanical Engineering and Naval Architecture, Zagreb, 2011.

Marunić, G.: Tooth Root Stress Modifying Factors of Webbed Gears, Proceedings of VIII International Congress Machines, Technologies, Materials 2011, str. 197-200, Varna, Bugarska, 2011.

Mutavgjić V., Jurković Z., Franulović M., Sekulić M.: Experimental Investigation of Surface Roughness Obtained by Abrasive Water Jet Machining, Proceedings of the 15th International Research/Expert Conference "Trends in the Development of Machinery and Associated Technology" TMT, mjesto, država, 2011.

Rončević, B., Siminiati, D.: Receding contact analysis with NX Nastran, 8th International Conference on Computer Aided Design and Manufacturing CADAM 2010 Proceedings, Gradac, 2010.

Rončević, B., Staniša, B.: Numerical Analysis of Highly Loaded Components of a 50 MW Steam Turbine. Proceedings of the 9th International Conference on Advanced Engineering, Computer Aided Design and Manufacturing (CADAM 2011), Obsieger, B. (ur.), Vela Luka, 2011.

Vrcan, Ž.; Lovrin, N.; Križan, B.: Some Considerations on the Geometry of High Transverse Contact Ratio Internal Involute Gears, IN-TECH 2011 Proceedings of International Conference on Innovative Technologies, Kudláček, J., Car, Z., Pepelnjak, T., Pakosta, M. (ur.), Bratislava, Slovačka, 2011.

MONOGRAFIJE / MONOGRAPHS

Križan, B. (glavni urednik/Editor-in-Chief): Tehnički fakultet – 50 godina – 1960-2010, Tehnički fakultet Sveučilišta u Rijeci, ISBN 978-953-6326-24-2, Rijeka, 2011.

KNJIGE / BOOKS

Obsieger, B., Numerical Methods III – Approximation of Functions, University of Rijeka, Faculty of Engineering, Rijeka, 2011.

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Elettra, Trieste, Italy/Italija.

Moscow State Industrial University, Moscow, Russia/Rusija

Russian Research Institute for Metrological Service, Moscow, Russia/Rusija

Slovak University of Technology in Bratislava, Slovakia/Slovačka.

University of Applied Sciences, Graz, Austria/Austrija.

University of Leoben (Montanuniversität Leoben), Austria/Austrija.

University of Ljubljana, Faculty of Mechanical Engineering, Slovenia/Slovenija.

University of Maribor, Faculty of Mechanical Engineering, Slovenia/Slovenija.

University of Miskolc, Faculty of Mechanical Engineering and Informatics, Hungary/Mađarska.

University of Udine, Italy/Italija.

University of West Bohemia, Faculty of Mechanical Engineering, Plzen, Czech Republic/Češka.

6.6. ZAVOD ZA MATEMATIKU, FIZIKU, STRANE JEZIKE I KINEZIOLOGIJU / DEPARTMENT OF MATHEMATICS, PHYSICS, FOREIGN LANGUAGES AND KINESIOLOGY

Predstojnik Zavoda / Department Head:
Red. prof. dr. sc. / Full Prof. D. Sc. Julijan Dobrinić

URL: http://www.riteh.uniri.hr/ustroj/zmfsjk/

1. Mira Bobanović
2. Marta Žuvić-Butorac
3. Elisa Velčić Janjetić
4. Ksenija Mance
5. Julijan Dobrinić
6. Nelida Črnjarić-Žic
7. Melita Štefan-Trubić
8. Katica Jurasić
9. Mirko Bađim
10. Loredana Simčić
11. Bojan Crnković
12. Ivan Dražić

DJELATNICI

REDOVITI PROFESORI

Julijan Dobrinić
prirodne znanosti – fizika, tehničke znanosti – interdisciplinarne tehničke znanosti (inženjerstvo okoliša)

IZVANREDNI PROFESORI

Nelida Črnjarić-Žic
numerička matematika, matematičko modeliranje, računalne simulacije u tehnici

DOCENTI

Marta Žuvić-Butorac
biofizika i biomedicina, statističke metode obrade medicinskih podataka, e-učenje

VIŠI PREDAVAČI

Mirko Bađim
kineziologija

Katica Jurasić
euklidska i neeuklidska geometrija, metodika nastave matematike

Ksenija Mance
anglistika i germanistika

PREDAVAČI

Elisa Velčić Janjetić
germanistika

Ivan Dražić
parcijalne diferencijalne jednadžbe, numerička analiza, metodika nastave matematike

FACULTY AND STAFF

PROFESSORS

Julijan Dobrinić
natural sciences – physics, technical sciences – interdisciplinary technical sciences (environmental engineering)

ASSOCIATE PROFESSORS

Nelida Črnjarić-Žic
numerical mathematics, mathematical modelling, computer simulations in engineering

ASSISTANT PROFESSORS

Marta Žuvić-Butorac
biophysics and biomedicine, biostatistics, e-learning

SENIOR LECTURERS

Mirko Bađim
Kinesiology

Katica Jurasić
euclidean and noneuclidean geometry, mathematics education

Ksenija Mance
English studies, German studies

LECTURERS

Elisa Velčić Janjetić
German studies

Ivan Dražić
partial differential equations, numerical analysis, mathematics education

ASISTENTI

Loredana Simčić
kombinatorika

Melita Štefan-Trubić
numerička matematika

ZNANSTVENI NOVACI

Nataša Glavan Vukelić
optička spektroskopija

ADMINISTRATIVNO OSOBLJE

Mira Bobanović
administrativna tajnica

VANJSKI SURADNICI

Izv. prof. dr. sc. Valter Boljunčić / Odjel za ekonomiju i turizam "Dr. Mijo Mirković, Sveučilište u Puli
metode operacijskih istraživanja

Izv. prof. dr. sc. Nada Orlić / Odjel za fiziku Sveučilišta u Rijeci
atomska i nuklearna fizika

Doc. dr. sc. Biserka Draščić-Ban / Pomorski fakultet Sveučilišta u Rijeci
matematčika analiza, statistika, nejednakosti

Asist. mr. sc. Ivana Jelovica Badovinac / Odjel za fiziku Sveučilišta u Rijeci

Asist. dr. sc. Luka Mandić / Odjel za fiziku Sveučilišta u Rijeci
atomska i molekularna fizika

Asist. Doris Šegota / Odjel za fiziku Sveučilišta u Rijeci
opća fizika

Asist. Marijana Varašanec / Odjel za fiziku Sveučilišta u Rijeci
opća fizika

ASSISTANTS

Loredana Simčić
combinatorics

Melita Štefan-Trubić
numerical mathematics

JUNIOR RESEARCHERS

Nataša Glavan Vukelić
optical spectroscopy

ADMINISTRATIVE STAFF

Mira Bobanović
administrative secretary

ASSOCIATES

Assoc. Prof. D. Sc. Valter Boljunčić / Department of Economics and Tourism "Dr. Mijo Mirković, University of Pula
Operational research methods

Assoc. Prof. D. Sc. Nada Orlić / Department of physics, University of Rijeka
Atomic and nuclear physics

Assist. Prof. D. Sc. Biserka Draščić-Ban / Faculty of Maritime Studies, University of Rijeka
Mathematical analysis, statistics, inequalities

Assist. M. Sc. Ivana Jelovica Badovinac / Department of physics, University of Rijeka

Assist. D. Sc. Luka Mandić / Department of physics, University of Rijeka
Atomic and molecular physic

Assist. Doris Šegota / Department of physics, University of Rijeka
General physics

Assist. Marijana Varašanec / Department of physics, University of Rijeka
General physics

Ana Grbac / Odjel za matematiku Sveučilišta u Rijeci
diskretna matematika

Vlasta Ružička-Matejčić / Pomorski fakultet Sveučilišta u Rijeci
metodika nastave matematike

Ivana Slamić / Odjel za matematiku Sveučilišta u Rijeci
harmonijska analiza, teorija vjerojatnosti

Ana Grbac / Department of Mathematics, University of Rijeka
Discrete mathematics

Vlasta Ružička-Matejčić / Faculty of Maritime Studies, University of Rijeka
Mathematics education

Ivana Slamić / Department of Mathematics, University of Rijeka
Harmonic analysis, Probability theory

NASTAVA

Nastava matematičkih kolegija izvodi se za inženjere s odabranim poglavljima iz područja linearne algebre, matematičke analize, diferencijalnih jednadžbi, vjerojatnosti i statistike te numeričke i stohastičke matematike.

Teme iz klasične, relativističke i kvantne fizike te model harmoničkog oscilatora primijenjeni su kod mehaničkih i elektromagnetskih titranja na poglavlje o građi tvari te interakciji zračenja i materije. Zaštita okoliša obrađuje ekološku problematku i interakciju tehnoloških sustava s okolišem.

Nastava kolegija *Engleski jezik* ili *Njemački jezik* obuhvaća obrađivanje odabranih poglavlja iz područja strojarstva, brodogradnje, elektrotehnike i računalstva te usavršavanje stručnog vokabulara i gramatičkih struktura jezika tehnike.

Nastava tjelesne i zdravstvene kulture izvodi se po osnovnom i posebnom programu, a izborni programi su za studente viših studijskih godina.

EDUCATION

Mathematical lectures for engineers with selected chapters in the field of: linear algebra, mathematical analysis, differential equations, probability and statistics, numerical and stochastic mathematics.

Topics on classical, relativistic and quantum physics as well as the model of a harmonious oscillator are applied in mechanical and electromagnetic vibrations, in the chapter of the structure of matter, and in an interaction between radiation and matter. Environmental protection deals not only with the problem of ecology but also with an interplay between technical systems and the environment.

The English and German Language courses of study: the analysis of selected chapters in the field of Mechanical Engineering, Naval Architecture, Electrical Engineering and Computer Science as well as the enhancement of professional-technical vocabulary and grammar.

Lectures of physical and health education are carried out both according to a basic and special program, whereas an optional program is designed for students of higher level grades.

KOLEGIJI NA PREDDIPLOMSKOM SVEUČILIŠNOM STUDIJU

Engleski jezik I
Engleski jezik II
Fizika I
Fizika II
Inženjerska matematika ET
Inženjerska statistika
Matematika I
Matematika II
Njemački jezik I
Njemački jezik II
Osnove fi zike za biomedicinu
Tjelesna i zdravstvena kultura I
Tjelesna i zdravstvena kultura II
Uvod u modernu fi ziku
Zaštita okoliša

KOLEGIJI NA DIPLOMSKOM SVEUČILIŠNOM STUDIJU

Inženjerska matematika
Metode operacijskih istraživanja
Numerička i stohastička matematika
Stohastička matematika

KOLEGIJI NA STRUČNOM STUDIJU

Engleski jezik I
Engleski jezik II
Fizika
Matematika I
Matematika II
Njemački jezik I
Njemački jezik II
Tjelesna i zdravstvena kultura I
Tjelesna i zdravstvena kultura II

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

Statističke metode i stohastički procesi
Matematičko modeliranje i numeričke metode

UNDERGRADUATE COURSES

English Language I
English Language II
Physics I
Physics II
Mathematics for Engineers ET
Statistics for Engineers
Mathematics I
Mathematics II
German Language I
German Language II
Fundamentals of Physics for Biomedicine
Physical and Health Education I
Physical and Health Education II
Introduction to Modern Physics
Environment Protection

GRADUATE COURSES

Mathematics for Engineers
Operations Research Methods
Numerical and Stochastic Mathematics
Stochastic Mathematics

VOCATIONAL COURSES

English Language I
English Language II
Physics
Mathematics I
Mathematics II
German Language I
German Language II
Physical and Health Education I
Physical and Health Education II

POSTGRADUATE COURSES

Statistical Methods and Stochastic Processes
Mathematical Modeling and Numerical Methods

Metode optimizacije
Metodologija znanstvenoistraživačkog rada
Izabrana poglavlja iz zaštite okoliša

Optimization Methods
Methodology of Scientific Work and Research
Selected Topics on Environment Protection

ZNANSTVENOISTRAŽIVAČKI RAD

KATEDRA ZA PRIMIJENJENU MATEMATIKU:

parcijalne diferencijalne jednadžbe, numerička matematika, matematičko modeliranje, optimizacija, operacijska istraživanja, statističke metode, diferencijalna geometrija

KATEDRA ZA FIZIKU I ZAŠTITU OKOLIŠA:

optička spektroskopija onečišćene morske vode, spektroskopija rendgenskog zračenja u analizi uzoraka okoliša, analiza elemenata u tragovima

KATEDRA ZA STRANE JEZIKE:

interdisciplinarni znanstvenoistraživački pristup području antropologije i temama kulture (znanstvena grana anglistika, područje lingvistike), istraživanje pojma tehnike uopće kao i njegove prisutnosti u izabranim romanima njemačke književnosti vajmarskog doba (1918–1933) (znanstvena grana germanistika, područje književnosti)

RESEARCH AND DEVELOPMENT ACTIVITIES

CHAIR OF APPLIED MATHEMATICS:

partial differential equations, numerical mathematics, mathematical modeling, optimization, operational research, statistical methods, differential geometry

CHAIR OF PHYSICS AND ENVIRONMENT PROTECTION:

optical spectroscopy of polluted sea water, x-ray spectroscopy in environmental sample analysis, trace elements analysis

CHAIR OF FOREIGN LANGUAGES:

interdisciplinary scientific-research approach to the field of anthropology and cultural themes (scientific branch English studies, field Linguistics), research of the term technics and its presence in selected novels of the German literature of the Weimar period (1918–1933) (scientific branch German studies, field Literature)

PROJEKTI

Istraživanje metoda sprječavanja onečišćenja mora od objekata morske tehnologije, 069-0691668-3007, MZOŠ, Julijan Dobrinić, 2007. - 2011., znanstvenoistraživački.

PROJECTS

Research of methods for prevention of sea pollution by marine technology objects, 069-0691668-3007, Ministry of Science, Education and Sports of the Republic of Croatia, Julijan Dobrinić, 2007- 2011, research and scientific project.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Basan, R., Franulović, M., Prebil, I., Črnjarić-Žic, N.: Analysis of strain life fatigue parameters and behaviour of different groups of metallic materials, International journal of fatigue, vol. 33 (3), ISSN 0142-1123, str. 484-491, 2011.

Črnjarić-Žic, N., Crnković, B.: High order accurate semi-implicit WENO schemes for hyperbolic balance law, Applied mathematics and computation, vol. 217, ISSN 0096-3003, str. 8611-8629, 2011.

Dekanić, A., Dintinjana, R. D., Budisavljević, I., Pečanić, S., Žuvić-Butorac, M., Jonjic, N.: Strong nuclear EGFR expression in colorectal carcinomas is associated with cyclin-D1 but not with gene EGFR amplification, Diagnostic Pathology (2011) 6:108.

Ivošević, T., Dobrinić, J.: Environmental protection in the curricula of faculties and colleges in technical sciences in The Republic of Croatia, Energy and the environment, vol. I, str. 491-502, 2010.

Mujaković, N., Dražić, I.: The Cauchy problem for one-dimensional flow of a compressible viscous fluid: Stabilization of the solution, Glasnik matematički, vol. 46 (1), ISSN 0017-095X, str. 215-231, Zagreb, 2011.

Žuvić-Butorac, M., Nebić, Z., Nemčanin, D., Mikac, T., Lučin, P.: Establishing an Institutional Framework for an E-learning Implementation – Experiences from the University of Rijeka, Croatia, Journal of Information Technology Education (2011), 10: IIP 043-056.

Žuvić-Butorac, M., Rončević, N., Nemčanin, D., Nebić, Z.: Blended E-Learning in Higher Education: Research on Students' Perspective, Issues in Informing Science and Information Technology (2011), 8:409-429.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Crnković, B., Črnjarić-Žic, N.: Polynomial weighted essentially non-oscillatory approximation, Seventh Conference on Applied Mathematics and Scientific Computing, Trogir, 2011.

Dražić, I., Mujaković, N.: 3D model for compressible viscous heat conducting micropolar fluid with symmetry and free boundary: a global existence theorem, Seventh Conference on Applied Mathematics and Scientific Computing, Trogir, 2011.

Dražić, I., Mujaković, N., Barišić, B.: The Numerical Approximations of the Solution for the Piston Problem With Viscous Compressible Micropolar Fluid, International Conference on Innovative Technologies, Praha, Češka, 2010.

Ivošević, T., Dobrinić, J.: Zaštita okoliša u studijskim programima na visokim učilištima u području tehničkih znanosti u RH, Energy and the environment, Opatija, 2010.

Jelovica Badovinac, I., Lofrumento, C., Orlić, N., Dobrinić, J.: Spectroscopic analysis of Banknotes and postage stamps from the Free state of Rijeka, Technart 2011, Berlin, Njemačka, 2011.

Valentine, D. L., Mezić, I., Maćešić, S., Črnjarić–Žic, N., Ivić, S., Hogan, P., Fonoberov, V. A., Loire, S.: Bacterial hydrocarbon uptake due to the oil spill in the Gulf of Mexico, Seventh Conference on Applied Mathematics and Scientific Computing, Trogir, 2011.

KNJIGE / BOOKS

Dobrinić, J., Mandić, L.: Zbirka riješenih primjera iz Fizike I., II. izdanje, Tehnički fakultet Sveučilišta u Rijeci, Rijeka, 2010.

POZVANA PREDAVANJA / INVITED LECTURES

Žuvić-Butorac, M: Improving learning and teaching through institutional collaboration supported by ICT: Experiences from University of Rijeka, Croatia, Sveučilište u Rijeci, 11. Listopada 2011., studijski posjet europske delegacije u okviru Programa za cjeloživotno učenje Europske zajednice u organizaciji CARNet-a

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Katholike Universitat Leuven, Belgija/Belgium.

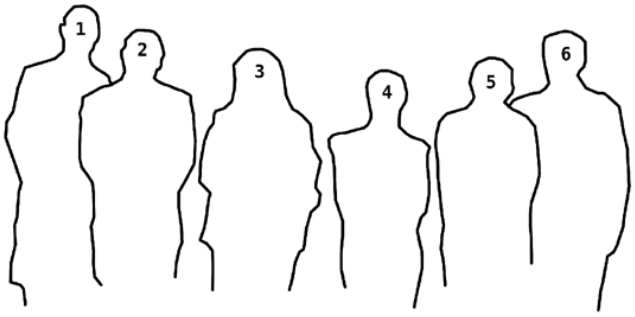
Valencia University of Technology, Španjolska/Spain

6.7. ZAVOD ZA MATERIJALE / DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

Predstojnik Zavoda:
Red. prof. dr. sc. / Full Prof. D. Sc. Božo Smoljan

URL: http://www.riteh.uniri.hr/ustroj/zm/

1. Dario Iljkić
2. Božo Smoljan
3. Loreta Pomenić
4. Natalija Forgić
5. Ivan Katavić
6. Domagoj Rubeša



DJELATNICI

REDOVITI PROFESORI

Loreta Pomenić
materijali, tehnologija materijala, materijali i tehnološki postupci, nemetalni materijali, zaštita materijala, ljevarstvo, karakterizacija materijala, selekcija materijala, kemija materijala, korozija i zaštita metala

Domagoj Rubeša
metalni materijali, mehanika materijala, mehanika prijeloma, selekcija materijala, mehanika prijeloma i umorljivost, procesi oštećivanja materijala

Božo Smoljan
materijali, tehnologija materijala, materijali i tehnološki postupci, ispitivanje materijala, metalni materijali, toplinska obrada metala i inženjerstvo površina, ljevarstvo, karakterizacija materijala

Ivan Katavić
(professor emeritus)

VIŠI ASISTENTI

Dario Iljkić
materijali, tehnologija materijala, materijali i tehnološki postupci, postupci toplinske obrade, ljevarstvo, ispitivanje materijala, metalni materijali

ADMINISTRATIVNO OSOBLJE

Natalija Forgić
administrativna tajnica

VANJSKI SURADNICI

Prof. dr. sc. Leszek A. Dobrzański
ispitivanje materijala

FACULTY AND STAFF

PROFESSORS

Loreta Pomenić
materials, technology of material, materials and technological processes, nonmetal materials, materials protection, casting, materials characterisation, materials selection, materials chemistry, corrosion and metals protection

Domagoj Rubeša
metallic materials, materials mechanics, fracture mechanics, materials selection, fracture mechanics and fatigue of materials, processes of damaging of materials

Božo Smoljan
materials, technology of material, materials and technological processes, materials testing, metallic materials, metals heat treatment and surface engineering, casting, materials characterisation

Ivan Katavić
(professor emeritus)

SENIOR ASSISTANTS

Dario Iljkić
materials, technology of material, materials and technological processes, processes of heat treatment, casting, materials testing, metallic materials

ADMINISTRATIVE STAFF

Natalija Forgić
administrative secretary

ASSOCIATES

Prof. D. Sc. Leszek A. Dobrzański
Materials testing

Prof. dr. sc. Robert Danzer
keramički i kompozitni materijali

Izv. prof. dr. sc. Vojteh Leskovšek
toplinska obrada metala

Izv. prof. dr. sc. Furio Traven
mehanika loma

Prof. D. Sc. Robert Danzer
Ceramics and composite materials

Assoc. prof. D. Sc. Vojteh Leskovšek
Metals heat treatment

Assoc. prof. D. Sc. Furio Traven
Fracture mechanics

NASTAVA

Nastava iz područja: materijali, tehnologija materijala, materijali i tehnološki postupci, postupci toplinske obrade, metalni materijali, nemetalni materijali, ispitivanje materijala, toplinska obrada metala i inženjerstvo površina, ljevarstvo, zaštita materijala, karakterizacija materijala, mehanika materijala, mehanika prijeloma i umorljivost, procesi oštećivanja materijala, selekcija materijala, kemija materijala, korozija i zaštita metala.

KOLEGIJI NA PREDDIPLOMSKOM SVEUČILIŠNOM STUDIJU

Materijali I
Materijali II
Postupci toplinske obrade
Tehnologija materijala
Izborni projekt – Materijali I
Izborni projekt – Materijali II

KOLEGIJI NA DIPLOMSKOM SVEUČILIŠNOM STUDIJU

Ispitivanje materijala
Karakterizacija materijala
Ljevarstvo
Mehanika materijala
Mehanika prijeloma
Metalni materijali
Nemetalni materijali
Selekcija materijala

EDUCATION

Lectures in the fi eld of: materials, technology of material, materials and technological processes, processes of heat treatment, metallic materials, nonmetallic materials, materials testing, metals heat treatment and surface engineering, casting, materials protection, materials characterisation, materials mechanics, fracture mechanics and fatigue of materials, processes of damaging of materials, materials selection, materials chemistry, corrosion and metals protection.

UNDERGRADUATE COURSES

Materials I
Materials II
Processes of Heat Treatment
Technology of Materials
Elective project – Materials I
Elective project – Materials II

GRADUATE COURSES

Materials Testing
Materials Characterisation
Casting
Materials Mechanics
Fracture Mechanics
Metallic Materials
Nonmetallic Materials
Materials Selection

Toplinska obrada metala i inženjerstvo površina
Zaštita materijala
Projekt I – Toplinska obrada metala i inženjerstvo površina
Projekt I – Zaštita materijala
Projekt II – Mehanika materijala

Metals Heat Treatment and Surface Engineering
Materials Protection
Project I – Metals Heat Treatment and Surface Engineering
Project I – Materials Protection
Project II – Materials Mechanics

KOLEGIJI NA STRUČNOM STUDIJU
Materijali
Tehnologija obrade I
Materijali i tehnološki postupci

VOCATIONAL COURSES
Materials
Manufacturing Technology I
Materials and Technological Processes

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU
Izabrana poglavlja iz ispitivanja materijala
Toplinska obrada i inženjerstvo površina
Kemija materijala
Korozija i zaštita metala
Mehanika prijeloma i umorljivost
Procesi oštećivanja materijala

POSTGRADUATE COURSES
Selected Chapters on Material Testing
Heat Treatment and Surface Engineering
Materials Chemistry
Corrosion and Metals Protection
Fracture Mechanics and Fatigue of Materials
Processes of Damaging of Materials

ZNANSTVENOISTRAŽIVAČKI RAD

Znanstvenoistraživački rad iz znanstvenog područja tehničke znanosti, znanstvenih polja strojarstvo i temeljne tehničke znanosti, znanstvenih grana proizvodno strojarstvo i materijali.

RESEARCH AND DEVELOPMENT ACTIVITIES

Research and development activities in the scientific area of Technical Sciences, scientific fields of Mechanical Engineering and Fundamental Engineering Sciences, scientific branches of Mechanical Production Engineering and Materials.

PROJEKTI

Optimiranje parametara i predviđanje rezultata toplinske obrade metala, 069-1201780-2986, MZOŠ, Božo Smoljan, 2007 - 2011, znanstvenoistraživački.

PROJECTS

Optimisation of parameters and prediction of metals heat treatment results, 069-1201780-2986, Ministry of Science, Education and Sports of the Republic of Croatia, Božo Smoljan, 2007.-2011., research and scientific project.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Smoljan, B., Iljkić, D., Novak, H.: Computer simulation of quenched and tempered steel properties, Journal of Achievements in Materials and Manufacturing Engineering, vol. 46, br. 2, str. 175-181, 2010.

Smoljan, B., Iljkić, D.: Simulation of mechanical properties of forged and casted steel 42CrMo4 specimen, Journal of Achievements in Materials and Manufacturing Engineering, vol. 43, br. 2, str. 597-602, 2010.

Smoljan, B., Iljkić, D., Traven, F., Mrša, J.: Mathematical Modeling and Computer Simulation of Fatigue Properties of Quenched and Tempered Steel, Journal of ASTM International, vol. 8, br. 1, 2010.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Smoljan, B., Iljkić, D.: Mathematical modelling and computer simulation of mechanical properties of quenched and tempered steel, 8th International Conference on Industrial Tools and Material Processing Technologies, Ljubljana, Slovenija, 2011.

Smoljan, B., Iljkić, D.: Prediction of mechanical properties of quenched and tempered steel and cast steel, IFHTSE 19th Congress, Glasgow, Velika Britanija, 2011.

Smoljan, B., Iljkić, D., Maretić, M.: Mathematical Modelling of Heat Treatment of Steel, International Scientific and Technical Conference, Mariupol, Ukrajina, 2011.

Smoljan, B., Iljkić, D., Maretić, M.: Prediction of Mechanical Properties of Quenched and Tempered Steel Die, 3rd International Conference on Heat Treatment and Surface Engineering of Tools and Dies, Wels, Austrija, 2011.

Smoljan, B., Iljkić, D., Novak, H.: Prediction of Mechanical Properties Distribution in Quenched and Tempered Steel Specimen, 2nd International Conference Mechanical Technologies And Structural Materials, Split, Hrvatska, 2011.

Smoljan, B., Iljkić, D., Tomašić, N.: Fracture of Steel Casting, International Scientific and Technical Conference "Modern Aspects of Physical Metallurgy and Heat Treatment of Metals", Mariupol, Ukrajina, 2010.

Smoljan, B., Iljkić, D., Tomašić, N., Traven, F.: Fracture of Jaw Arm Made of Cast Steel GS-42CrMo4, International conference "Mechanical Technology and Structural Materials", Split, Hrvatska, 2010.

Smoljan, B., Iljkić, D., Traven, F., Mathematical Modelling and Computer Simulation of Quenched and Tempered Steel Properties, 15th International Metallurgy & Materials Congress, Istanbul, Turska, 2010.

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Bay Zoltan Institute for Materials Science and Technology, Budimpešta, Mađarska.

Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenija.

Faculty of Mechanical Engineering, State University of Campinas, Campinas, Brazil.

Institute of Metals and Technology, Ljubljana, Slovenija.

Materials Engineering, Silesian University of Technology in Gliwice, Gliwice, Poljska.

6.8. ZAVOD ZA MEHANIKU FLUIDA I RAČUNARSKO INŽENJERSTVO / DEPARTMENT OF FLUID MECHANICS AND COMPUTATIONAL ENGINEERING

Predstojnik Zavoda / Department Head:
Red. prof. dr. sc. / Full Prof. D. Sc. Zoran Mrša

URL: http://www.riteh.uniri.hr/ustroj/zmfri/

1. Zoran Čarija
2. Zoran Mrša
3. Senka Maćešić
4. Adrijana Radošević
5. Lado Kranjčević
6. Marko Čavrak
7. Luka Sopta
8. Siniša Družeta
9. Jerko Škifić
10. Stefan Ivić

DJELATNICI

REDOVITI PROFESORI

Senka Maćešić
strujanje u cjevovodima, strujanje u otvorenim vodotocima, optimizacija tehničkih sustava, numeričke metode, programiranje tehničkih aplikacija

Zoran Mrša
strujanja u hidrauličkim strojevima, optimizacija oblika dijelova hidrauličkih strojeva, analiza i optimizacija režima rada hidroelektrana, modeliranje onečišćenja zraka, parametarska optimizacija industrijskih dimnjaka

Luka Sopta
rashladni sustavi termoelektrana, strujanje u priobalnom području, polaganje cjevovoda, strujanje u otvorenim vodotocima, računalne simulacije u tehnici

DOCENTI

Zoran Čarija
strujanja u hidrauličkim strojevima, optimizacija oblika dijelova hidrauličkih strojeva, parametarska optimizacija industrijskih dimnjaka, programiranje tehničkih aplikacija, strujanje s prijenosom topline

Lado Kranjčević
strujanje u otvorenim vodotocima, paralelno programiranje, programiranje tehničkih aplikacija

Siniša Družeta
strujanje sa slobodnom površinom, strujanje u priobalnom području, rashladni sustavi termoelekrana

FACULTY AND STAFF

PROFESSORS

Senka Maćešić
pipe flow, open channel flow, optimization of technical systems, numerical methods, programming technical applications

Zoran Mrša
hydraulic machinery fl ow, hydraulic parts shape optimization, hydropower plant operation analysis and optimization, air quality modelling, optimization of industrial chimneystack parameters

Luka Sopta
thermal power plant cooling systems, coastal fl ow, pipe laying, open channel flow, computer simulations in engineering

ASSISTANT PROFESSORS

Zoran Čarija
hydraulic machinery flow, hydraulic parts shape optimization, optimization of industrial chimneystack parameters, programming technical applications, thermal flow simulations

Lado Kranjčević
open channel flow, parallel programming, programming technical applications

Siniša Družeta
free surface flow, coastal flow, thermal power plant cooling systems

Jerko Škifić
hidraulički tranzijenti, hidraulički udar, programiranje tehničkih aplikacija, računalne simulacije u tehnici, računalna vizualizacija, rashladni sustavi termoelektrana

ZNANSTVENI NOVACI

Marko Čavrak
simulacije strujanja fluida u industrijskim pogonima, modeliranje onečišćenja zraka, parametarska optimizacija industrijskih dimnjaka, programiranje tehničkih aplikacija

Stefan Ivić
programiranje tehničkih aplikacija, polaganje cjevovoda, optimizacija tehničkih sustava

Adrijana Radošević
strujanje u priobalnom području, rashladni sustavi termoelektrana, programiranje tehničkih aplikacija

ADMINISTRATIVNO OSOBLJE

Marija Kura
administrativna tajnica

Jerko Škifić
hydraulic transients, water hammer, programming technical applications, computer simulations in engineering, computer visualisation, thermal power plant cooling systems

JUNIOR RESEARCHERS

Marko Čavrak
industrial flow simulations, air quality modelling, optimization of industrial chimneystack parameters, programming technical applications

Stefan Ivić
programming technical applications, pipe laying, optimization of technical systems

Adrijana Radošević
coastal flow, thermal power plant cooling systems, programming technical applications

ADMINISTRATIVE STAFF

Marija Kura
administrative secretary

NASTAVA

Nastava iz područja: mehanika fluida, hidraulički strojevi, računalne metode, numeričko modeliranje, optimizacija

KOLEGIJI NA SVEUČILIŠNOM PREDDIPLOMSKOM STUDIJU

Hidraulički strojevi
Mehanika fluida
Primjena računala
Primjena računalnih metoda
Računalne simulacije u tehnici

EDUCATION

Lectures in the field of: fl uid mechanics, hydraulic machines, computational methods, numerical modelling, optimization

UNDERGRADUATE COURSES

Hydraulic Machines
Fluid Mechanics
Applied Computers
Applied Computational Methods
Computer Simulations in Engineering

KOLEGIJI NA DIPLOMSKOM SVEUČILIŠNOM STUDIJU

Dinamički sustavi
Dinamika fluida
Modeliranje u tehnici
Numeričko modeliranje hidrauličkih strojeva
Optimizacije u tehnici
Primjena paralelnog računanja
Primjena računalne grafi ke
Programiranje tehničkih aplikacija I
Programiranje tehničkih aplikacija II
Računalom podržano mjerenje
Računalna mehanika fluida
Računalne metode
Računalno inženjerstvo u industriji
Upoznavanje industrijskih postrojenja

KOLEGIJI NA STRUČNOM STUDIJU

Hidraulički strojevi ST
Mehanika fluida ST
Primjena računala ST

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

Dinamika fluida
Hidrodinamika turbostrojeva
Turbulentno strujanje
Modeliranje onečišćenja zraka
Računalna mehanika fl uida
Modeliranje strujanja sa slobodnom površinom
Modeliranje nestacionarnog strujanja u cjevovodu

GRADUATE COURSES

System Dynamics
Fluid Dynamics
Models in Engineering
Numerical Modelling of Hydraulic Machines
Optimization in Technics
Applied Parallel Computing
Applied Computer Graphics
Programming of Technical Applications I
Programming of Technical Applications II
Computer Aided Measurement
Computational Fluid Dynamics
Computational Methods
Computational Engineering in Industry
Insight to Industrial Facilities

VOCATIONAL COURSES

Hydraulic Machines ST
Fluid Mechanics ST
Applied Computers ST

POSTGRADUATE COURSES

Fluid Dynamics
Hydrodynamics of Turbomachines
Turbulent Flow
Air Quality Modeling
Computational Fluid Mechanics
Free Surface Flow Modeling
Unsteady Pipe Flow Modeling

ZNANSTVENOISTRAŽIVAČKI RAD

Rashladni sustavi termoelektrana, strujanje u priobalnom području, strujanje o otvorenim vodotocima, hidraulički tranzijenti, strujanje u cjevovodima, strujanja u hidrauličkim strojevima, optimizacija oblika dijelova hidrauličkih strojeva, analiza i optimizacija režima rada hidroelektrana, modeliranje onečišćenja zraka, parametarska optimizacija industrijskih dimnjaka

RESEARCH AND DEVELOPMENT ACTIVITIES

Thermal power plant cooling systems, coastal fl ow, open channel fl ow, hydraulic transients, pipe fl ow, hydraulic machinery fl ow, hydraulic parts shape optimization, hydropower plant operation analysis and optimization, air quality modelling, optimization of industrial chimneystack parameters

PROJEKTI

Numeričko modeliranje i optimizacija strujanja fluida, 069-0693014-3015, MZOŠ, Luka Sopta, 2007. – 2011., znanstvenoistraživački.

Superračunalne simulacije u zaštiti okoliša i obnovljivim izvorima energije, 069-0693014-3013, MZOŠ, Zoran Mrša, 2007. – 2011., znanstvenoistraživački.

PROJECTS

Fluid flow numerical modeling and optimization, 069-0693014-3015, Ministry of Science, Education and Sports of the Republic of Croatia, Luka Sopta, 2007– 2011, research and scientifi c project.

Supercomputer simulations in evironment protection and sustainable energy sources, 069-0693014-3013, MZOŠ, Zoran Mrša, 2007-2011, research and scientific project.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Čarija, Z., Franković, B., Fućak S.: Heat Transfer Analysis of Fin-and-Tube Heat Exchanger Using Fluid-Solid Interaction, Proceedings of the International Congress Energy and the Environment 2010, Engineering for a Low-Carbon Future, vol. II, Manificat, A., Thonon, B. (ur.), Association GREТh i Hrvatski savez za sunčevu energiju, str. 199-208, Rijeka, 2010.

Čarija, Z., Pavković, B., Franković, B.: Numerical Study of Air-Flow and Heat Transfer Inside a Sports Hall, Strojarstvo: časopis za teoriju i praksu u strojarstvu, 52, 5; str. 569-576, 2010.

Sopta, L., Družeta, S., Holjević, D.: Analiza posljedica poplavnog vala nastalog prolomom velike brane, Građevinar 63, 8, str. 741-748, Hrvatski savez građevinskih inženjera, Zagreb, 2011.

Šnjirić, D., Čarija, Z., Braut, A., Kovačević, M., Halaji, A, Kuiš, D., Glavičić, S.: Endodontic irrigation with two different needles; computional fluid dynamics analysis based on an ex vivo model, ESE Rome 2011, Not only Roots, Abstracts / Dummer, PMH (ur.), European Society of Endodontics, Rim, Italija, 2011.

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

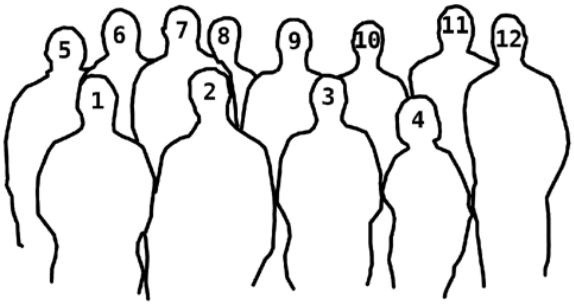
Sveučilište u Mostaru, Bosna i Hercegovina/Bosnia and Herzegovina

6.9. ZAVOD ZA RAČUNARSTVO / DEPARTMENT OF COMPUTER ENGINEERING

Predstojnik Zavoda / Department Head:
Doc. dr. sc. / Assist. Prof. D. Sc. Kristijan Lenac
Doc. dr. sc. / Assist. Prof. D. Sc. Miroslav Joler (do / until 25.02.2011.)

URL: http://www.riteh.uniri.hr/ustroj/zr/

1. Sandi Ljubić
2. Goran Mauša
3. Tihana Galinac Grbac
4. Nerina Čugelj
5. Miroslav Joler
6. Antun Sok
7. Željko Jeričević
8. Mladen Tomić
9. Kristijan Lenac
10. Ivan Štajduhar
11. Damir Malnar
12. Damir Arbula



DJELATNICI

REDOVITI PROFESORI

Ivo Ipšić
umjetna inteligencija, raspoznavanje uzoraka, govorne tehnologije

IZVANREDNI PROFESORI

Željko Jeričević
znanstveno računanje, bioračunarstvo, razvoj algoritama, digitalna obrada slika

DOCENTI

Tihana Galinac Grbac
programsko inženjerstvo, meko računarstvo, inženjerski menadžment, informacijsko-komunikacijske tehnologije

Miroslav Joler
bežične komunikacije, računalni elektromagnetizam, biomedicinske aplikacije elektromagnetizma, mobilne aplikacije

Kristijan Lenac
mobilna robotika, operacijski sustavi, razvoj algoritama, ugradbeni sustavi

PROFESORI VISOKE ŠKOLE

Antun Sok
računalstvo, informatika, informacijska tehnologija, ICT edukacija

VIŠI ASISTENTI

Ivan Štajduhar
umjetna inteligencija, strojno učenje

Mladen Tomić
digitalna obrada signala i slike, teorija valića, filtarski slogovi

FACULTY AND STAFF

PROFESSORS

Ivo Ipšić
artificial intelligence, pattern recognition, speech technologies

ASSOCIATE PROFESSORS

Željko Jeričević
scientific computing, biocomputing, algorithm development, digital image processing

ASSISTANT PROFESSORS

Tihana Galinac Grbac
software engineering, soft computing, engineering management, information-communication technologies

Miroslav Joler
wireless communications, computational electromagnetics, biomedical applications of electromagnetics, applications for mobile

Kristijan Lenac
mobile robotics, operating systems, algorithm development, embedded systems

COLLEGE PROFESSOR

Antun Sok
computer science, informatics, information technology, ICT education

SENIOR ASSISTANTS

Ivan Štajduhar
artificial intelligence, machine learning

Mladen Tomić
digital signal and image processing, wavelets and filter banks

ASISTENTI

Damir Arbula
bežične mreže osjetila, raspodijeljeni algoritmi, lokalizacija

Sandi Ljubić
interakcija čovjeka i računala, razvoj aplikacija za mobilne uređaje, sustavi e-učenja i m-učenja

Zoran Nebić
sustavi e-učenja, evolucijsko računalstvo, otkrivanje znanja u podacima

Damir Nemčanin
e-učenje, umjetna inteligencija, informacijski sustavi

ASSISTANTS

Damir Arbula
wireless sensor networks, distributed algorithms, localization

Sandi Ljubić
human–computer interaction (HCI), mobile device applications development, e-learning and m-learning systems

Zoran Nebić
e-learning, evolutionary computing, data mining

Damir Nemčanin
e-learning, artificial intelligence, information systems

ZNANSTVENI NOVACI

Damir Malnar
vremenskofrekvencijske distribucije, prepoznavanje uzoraka, ugradbeni sustavi

Goran Mauša
umjetna inteligencija, neuronske mreže, meko računarstvo

JUNIOR RESEARCHERS

Damir Malnar
time-frequency distributions, pattern recognition, embedded systems

Goran Mauša
artificial intelligence, neural networks, soft computing

ADMINISTRATIVNO OSOBLJE

Nerina Čugelj
Natalija Forgić (do 28.3.2011.)
administrativna tajnica

ADMINISTRATIVE STAFF

Nerina Čugelj
Natalija Forgić (until 28.03.2011.)
administrative secretary

VANJSKI SURADNICI

Red. prof. dr. sc. Nikola Pavešić / Fakulteta za elektrotehniko, Ljubljana
komunikacija čovjek-stroj

Prof. v. š., Predrag Domijan
građa računala

Pred. Irena Jurdana
svjetlovodne mreže

ASSOCIATES

Prof. D. Sc. Nikola Pavešić / Faculty of Electrical Engineering, Ljubljana
Human-Machine Interaction

College Prof. Predrag Domijan
Computer Architecture

Lect. Irena Jurdana
Optical Networks

NASTAVA

Nastava se izvodi iz područja računalnog i komunikacijskog inženjerstva koja uključuju tehnike programiranja, programske jezike, operacijske sustave, baze podataka, testiranje koda, razvoj algoritama, računalne mreže, radiokomunikacije, svjetlovodne mreže i telekomunikacijske uređaje.

KOLEGIJI NA PREDDIPLOMSKOM SVEUČILIŠNOM STUDIJU

Algoritmi i strukture podataka
Baze podataka
Dijagnostičke metode u medicini I
Dijagnostičke metode u medicini II
Građa računala
Informacijski sustavi
Operacijski sustavi
Osnove znanstvenog računanja
Primjena računala R
Programsko inženjerstvo
Programiranje
Računalne mreže
Razvoj web-aplikacija
Ugradbeni računalni sustavi
Uvod u računalstvo

KOLEGIJI NA DIPLOMSKOM SVEUČILIŠNOM STUDIJU

Građa računala
Komunikacija čovjek-stroj
Radiokomunikacije

KOLEGIJI NA STRUČNOM STUDIJU

Digitalna računala
Informacije i komunikacije
Primjena računala ST
Računalne mreže ST
Radiokomunikacije
Svjetlovodne mreže
Telekomunikacijski uređaji i mreže

EDUCATION

The teaching covers the fields of computerand communication - engineering, comprising programming techniques and languages, operating systems, databases, algorithm development and testing, computer networks, artifi cial intelligence, radiocommunications, optical- and telecommunication - networks and devices.

UNIVERSITY PROGRAM UNDERGRADUATE COURSES

Algorithms and Data Structures
Databases
Diagnostic Methods in Medicine I
Diagnostic Methods in Medicine II
Computer Architecture
Information Systems
Operating Systems
Foundations of Scientific Computation
Applied Computing R
Software Engineering
Programming
Computer Networks
Web Applications Development
Embedded Systems
Introduction to Computer Engineering

UNIVERSITY PROGRAM GRADUATE COURSES

Computer Architecture
Human-Machine Interaction
Radiocommunications

VOCATIONAL PROGRAM COURSES

Digital Computers
Information and Communication
Applied Computing ST
Computer Networks ST
Radiocommunications ST
Optical Networks
Telecommunication Devices and Networks

ZNANSTVENOISTRAŽIVAČKI RAD

Algoritmi u obradi informacija i biomedicini, interakcija čovjeka i stroja, računalni elektromagnetizam, bežične komunikacije, upravljanje u programskom inženjerstvu, kvaliteta programskog proizvoda, pouzdanost i performanse mreža, meko računarstvo, mobilna robotika.

RESEARCH AND DEVELOPMENT ACTIVITIES

Algorithms in information processing and life sciences, human-computer interaction, computational electromagnetics, wireless communications, software engineering management, software quality, network reliability and performance.

PROJEKTI

Nove arhitekture i protokoli u konvergentnim telekomunikacijskim mrežama, Ministarstvo znanosti, obrazovanja i športa, suradnik: Tihana Galinac Grbac, br. Projekta 071-0362027-2329, voditelj: Darko Huljenić

Optimizacija i dizajn vremensko-frekvencijskih distribucija, Ministarstvo znanosti, obrazovanja i športa, suradnici: Tihana Galinac Grbac, Goran Mauša, br. Projekta 069-0362214-1575, voditelj: Viktor Sučić

Klasifikacija proteina metodama eigenanalize, 062-0000000-3179, Ministarstvo znanosti, obrazovanja i športa, Željko Jeričević, 2008 - 2011, znanstvenoistraživački projekt

Razvoj matematickih metoda za opis strukture, dinamike i reaktivnosti molekula, 098-0982915-2942, Ministarstvo znanosti, obrazovanja i športa, D. Babić, suradnik Željko Jeričević, 2008 - 2011; znanstvenoistraživački projekt

Višefunkcijske antene u komunikacijskim i radarskim sustavima, Ministarstvo znanosti, obrazovanja i športa Republike Hrvatske, suradnik: Miroslav Joler, br. projekta: 036-0361566-1573, voditelj: Juraj Bartolić.

PROJECTS

New architecture and Protocols in Converged Telecommunication Networks, Ministry of Science, Education, and Sports, collaborator: Tihana Galinac Grbac, project no: 071-0362027-2329, senior researcher: Darko Huljenić

Optimisation and design of time-frequency distributions, Ministry of Science, Education, and Sports, collaborators: Tihana Galinac Grbac, Goran Mauša, project no: 069-0362214-1575, senior researcher: Viktor Sučić

Protein Classifi cation using Eigen-Analysis Methods, 062-0000000-3179, Ministry of Science, Education, and Sports, Željko Jeričević, 2008-2011, scientific research project.

Mathematical description molecular structure, dynamics and reactivity, Ministry of Science, Education, and Sports, D. Babić, collaborator: Željko Jeričević, 2008-2011, scientific research project.

Multifunctional Antennas in Communication and Radar Systems, Ministry of Science, Education, and Sports, collaborator: Miroslav Joler, project no.: 036-0361566-1573, PI: Juraj Bartolić

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Galinac Grbac, T., Huljenić, D.: Defect Detection Effectiveness and Product Quality in Global Software Development, Lecture Notes in Computer Science, ISSN : 0302-9743, vol. 6759, str. 113-127, 2011.

Glavinic, V., Ljubic, S., Kukec, M.: Supporting Universal Usability of Mobile Software: Touchscreen Usability Meta-Test, Lecture Notes in Computer Science, vol. 6767, str. 26-35, 2011.

Glavinic, V., Ljubic, S., Kukec, M.: Model of a Touchscreen Interaction Benchmark Test Supporting Usability Awareness in Mobile Application Development Process, Lecture Notes in Computer Science, vol. 6389, str. 505-508, 2011.

Štajduhar, I., Dalbelo Bašić, B.: Learning Bayesian networks from survival data using weighting censored instances, Journal of Biomedical Informatics, vol. 43, br. 4, str. 613-622

Žuvić-Butorac, M., Nebić, Z., Nemčanin, D., Mikac, T., Lučin, P.: Establishing an Institutional Framework for an E-learning Implementation – Experiences from the University of Rijeka, Croatia, Journal of Information Technology Education, vol. 10, str. 43-56, 2011.

Žuvić-Butorac, M., Rončević, N., Nemčanin, D., Nebić, Z.: Blended E-Learning in Higher Education: Research on Students' Perspective, Issues in Informing Science and Information Technology, vol. 8, str. 409-429, 2011.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Grgurina, R., Brestovac, G., Galinac Grbac, T.: Development environment for Android application development: An experience report, MIPRO 2011, str. 1693-1698, Opatija, Hrvatska, 2011.

POZVANA PREDAVANJA / INVITED LECTURES

Jeričević, Ž.: Otvoreni novi svijet, Konferencija Linux korisnika, 2010.
Lenac, K.: Subversion sustav za upravljanje inačicama, Konferencija Linux korisnika, 2010.

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Mälardalen University, School of Innovation, Design and Engineering, Švedska

University of New Mexico, Electrical and Computer Engineering Department, Albuquerque, NM, USA/SAD

University of Sao Paulo, Telecommunications and Control Engineering Department, Sao Paulo, Brasil/Brazil

University of Trieste, Department of Electrical and Electronics Engineering, Trieste, Italy/Italija

University of Nantes, Polytech Nantes, Nantes, France/Francuska

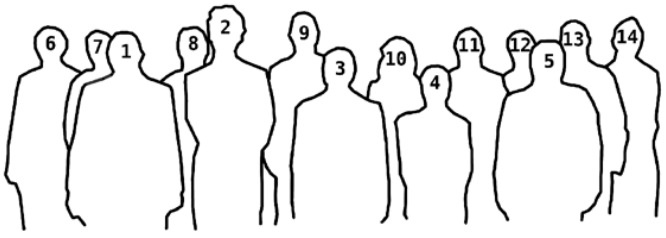
Indian Institute of Technology at Roorkee, India/Indija

6.10. ZAVOD ZA TEHNIČKU MEHANIKU / DEPARTMENT OF ENGINEERING MECHANICS

Predstojnik Zavoda / Department Head:
Red. prof. dr. sc. / Full Prof. D. Sc. Josip Brnić

URL: http://www.riteh.uniri.hr/ustroj/ztm/

1. Roberto Žigulić
2. Marko Čanađija
3. Josip Brnić
4. Natalija Forgić
5. Goran Turkalj
6. Edin Merdanović
7. Igor Pešić
8. Ante Skoblar
9. Goran Vukelić
10. Goranka Štimac
11. Sanjin Braut
12. Sanjin Kršćanski
13. Domagoj Lanc
14. Marino Brčić



DJELATNICI

REDOVITI PROFESORI

Josip Brnić
statika, nauka o čvrstoći, metoda konačnih elemenata, optimalni dizajn konstrukcija

Marko Čanađija
statika, metoda konačnih elemenata, termomehanika, eksperimentalna ispitivanja u mehanici konstrukcija i strojeva

Goran Turkalj
nauka o čvrstoći, mehanika konstrukcija, stabilnost konstrukcija, tankostjene konstrukcije

Roberto Žigulić
kinematika, dinamika, dinamika strojeva i robota, mehatronika, eksperimentalna ispitivanja u mehanici konstrukcija i strojeva

IZVANREDNI PROFESORI

Sanjin Braut
kinematika, dinamika, vibracije, regulacija i upravljanje dinamičkim sustavima, trajnost strojeva i konstrukcija

Domagoj Lanc
teorija elastičnosti i plastičnosti, čvrstoća, tankostjene konstrukcije, mehanika konstrukcija, stabilnost konstrukcija

ASISTENTI

Ante Skoblar
kinematika, dinamika, vibracije, akustika

ZNANSTVENI NOVACI

Marino Brčić
statika, nauka o čvrstoći, labor. vježbe, metoda konačnih elemenata, eksperimentalna ispitivanja u mehanici konstrukcija i strojeva

FACULTY AND STAFF

PROFESSORS

Josip Brnić
statics, strength of materials, finite element method, optimal design of structures

Marko Čanađija
statics, finite element method, thermomechanics, experimental methods in mechanics of structures and machines

Goran Turkalj
strength of materials, structural mechanics, structural stability, thin-walled structures

Roberto Žigulić
kinematics,dynamics, dynamics of robots and machines, mechatronics, experimental testing of structures and machines

ASSOCIATE PROFESSORS

Sanjin Braut
kinematics, dynamics, vibration, dynamic system control, durability of machines and structures

Domagoj Lanc
theory of elasticity and plasticity, strength of materials, thin-walled structures, structural mechanics, structural stability

ASSISTANTS

Ante Skoblar
kinematics, dynamics, vibration, acoustics

JUNIOR RESEARCHERS

Marino Brčić
statics, strength of materials, labor. exercises, finite element method, experimental methods in mechanics of structures and machines

Sanjin Kršćanski
statika, nauka o čvrstoći, mehanika i elementi konstrukcija, labor. vježbe.

Edin Merdanović
statika, čvrstoća, mehanika i elementi konstrukcija, labor. vježbe

Neven Munjas
statika, termomehanika, nauka o čvrstoći

Igor Pešić
statika, čvrstoća, mehanika i elementi konstrukcija, labor. vježbe

Goranka Štimac
kinematika, dinamika, regulacija, aktivni magnetski ležajevi

Goran Vukelić
statika, nauka o čvrstoći, optimalni dizajn konstrukcija, mehanika i elementi konstrukcija, labor. vježbe

ADMINISTRATIVNO OSOBLJE

Natalija Forgić
administrativna tajnica

VANJSKI SURADNICI

Red. prof. dr. sc. Ivo Alfirević / FSB Zagreb
strojarstvo, tehnička mehanika

Red. prof. dr. sc. Franc Kosel / Fakulteta za strojništvo, Ljubljana
strojarstvo, tehnička mehanika, čvrstoća, elastoplastomehanika

Red. prof. dr. sc. Ivica Kožar / Građevinski fakultet, Rijeka
strojarstvo, tehnička mehanika

Sanjin Kršćanski
statics, strength of materials, mechanics and structural elements, labor. exercises.

Edin Merdanović
statics, strength of materials, mechanics and structural elements, labor. exercises

Neven Munjas
statics, thermomechanics, strength of materials

Igor Pešić
statics, strength of materials, mechanics and structural elements, labor. exercises

Goranka Štimac
kinematics,dynamics, control, active magnetic bearings

Goran Vukelić
statics, strength of materials, optimal design of structures, mechanics and structural elements, labor. exercises

ADMINISTRATIVE STAFF

Natalija Forgić
administrative secretary

ASSOCIATES

Prof. D. Sc. Ivo Alfirević / FSB Zagreb
Mechanical Engineering, Engineering Mechanics

Prof. D. Sc. Franc Kosel / Fakulteta za strojništvo, Ljubljana
Mechanical Engineering, Engineering Mechanics, Strength of Materials, Elasto-Plastomechanics

Prof. D. Sc. Ivica Kožar / Građevinski fakultet, Rijeka
Mechanical Engineering, Engineering Mechanics

Red. prof. dr. sc. Stojan Kravanja / Fakulteta za gradbeništvo, Univerza v Mariboru
tehnička mehanika, optimizacija konstrukcija

Red. prof. dr. sc. Iztok Potrč / Fakulteta za strojništvo, Maribor
strojarstvo, konstrukcije

Izv. prof. dr. sc. Miha Boltežar / Fakulteta za strojništvo, Ljubljana
strojarstvo, dinamika konstrukcija

Izv. prof. dr. sc. Nenad Gubeljak / Fakulteta za strojništvo, Maribor
strojarstvo, konstrukcije, mehanika loma

Prof. D. Sc. Stojan Kravanja / Fakulteta za gradbeništvo, Univerza v Mariboru
Engineering Mechanics, Structural Optimization

Prof. D. Sc. Iztok Potrč / Fakulteta za strojništvo, Maribor
Mechanical Engineering, Structures

Assoc. Prof. D. Sc. Miha Boltežar / Fakulteta za strojništvo, Ljubljana
Mechanical Engineering, Structure dynamics

Assoc. Prof. D. Sc. Nenad Gubeljak / Fakulteta za strojništvo, Maribor
Mechanical Engineering, Structures, Fracture Mechanics

NASTAVA

Nastava se izvodi iz područja primijenjene mehanike. Ta područja uključuju: statiku, čvrstoću i dinamiku krutih i deformabilnih tijela, zatim stabilnost, vibracije, mehaniku konstrukcija, tankostjene konstrukcije, termomehaniku i optimizaciju konstrukcija. Analiza konstrukcija u spomenutim se područjima provodi analitički, numerički i eksperimentalno.

KOLEGIJI NA PREDDIPLOMSKOM SVEUČILIŠNOM STUDIJU

Statika
Kinematika
Dinamika
Nauka o čvrstoći I
Mehanika i elementi konstrukcija
Osnove primjene metode konačnih elemenata (MKE)

EDUCATION

Courses are running in the field of applied mechanics. This includes courses in the fields of statics, strength of materials and dynamics of rigid and deformable bodies as well as theory of stability, vibration, structure mechanics, thin-walled structures, termomechanics and optimal structural design. Structural analysis is carried out analytically, numerically and experimentally.

UNDERGRADUATE COURSES

Statics
Kinematics
Dynamics
Strength of Materials I
Mechanics and Structural Elements
Introduction to Finite Element Method (FEM)

KOLEGIJI NA DIPLOMSKOM SVEUČILIŠNOM STUDIJU

Dinamika strojeva i robota
Eksperimentalna ispitivanja u mehanici konstrukcija i strojeva
Elastomehanika i plastomehanika
Mehanika konstrukcija
MKE u mehanici čvrstog tijela
Nauka o čvrstoći II
Optimalni dizajn konstrukcija
Regulacija i upravljanje dinamičkim sustavima
Stabilnost konstrukcija
Tankostjene konstrukcije
Termomehanika
Trajnost strojeva i konstrukcija
Vibracije

KOLEGIJI NA STRUČNOM STUDIJU

Čvrstoća
Mehanika I
Mehanika II
Mehanika i elementi konstrukcija ST
Stručna praksa I
Stručna praksa II

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

Elastomehanika i plastomehanika
MKE i optimizacija konstrukcija
Viskoelastičnost i viskoplastičnost
Stabilnost konstrukcija
Nelinearna analiza konstrukcija
Tankostjene konstrukcije
Kontaktna mehanika
IP iz termomehanike
Računalno modeliranje plastičnog oblikovanja metala
Vibracije i trajnost strojeva i konstrukcija
Mehatronika u strojarstvu
Kinematika i dinamika robota
Zaštita od buke i vibracija strojeva i konstrukcija

GRADUATE COURSES

Dynamics of Machines and Robots
Experimental Testing in Mechanics of Structures and Machines
Elasto-Plastomechanics
Structural Mechanics
FEM in Solid Mechanics
Strength of Materials II
Optimal Design of Structures
Dynamic Systems Control
Structural Stability
Thin-Walled Structures
Thermomechanics
Durability of Machines and Structures
Vibration

VOCATIONAL COURSES

Strength of Materials
Mechanics I
Mechanics II
Mechanics and Structural Elements ST
Professional practice I
Professional practice II

POSTGRADUATE (DOCTORAL) COURSES

Elastomechanics and Plastomechanics
FEM and Structural Optimization
Viscoelasticity and Viscoplasticity
Structural Stability
Nonlinear Structural Analysis
Thin-Walled Structures
Contact Mechanics
Advanced Thermomechanics
Computer Modeling of Metal Forming Plasticity
Vibrations and Durability of Machines and Structures
Mechatronics in Mechanical Engineering
Kinematics and Dynamics of Robots
Protection against Noise and Vibrations of Machines and Structures

ZNANSTVENOISTRAŽIVAČKI RAD

Primijenjena mehanika: numerička analiza konstrukcija i strojeva, eksperimentalna mehanika, optimalni dizajn konstrukcija, stabilnost konstrukcija, vibracije, vibroakustika, dinamika strojeva i konstrukcija, mehatronika, termomehanika, nanomehanika.

RESEARCH AND DEVELOPMENT ACTIVITIES

Applied mechanics: numerical analysis of structures and machines, experimental mechanics, optimal structural design, structural stability, vibrations, vibroacoustics, dynamics of structures and machines, mechatronics, termomechanics, nanomechanics.

PROJEKTI

Mjerenje vibracija na više elektromotora smještenih u INA - Rafinerija nafte Rijeka, Urinj b.b., RN 33-014/10, Siemens d.d., Roberto Žigulić, 2010. – 2010., elaborat.

Redukcija vibracija i buke mehatroničkim pristupom, 069-0691736-1733, MZOŠ, Roberto Žigulić, 2007. – 2012., znanstvenoistraživački.

PROJECTS

Vibration measurement on the several electric motors located in INA d.d. company, Urinj plant, RN 33-014/10, Siemens d.d., Roberto Žigulić, 2010 - 2010, study.

Mechatronic Approach to the Reduction of Machinery Vibration and Noise, 069-0691736-1733, Ministry of Science, Education and Sports of the Republic of Croatia, Roberto Žigulić, 2007- 2012, research and scientific project.

Numerička analiza odziva konstrukcija za određena područja eksploatacije, 069-0691736-1737, MZOŠ, Josip Brnić, 2007. -2012., znanstvenoistraživački.

Konačnoelementni modeli za analizu stabilnosti grednih konstrukcija, 069-0691736-1731, MZOŠ, Goran.Turkalj, 2007. -2012., znanstvenoistraživački.

Ponašanje metalnih legura pri različitim okolišnjim uvjetima: testiranja i numeričke simulacije, MP-06, MZOŠ, Ministarstvo znanosti NR Kine, Josip Brnić i Jitai Niu, 2009. -2011., bilateralni/ znanstvenoistraživački.

Ekološki prihvatljivo korištenje energije, 991111, ASO - Austrijski ured za inicijaciju suradnje u znanosti i istraživanju, suradnik Sanjin Braut, 2008. - 2009., znanstvenoistraživački.

Dinamika temelja turboagregata snage 21 MW u INA RNR Urinj, RN 33-026/09, Tehnokom d.o.o. Roberto Žigulić, 2009., elaborat

Eksperimentalne analize elastoplastičnih osobina materijala cilindara motora (epruvete) : Zavod za tehničku mehaniku -Tvornica motora 3. Maj, kontinuirana ispitivanja

Statičko i dinamičko ispitivanje viljuške injektora: Zavod za tehničku mehaniku - Cimos d.d.

Numerical analysis of structural response for particular service conditions, 069-0691736-1737, Ministry of Science, Education and Sports of the Republic of Croatia, Josip Brnić, 2007- 2012, research and scientific project.

Finite element models for stability analysis of beam-type structures, 069-0691736-1731, Ministry of Science, Education and Sports of the Republic of Croatia, Goran Turkalj, 2007-2012, research and scientific project.

Metal alloys behavior at different environmental conditions: testing and numerical simulations, MP-06, Ministry of Science, Education and Sports of the Republic of Croatia and Ministry of Science and Technology of the People's Republic of China, Josip Brnić and Jitai Niu, 2009- 2011, bilateral/ research and scientific project.

Environmentally Usage of Power, 991111, ASO - Austrian Science and Research Liaison Offi ce, partner Sanjin Braut, 2008- 2009, research and scientifi c project.

Dynamics of Turbine Generator Foundation, 21 MW located in INA RNR Urinj, RN 33-026/09, Tehnokom d.o.o. Roberto Žigulić, 2009, study

Experimental analyses of material mechanical properties for machines, Department of Engineering Mechanics, Faculty of Engineering - Shipyard "3. Maj", continuous investigations.

Static and dynamic testing of injector parts, Department of Engineering Mechanics, Faculty of Engineering – Cimos d.d.

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Brnić, J., Čanađija, M., Turkalj, G., Lanc, D.: Behavior of S355JO Steel Subjected to Uniaxial Stress at Lowered and Elevated Temperatures and Creep, Bulletin of materials science, ISSN 0250-4707, vol. 33, br. 4; 475-481, Bangalore, 2010.

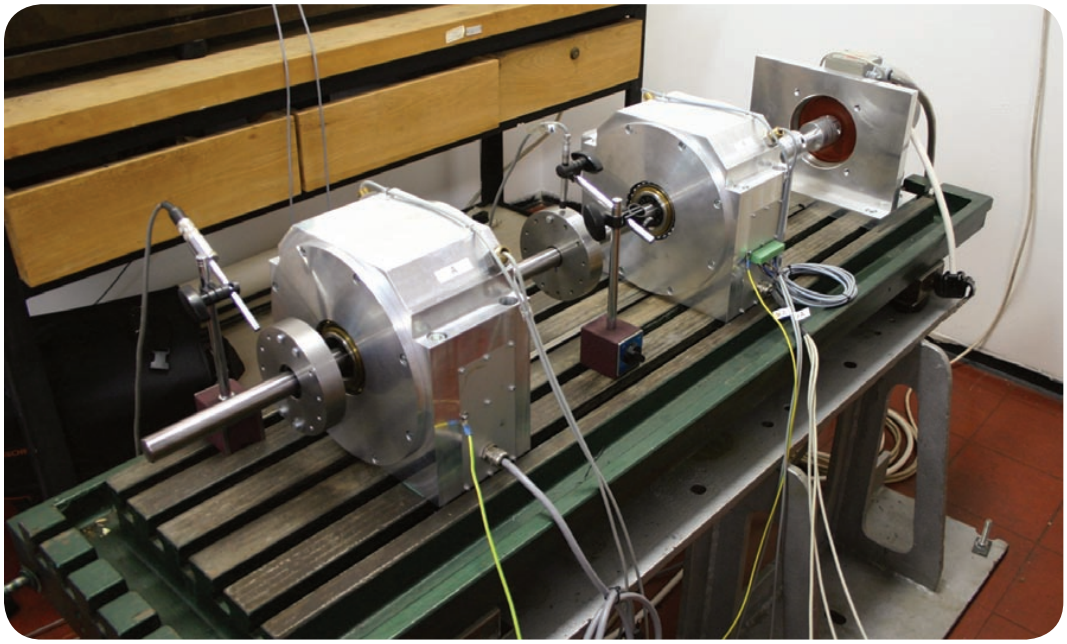
Brnić, J., Čanađija, M., Turkalj, G., Lanc, D., Brčić, M., Vukelić, G.: Effect of Elevated Temperatures on Behavior of Structural Steel 50CrMo4, High temperature materials and processes, ISSN 0334-6455, vol. 30, dio 1/2, str. 121-125, Berlin, 2011.

Brnić, J., Niu, J., Turkalj, G., Čanađija, M., Lanc, D.: Behavior of HSLA A709 Steel at Different Environmental Conditions, Journal of Wuhan University of Technology-Materials Science Edition, ISSN 1000-2413, vol. 25, br. 6; str. 897-902, Wuhan, 2010.

Čanađija, M., Mosler, J.: On the thermomechanical coupling in finite strain plasticity theory with non-linear kinematic hardening by means of incremental energy minimization, International journal of solids and structures, ISSN 0020-7683, vol. 48, dio 7/8, str. 1120-1129, 2011.

Štimac, G., Braut, S., Žigulić, R.: Vibration Suppression of a Flexible Rotor Using Active Magnetic Bearings (AMB), Transactions of FAMENA, ISSN 1333-1124, vol. 35-3, str. 27-38, Zagreb, 2011.

Turkalj, G., Brnić, J., Kravanja, S.: A beam model for large displacement analysis of flexibly connected thin-walled beam-type structures, Thin-walled structures, ISSN 0263-8231, vol. 49, br. 8; str. 1007-1016, 2011.



MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Braut, S., Žigulić, R., Štimac, G., Skoblar, A., Butković, M: Structural Optimization with Frequency Constraint of the Reinforced Concrete Columns of the Spring Mounted Turbine Generator Foundation, Proceedings of the 13th World Congress in Mechanism and Machine Science/ Ricardo Chicurel-Uziel, CD-ROM, Guanajuato, Meksiko, 2011.

Brnić, J.: Properties Comparison of Two Constructural Steels: ASTM A505 and ASTM A709, Annals of DAAAM for 2010 Proceedings, Katalinić, B. (ur.), DAAAM International Vienna, ISSN 1726-9679, str. 85-86, Beč, Austrija, 2010.

Brnić, J.: Structural Steels S355JO and 50CrMo4:Comparison of their Mechanical Properties, Creep Behavior and Fracture Toughness, International Conference on Innovative Technologies, IN-TECH 2010, Kudlaček, J., Barišić, B., Velay, X., Ohkura, K. (ur.), Tisk AS, s.r.o. Jaromer, ISBN 978-80-904502-2-6, str. 612-615, Brno, Češka, 2010.

Brnić, J., Turkalj, G., Čanađija, M., Lanc, D.: X17CrNi16-2 Martensitic Stainless Steel – Temperature Dependency of Material Properties, Short - Time Creep Behavior and Fracture Toughness Assessment, Proceedings of ICPNS 2010, Niu, J. (ur.), Chinese Mechanical Engineering Society, Guilin, Kina, 2010.

Čanađija, M., Mosler, J.: A variationally consistent approach for non-associative thermoplasticity at finite strain, XI International Conference on Computational Plasticity. Fundamentals and Applications - COMPLAS XI, ISBN 978-84-89925-23-6, Barcelona, Španjolska, 2011.

Lanc, D., Pešić, I., Turkalj, G., Brnić, J.: FE model for composite beam-type structure buckling analysis, Proceedings of ICPNS 2010, Niu, J. (ur.), Chinese Mechanical Engineering Society, Guilin, Kina, 2010.

POZVANA PREDAVANJA / INVITED LECTURES

Brnić, J.: Material Properties, Creep Behavior and Modelling, Fracture Tughness - AISI 431 Martensitic Steel, School of Materials Science, Henan Polytechnic University, China, 20.09.2011.

Brnić, J.: Shear Stress Analysis in Engineering Beams Using Special Quadrilateral Finite Elements, School of Materials Science, Henan Polytechnic University, China, 20.09.2011.

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

Civil Engineering Faculty, University of Maribor, Slovenia/Slovenija

HZG Forschungszentrum, Geesthacht, Germany/Njemačka

Harbin Institute of Technology, Harbin, China/Kina

Interuniversity Network in Central Europe, PAMM-Centre, Budapest University of Technology and Economics, Budapest/Budimpešta, Hungary/Mađarska

Structural Stability Research Council (SSRC), Missouri University of Science and Technology, Rolla, MO, USA/SAD

Technische Universität Darmstadt, FB Maschinenbau, Fachgebiet Mechatronik im Maschinenbau, Darmstadt, Germany/Njemačka

School of Materials Science and Engineering, Henan Polytechnic University, Jiaozuo, China/Kina

Transilvania University of Brasov, Faculty of Mechanical Engineering, Brasov, Romania/Rumunjska

6.11. ZAVOD ZA TERMODINAMIKU I ENERGETIKU / DEPARTMENT OF THERMODYNAMICS AND ENERGY ENGINEERING

Predstojnik Zavoda / Department Head:
Red. prof. dr. sc. / Full Prof. D. Sc. Bernard Franković

URL: http://www.riteh.uniri.hr/ustroj/zte/

1. Zmagoslav Prelec
2. Branimir Pavković
3. Špiro Milošević
4. Ivan Viličić
5. Bernard Franković
6. Branko Staniša
7. Vladimir Medica
8. Boris Delač (vanjski suradnik)
9. Radojka Praprotnik
10. Anica Trp
11. Katarina Knafelj (vanjska suradnica)
12. Igor Bonefačić
13. Sanjin Fućak
14. Kristian Lenić
15. Viktor Dragičević
16. Ozren Bukovac
17. Tomislav Mrakovčić
18. Igor Wolf
19. Tomislav Senčić
20. Paolo Blecich
21. Vedran Mrzljak

DJELATNICI

REDOVITI PROFESORI

Bernard Franković
termodinamika, izmjenjivači topline, plinska tehnika, obnovljivi izvori energije

Vladimir Medica
motori s unutarnjim izgaranjem, toplinski strojevi, brodski pogonski strojevi, numeričko modeliranje, numeričke simulacije izgaranja

Špiro Milošević
(professor emeritus)

Branimir Pavković
tehnika hlađenja, mjerenja u termotehnici, kompresori, procesna oprema, dizalice topline, energetska učinkovitost, obnovljivi izvori energije

Zmagoslav Prelec
energetski sustavi, energetski i procesni uređaji, inženjerstvo zaštite okoliša

Branko Staniša
energetika, toplinske turbine, energetska postrojenja

Anica Trp
termodinamika, izmjenjivači topline, numeričko modeliranje prijenosa topline i tvari, obnovljivi izvori energije

Ivan Viličić
termotehnička oprema i sustavi, toplinska ugodnost, kvaliteta zraka u prostoru, obnovljivi izvori energije, centralni sustavi nadzora i upravljanja, optimizacija sustava

IZVANREDNI PROFESORI

Kristian Lenić
termodinamika, izmjenjivači topline, numeričko modeliranje prijenosa topline i tvari, obnovljivi izvori energije

FACULTY AND STAFF

PROFESSORS

Bernard Franković
thermodynamics, heat exchangers, gas technology, renewable energy sources

Vladimir Medica
internal combustion engines, heat engines, ship propulsion machinery, numerical modelling, numerical simulations of combustion

Špiro Milošević
(Professor Emeritus)

Branimir Pavković
refrigeration, thermal measurements, compressors, process equipment, heat pumps, energy efficiency, renewable energy sources

Zmagoslav Prelec
energy systems, energy and process facilities, environmental engineering

Branko Staniša
energetrics, heat turbines, energy plants

Anica Trp
thermodynamics, heat exchangers, numerical modeling of heat and mass transfer, renewable energy sources

Ivan Viličić
thermo-technical equipment and systems, thermal comfort, indoor air quality, renewable energy sources, central management and control systems, system optimization

ASSOCIATE PROFESSORS

Kristian Lenić
thermodynamics, heat exchangers, numerical modeling of heat and mass transfer, renewable energy sources

Tomislav Mrakovčić
brodski energetski sustavi, brodski pogonski sustavi, brodski pomoćni strojevi, numeričko modeliranje prijenosa topline i tvari

VIŠI ASISTENTI

Tomislav Senčić
motori s unutranjim izgaranjem, termodinamika, toplinski strojevi, numeričko modeliranje

Igor Wolf
termotehnička oprema i sustavi, toplinska ugodnost, kvaliteta zraka u prostoru, obnovljivi izvori energije, centralni sustavi nadzora i upravljanja, optimizacija sustava

ASISTENTI

Igor Bonefačić
termodinamika, numeričko modeliranje procesa izgaranja, prijenosa topline i tvari, obnovljivi izvori energije

Viktor Dragičević
energetski sustavi, energetski i procesni uređaji, inženjerstvo zaštite okoliša

ZNANSTVENI NOVACI

Paolo Blecich
termodinamika, numeričko modeliranje prijelaza topline i izmjene tvari, obnovljivi izvori energije

Aleksandar Božunović
tehnika hlađenja

Ozren Bukovac
motori s unutranjim izgaranjem, termodinamika, toplinski strojevi, numeričko modeliranje, neuronske mreže

Tomislav Mrakovčić
marine energy systems, marine propulsion systems, marine auxiliary machinery, numerical modeling of heat and mass transfer

SENIOR ASSISTANTS

Tomislav Senčić
internal combustion engines, thermodynamics, heat engines, numerical modeling

Igor Wolf
thermo-technical equipment and systems, thermal comfort, indoor air quality, renewable energy sources, central management and control systems, system optimization

ASSISTANTS

Igor Bonefačić
thermodynamics, numerical modelling of combustion, heat and mass transfer, renewable energy sources

Viktor Dragičević
energy systems, energy and process facilities, environmental engineering

JUNIOR RESEARCHERS

Paolo Blecich
thermodynamics, numerical modelling of heat and mass transfer, renewable energy sources

Aleksandar Božunović
refrigeration

Ozren Bukovac
internal combustion engines, thermodynamics, heat engines, numerical modeling, neural networks

Boris Delač
tehnika hlađenja, mjerenja u termotehnici, kompresori, procesna oprema, dizalice topline

Sanjin Fućak
termodinamika, numeričko modeliranje prijelaza topline i izmjene tvari, obnovljivi izvori energije

Vedran Mrzljak
motori s unutranjim izgaranjem, termodinamika, toplinski strojevi, numeričko modeliranje

Boris Delač
refrigeration, thermal measurements, compressors, process equipment, heat pumps

Sanjin Fućak
thermodynamics, numerical modelling of heat and mass transfer, renewable energy sources

Vedran Mrzljak
internal combustion engines, thermodynamics, heat engines, numerical modeling

STRUČNI SURADNIK

Boris Delač
stručni rad iz područja grijanja, ventilacije i klimatizacije

RESEARCH ASSISTANT

Boris Delač
technical activity in the fi eld of heating, ventilation and air-conditioning.

ADMINISTRATIVNO OSOBLJE

Radojka Praprotnik
administrativna tajnica

ADMINISTRATIVE STAFF

Radojka Praprotnik
administrative secretary

VANJSKI SURADNICI

Red. prof. dr. sc. Branko Bošnjaković
okoliš i gospodarstvo

Dr. sc. Serđo Klapčić / HEP - TERMOELEKTRANA Plomin
izvori energije

Pred. mr. sc. Ivan Krešić / INA
goriva i maziva

Mr. sc. Nikola Blažević / Almes
procesno inženejrstvo

Pred. Bojan Jurdana / ENERGO, Rijeka
plinska tehnika

Pred. Damir Žaja / INTEL TRADE, Opatija
automatizacija i regulacija u sustavima klimatizacije

ASSOCIATES

Prof. D. Sc. Branko Bošnjaković
Environmet and economy

D. Sc. Serđo Klapčić / HEP - TERMOELEKTRANA Plomin
Energy Sources

Lect. M. Sc. Ivan Krešić / INA
Fuels and Lubricants

M. Sc. Nikola Blažević / Almes
Process Engineering

Lect. Bojan Jurdana / ENERGO, Rijeka
Gas Technology

Lect. Damir Žaja / INTEL TRADE, Opatija
Automatic HVAC Control Systems

Asist. Ivan Jakovljević / INA
energetska postrojenja

Boris Dragičević / RIJEKAPROJEKT, Rijeka
termotehnička oprema i sustavi, obnovljivi izvori energije

Katarina Knafelj
energetski sustavi

Edi Kučan / Brodogradilište 3. MAJ
brodski sustavi

Radovan Perišić / INA, Urinj
energetski sustavi

Assist. Ivan Jakovljević / INA
Energy power plants

Boris Dragičević / RIJEKAPROJEKT, Rijeka
thermo-technical equipment and systems, renewable energy sources

Katarina Knafelj
Energy Systems

Edi Kučan / Shipyard 3. MAJ
Ship Systems

Radovan Perišić / INA, Urinj
Energy Systems

NASTAVA

Nastava iz područja znanstvenih polja strojarstva i drugih temeljnih tehničkih znanosti, znanstvenih grana procesnoga energetskog strojarstva i brodskog strojarstva te termodinamike, energetike i zaštite okoliša.

KOLEGIJI NA PREDDIPLOMSKOM SVEUČILIŠNOM STUDIJU

Energetski sustavi
Izvori energije
Nauka o toplini I
Termodinamika BG
Termodinamika i energetika
Toplinski strojevi i uređaji

KOLEGIJI NA DIPLOMSKOM SVEUČILIŠNOM STUDIJU

Automatizacija i regulacija u sustavima klimatizacije
Brodski energetski uređaji
Brodski pogonski strojevi
Brodski pomoćni strojevi i uređaji
Brodski sustavi
Brodski termotehnički sustavi
Energetska postrojenja
Energetski i procesni uređaji
Goriva i maziva
Inženjerstvo zaštite okoliša
Kompresori
Laboratorijske vježbe u termotehnici
Motori
Nauka o toplini II
Numeričko modeliranje u termodinamici
Obnovljivi izvori energije
Oprema procesnih postrojenja
Plinska tehnika
Pogonski i radni strojevi
Procesno inženjerstvo

EDUCATION

Lectures in the field of the scientific fields of Mechanical Engineering and other fundamental Engineering Sciences, the scientific branches of Process Energy Engineering and Marine Engineering as well as of Thermodynamics, Energy Engineering and Environmental Protection.

UNDERGRADUATE COURSES

Energy Systems
Energy Sources
Thermodynamics I
Thermodynamics BG
Thermodynamics and Energy
Heat Engines and Devices

GRADUATE COURSES

Automatic HVAC Control Systems
Ship Energy Facilities
Ship Propulsion Devices
Marine Auxiliary Machinery
Ship Systems
Marine HVAC&R Systems
Energy Plants
Energy and Process Devices
Fuels and Lubricants
Environmental Engineering
Compressors
Laboratory Practice in Thermal Engineering
Internal Combustion Engines
Thermodynamics II
Numerical Modelling in Thermodynamics
Renewable Energy Sources
Equipment of Process Plants
Gas Technology
Energy Conversion Engines
Process Engineering

Tehnički izmjenjivači topline
Tehnika grijanja i klimatizacije
Tehnika hlađenja
Termodinamika smjesa
Termoenergetska postrojenja
Toplinska mjerenja
Toplinske turbine

Heat Exchangers
HVAC Systems
Refrigeration
Thermodynamics of Mixtures
Thermal Energy Plants.
Thermal Measurements
Heat Turbines

KOLEGIJI NA STRUČNOM STUDIJU

Brodski sustavi, pomoćni strojevi i uređaji
Energetika u procesnoj industriji
Grijanje i klimatizacija
Procesna oprema i uređaji
Tehnološki procesi u procesnoj industriji
Toplina
Toplinski strojevi i uređaji I
Toplinski strojevi i uređaji II
Zaštita okoliša i radne sredine

VOCATIONAL COURSES

Ship Systems and Auxiliaries
Energetic in Process Industry
Heating and Air-Conditioning Systems
Process Equipment and Devices
Technological Processes in Process Industry
Thermodynamics
Heat Engines and Devices I
Heat Engines and Devices II
Protection of Environment and Working Space

KOLEGIJI NA POSLIJEDIPLOMSKOM (DOKTORSKOM) STUDIJU

Eksperimentalne metode u toplinskoj tehnici i termoenergetici
Izabrana poglavlja iz toplinskih znanosti
Izabrana poglavlja iz brodskih strojnih kompleksa
Izabrana poglavlja iz tehnike hlađenja i tehnike niskih temperatura
Izabrana poglavlja iz izmjenjivača topline
Izabrana poglavlja iz grijanja i klimatizacije
Izabrana poglavlja iz motora s unutarnjim izgaranjem
Izabrana poglavlja iz toplinskih turbostrojeva
Izabrana poglavlja iz brodskih energetskih postrojenja
Numeričko modeliranje prijelaza topline
Numeričko modeliranje procesa izgaranja
Obnovljivi izvori energije
Okoliš i gospodarstvo
Optimizacija energetskih procesa
Racionalna potrošnja energije

POSTGRADUATE COURSES

Experimental Methods in Thermal and Power Engineering
Selected Topics on Thermal Sciences
Selected Topics of Marine Machinery Systems
Selected Topics in Refrigeration and Low-Temperature Refrigeration
Selected Topics on Heat Exchangers
Selected Topics on Heating and Air-Conditioning
Selected Topics in Internal Combustion Engines
Selected Topics on Thermal Turbomachines
Selected Topics Marine Energy Systems
Numerical Modeling of Heat Transfer
Numerical Modeling of Combustion Process
Renewable Energy Sources
Environment and Economy
Optimization of Energy Processes
Rational Energy Consumption

Suvremene konstrukcije motora
Termodinamička analiza procesa
Termodinamika smjesa i toplinski uređaji
Trajnost i pouzdanost termoenergetskih sustava
Trendovi i instrumenti zaštite okoliša
Zaštita okoliša u tehnici hlađenja
Zaštita okoliša u energetici i procesnoj industriji

PROGRAMI CJELOŽIVOTNOG OBRAZOVANJA

Program stručnog osposobljavanja osoba koje provode energetske preglede i/ili energetsko certificiranje zgrada s jednostavnim tehničkim sustavom (Modul 1)

Program stručnog osposobljavanja osoba koje provode energetske preglede i/ili energetsko certificiranje zgrada sa složenim tehničkim sustavom (Modul 2)

Advanced Design of Internal Combustion Engine
Thermodynamic Analysis of Processes
Thermodynamics of Mixtures and Thermal Devices
Durability and Reliability of Thermal Energy Systems
Trends and Instruments of Environmental Protection
Environmental Refrigeration
Environment Protection in Energetics and Process Industry

LIFELONG LEARNING PROGRAMMES

Education of persons who are to perform energy audits and/or energy certifi cation of buildings with a simple technical system (Module 1)

Education of persons who are to perform energy audits and/or energy certifi cation of buildings with a complex technical system (Module 2)

ZNANSTVENOISTRAŽIVAČKI RAD

Istraživanja na toplinskim aparatima i uređajima, izmjenjivačima topline i toplinskim spremnicima koja obuhvaćaju teorijska i laboratorijska istraživanja prijelaza topline, prijenosa mase te izmjene topline pri promjeni faza; istraživanja i optimizacija sustava grijanja i klimatizacije te sustava za korištenje obnovljivih izvora energije; istraživanja na području rashladne tehnike koja obuhvaćaju kompresijske i apsorpcijske rashladne uređaje i dizalice topline; istraživanja u području energetske učinkovitosti i optimizacija termotehničkih sustava grijanja, hlađenja i klimatizacije; istraživanja utjecaja parametara vlažne pare na proces erozije rotorskih lopatica toplinskih turbina; istraživanja erozije korozije protočnog dijela parnih turbina; istraživanja mogućnosti smanjenja emisije štetnih tvari motora s unutarnjim izgaranjem uz zadržavanje niske specifične potrošnje goriva te s ciljem povećanja specifične snage i pouzdanosti u preuzimanju naglih opterećenja snage kod motora s prednabijanjem; istraživanja iz brodskog strojarstva s ciljem optimalnog i energetski racionalnog vođenja brodskih pogonskih sustava; istraživanja na području optimizacije energetskih procesa;istraživanja na području smanjenja emisija štetnih sastojaka iz energetskih i procesnih postrojenja.

RESEARCH AND DEVELOPMENT ACTIVITIES

Research on heat devices, heat exchangers and heat storages which encompass theoretical and laboratory research of heat and mass transfer, as well as heat transfer during phase change processes; research and optimization of heating and cooling systems, as well as of renewable energy systems; research into the field of refrigeration which embraces compression and absorption cooling devices and heat pumps; research into energy efficiency and optimization of HVAC&R systems; research into influence of wet steam parameters on the erosion process of rotor turbine blades; research into erosion - corrosion in the flowing part of steam turbines; research into reducing pollution species emission of internal combustion engines while retaining low specific fuel consumption and aiming at increasing specific power and reliability by sudden overload of a super charged engine; research to field of marine engineering aiming at the optimizing ships power plant control; investigation into optimization of energy processes; investigation into the field of emission reduction from energy and process facilities.

PROJEKTI

Istraživanje i razvoj komponenata i sustava obnovljivih izvora energije, 069-0692972-3112, MZOŠ, Bernard Franković, 2007 - 2012, znanstvenoistraživački.

Numeričke simulacije i optimizacije brodskih dizelskih motora, 069-0691668-1725, MZOŠ, Vladimir. Medica, 2007 - 2012, znanstvenoistraživački.

Primijenjena istraživanja rashladnih sustava s novim radnim tvarima, 069-0692972-2203, MZOŠ, Branimir Pavković, 2007 - 2012, znanstvenoistraživački.

Zmagoslav Prelec, Program pregleda i ispitivanja tlačnih posuda i cjevovoda u TE-PLOMIN I - kotlovsko postrojenje, Narudžba br. 845/2011, HEP, 2011., elaborat.

Zmagoslav Prelec, Program pregleda I ispitivanja tlačne opreme pomoćnoga i elektro postrojenja u TE – Rijeka, Narudžba br. 315/2010, HEP, 2011., elaborate.

Zmagoslav Prelec, Analiza stanja i pregled rješenja MPP2 i PP2 generatora pare u TE- Rijeka, Ugovor br. 02-126/230002204-37/2010, HEP, 2011. studija.

Pavković, B. et al.: Detaljna energetska studija za ortopedsku bolnicu „Prim. Dr. Martin Horvat" u Rovinju, Tehnički fakultet u Rijeci, 2011.

Pavković, B. et al.: Studija isplativosti primjene kogeneracijskog postrojenja u turističkom kompleksu , Tehnički fakultet Rijeka, 2010.

PROJECTS

Research and development of renewable energy components and systems, 069-0692972-3112, Ministry of Science, Education and Sports of the Republic of Croatia, Bernard Franković, 2007.-2012, research and scientific project.

Numerical simulation and optimization of marine diesel engines, 069-0691668-1725, Ministry of Science, Education and Sports of the Republic of Croatia, Vladimir Medica, 2007.- 2012., research and scientific project.

Applied research of refrigeration systems with new refrigerants, 069-0692972-2203, Ministry of Science, Education and Sports of the Republic of Croatia, Branimir Pavković, 2007.- 2012., research and scientifi c project.

Zmagoslav Prelec, Inspection and testing programme of pressure vessels and pipelines in power plant Plomin I – steam boiler plant, Order. No. 845/2011, HEP, 2011., feasibility study.

Zmagoslav Prelec, Inspection and testing programme of pressure vessels of auxiliary and electric plant in Power station - Rijeka, Order No. 315/2010. HEP, 2011., feasibility study.

Zmagoslav Prelec, The analysis and proposal for technical solution of MPP2 and PP2 of steam boiler in Power station Rijeka, Contract No. 02-126/230002204-37/2010, HEP, 2011, study.

Pavković, B. et al.: Detailed energy study for orthopaedic hospital „Prim. Dr. Martin Horvat" in Rovinj, Faculty of Engineering in Rijeka, 2011.

Pavković, B. et al.: Feasibility study of cogeneration system in a tourist complex, Faculty of Engineering in Rijeka, 2010

Franković, B.: Nadzor i kolaudacija termotehničkog sustava zgrade Prehrane na Sveučilišnom kampusu na Trsatu, Sveučilište u Rijeci, 2011

Franković, B.: Nadzor i kolaudacija termotehničkog sustava zgrade Građevinskog fakulteta na Sveučilišnom kampusu na Trsatu, Sveučilište u Rijeci, 2011

Franković, B.: Supervision and co laudation of the HVAC System of the building Prehrane on the University Campus Trsat of the University of Rijeka, 2011

Franković, B.: Supervision and co laudation of the HVAC System in the building of the Faculty of Civil Engineering on the University Campus Trsat of the University of Rijeka, 2011

PUBLIKACIJE / PUBLICATIONS

RADOVI U ČASOPISIMA / JOURNAL PAPERS

Blecich, P., Lenić, K., Trp, A.; Franković, B.: Heat Transfer Analysis of Heating Plate with Multiple Heat Sources, Journal Strojarstvo, str. 549-557, vol. 52, br. 5, 2010.

Čarija, Z., Pavković, B., Franković, B.: Numerical Study of Air-Flow and Heat Transfer Inside a Sports Hall, Journal Strojarstvo, str. 569-576, vol. 52, br. 5, 2010.

Franković, D., Pavković, B., Bupić, M.: Consequences of Energy Efficiency Measures Implementation to Buildings' Electrical Systems, Technical Gazette, str. 1-13, vol. 18, br. 1, 2011.

Jemrić, T., Ivić, D., Fruk, G., Škutin Matijaš, H., Cvjetković, B., Bupić, M., Pavković, B. : Reduction of postharvest decay of peach and nectarine caused by Monilinia laxa using hot water dipping, Food and Bioprocess Technology, str. 149-154, vol. 4, br. 1. 2011.

Pavković, B., Zanki, V., Čačić, G.: Energetska učinkovitost u sektoru graditeljstva u Hrvatskoj – preliminarne energetske studije / Energy Efficiency in Building Sector in Croatia – Preliminary Energy Studies, Journal Strojarstvo, str. 629 – 643, vol. 52, br. 6, 2010.

Senčić, T.: Analysis of Soot and NOx Emissions Reduction Possibilities on Modern Low Speed, Two-Stroke, Diesel Engines, Strojarstvo: časopis za teoriju i praksu u strojarstvu, Vol.52 No.5, 2010.

Senčić, T., Lucchini, T., Mrzljak, V.: Tuning and Validation of a Diesel Spray Model, Transactions of FAMENA, Zagreb, vol. 34, br. 4, 2010.

Staniša B., Prelec Z., Jakovljević i., Efficiency Analysis od a Steam Turbine Cogeneration Plant with Capacity 5,7 MWe, Engineering Review, Faculty of Engineering, University of Rijeka, str. 85 -95, 2010.

Wolf, I.: Experimental Analysis of Thermal Comfort in an Air Conditioned Open Space Office, Strojarstvo: časopis za teoriju i praksu u strojarstvu, str. 620-632, vol. 52, br. 6, 2010.

MEĐUNARODNI KONGRESI / INTERNATIONAL CONGRESSES

Blecich, P., Franković, B.: Effects of mechanical ventilation system on thermal comfort and space heating and cooling energy consumption in detached family house, Proceedings of the 21st International symposium on heating, refrigerating and air-conditioning, str. 34-35, Zagreb, 2011.

Blecich, P., Franković, B.: Korištenje otpadne topline apsorpcijskog rashladnog uređaja za pripremu tople vode, Procedings of 28th International Scientific Meeting of Gas Experts, Opatija, 2011.

Blecich, P., Franković, B.: Passive Solar House in Croatia, Eurosun 2010, ISES-Europe International Conference on Solar Heating, Cooling and Buildings, str. 32-32, Graz, Austrija, 2010,.

Blecich, P., Franković, B.: Solar Combisystem for Heating and Cooling of Passive House in the Area of Rijeka, Proceedings of the International Congress Energy and the Environment 2010 - Engineering for a Low-Carbon Future, str. 551-565, vol. 1 , Opatija, 2010.

Blecich, P., Franković, B., Arbula, A.: Financial viability of energy efficiency measures for single-family houses in three urban areas of Europe, ISES Solar World Congress 2011 Book of Proceedings, Kassel, Njemačka, 2011.

Blecich, P., Trp, A., Lenić, K., Heat transfer and fluid flow in rectangular offset strip-fin heat exchanger, Proceedings of the International Congress Energy and the Environment 2010 – Symposium HEAT-SET 2010, str. 187-199, Vol. 2, Opatija, Hrvatska, 2010.

Čarija, Z., Franković, B., Fućak S.: Heat Transfer Analysis of Fin-and-Tube Heat Exchanger Using Fluid-Solid Interaction, Proceedings of the International Congress Energy and the Environment 2010, Engineering for a Low-Carbon Future, Rijeka : Association GREТh i Hrvatski savez za sunčevu energiju, str. 199-208, vol. 2, 2010.

Čikić, A., Pavković, B., Delač, B.: Potrošnja toplinske energije pri intenzivnoj proizvodnji „zelene" hrane, Thermal Energy Consumption at Intensive „Green" Food Production, Proceedings 2nd International Congress Mechanical Engineers' Days, str. 284-294, Zagreb, Hrvatska, 2011.

Delač B., Pavković B., Prelec. Z., Analiza primjene trigeneracijskih sustava na primjeru novinske tiskare, Zbornik 2. međunarodnoga skupa o prirodnom plinu, toplini i vodi, Osijek, Hrvatska, 2011.

Delač, B., Pavković, B., Prelec, Z.: Analysis of CCHP systems for a newspaper printing office – a case study, Proc. 2nd International Natural Gas, Heat and Water Conference Osijek: Mechanical Engineering Faculty in Slavonski Brod, Hrvatska, 2011.

Franković, B.: International Conference EuroSun 2012, Opatija, Croatia /Međunarodna konfrencija EuroSun 2012, Opatija, Proc. of the ISES World Congress, 2011, Kassel, Njemačka, 2011.

Franković, B.: Strukovno udruživanje inženjera u Hrvatskoj / Professional Engineering Union in

Croatia, Proceedings 2nd International Congress Mechanical Engineer's Days, Split, Hrvatska, 2011.

Franković, B., Franković, M.: Energy efficient HVAC system of the Croatian National Theatre Building in Rijeka, Energetski učinkovit sustav klimatizacije zgrade Hrvatskog narodnog kazališta u Rijeci, Conference Proceedings Energy Management in Cultural Heritage, Zagreb: UNDP, Hrvatska, 2011.

Glavan I., Prelec Z., Optimizacija trigeneracijskih energetskih sustava, Proceedings of International Congress „Energy and the Environmental 2010", str. 285-295, Vol. 1, 2010.

Glažar, V., Lenić, K., Bonefačić, I., Numerical and expreimantal analysis of heat exchanger with microchannel coil, Proceedings of the International Congress Energy and the Environment 2010 – Symposium HEAT-SET 2010, str. 233-240, Vol. 2, Opatija, Hrvatska, 2010.

Glažar, V.; Lenić, K.; Trp, A.; Franković, B., Experimental Analysis of Thermodynamical Properties of Fin-and-Tube and Heat Exchanger with Microchannel Coil, Proceedings of the 21st International Symposium and Exhibition of Heating, Refrigerating and Air Conditioning Interklima 2011, Zagreb, Hrvatska, 2011.

Pavković, B., Čikić, A., Delač, B.: Geotermalna energija – razvojni čimbenik neke regije i/ili energetski resurs, Geothermal Energy – Development Factor of a Certain Region and/or Energy Resource, Proceedings 2nd International Congress Mechanical Engineer's Days, str. 96-105, Zagreb, Hrvatska, 2011.

Pavković, B., Delač, B., Franković, D.: Improving Energy Efficiency of the Art School in Dubrovnik, Conference Proceedings Energy Management in Cultural Heritage, Zagreb: UNDP, Hrvatska, 2011.

Pichler, M.F., Fućak, S., Franković, B.: Low temperature solar thermal domestic hot water potential of Croatia's Islands and Coastal Regions, Eurosun 2010, International Conference on Solar Heating, Cooling and Buildings, str. 176-176, Graz, Austrija, 2010.

Wolf, I., Viličić, I., Vialle, P.-J.: Numerical Analysis of Thermal Comfort in an Air-Conditioned Open Space Office, Proceedings of the International Congress Energy and the Environment 2010 – Symposium Heat-SET, str. 127-138, Vol. 2, Opatija, Hrvatska, 2010.

KNJIGE / BOOKS

Prelec Z., Izloženost kritične energetske infrastrukture, str. 65-104, ISBN 978-953-6666-69-0, izd. Institut za istraživanje i razvoj obrambenih sustava MORH-a, Zagreb, Institut društvenih znanosti Ivo Pilar, Zagreb, 2010., poglavlje u knjizi „Energetska sigurnost i kritična infrastruktura"

Pavković, B.: Sustavi grijanja: Program ujedinjenih naroda za razvoj - UNDP, Zagreb, 2010., str. 247-366, poglavlje u knjizi „Priručnik za energetsko certificiranje zgrada"

Lenić, K.: Metodologija proračuna toplinske energije: Program ujedinjenih naroda za razvoj - UNDP, Zagreb, 2010., str. 659-750, poglavlje u knjizi „Priručnik za energetsko certificiranje zgrada"

MEĐUNARODNA SURADNJA / INTERNATIONAL COLLABORATIONS

ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers. California Institute of Technology, USA/SAD.
Dipartimento di fisica tecnica, Universita' degli studi di Padova, Italy/Italija.
EAEC – European Automobile Engineers Cooperations. Ente per le Nuove tecnologie, l'Energia e l'Ambiente, ENEA, Roma, Italy/Italija.
Faculty of Chemistry and Chemical Engineering, University of Maribor, Slovenia/Slovenija.
Faculty of Mechanical Engineering, University of Ljubljana, Slovenia/Slovenija.
Faculty of Mechanical Engineering, University of Maribor, Slovenia/Slovenija.
Fakulta strojna, VUT Brno, Czech Republic/Češka Republika.
FISITA – International Federation of Automotive Engineering Societes.
GREThh, Bâtiment Lynx, SavoieTechnolac, Le Bourget du Lac – Cedex, France/Francuska.
Institut Jožef Božek, ČVUT Prague, Czech Republic/Češka Republika.
Institute for Resource Effi cient and Sustainable Systems, Graz University of Technology, Austria/Austrija.
International Institute of Refrigeration, Paris/Pariz, France/Francuska.
ISES – The International Solar Energy Society, Freiburg, Germany/Njemačka.
ISES Europe (9th International Conference EuroSun 2012 Opatija, Croatia) Freiburg, Germany/Njemačka.
Laboratory for Heating, Sanitary and Solar Technology, University of Ljubljana, Slovenia/Slovenija.
Mannheim University of Applied Sciences (Fachhochschule Mannheim), Germany/Njemačka.
Politecnico di Milano, Italy/Italija.
Research and Development Center, Compagnie Industrielle d'Aplications Thermiques (CIAT), Culoz, France/Francuska.
Szent Istvan University, Gödollo, Hungary/Mađarska.
REHVA - Federation of European Heating, Ventilation and Air Conditioning Associations, Brussels/Bruxelles, Belgium/Belgija
EURAMMON - a joint initiative by companies, institutions and individuals committed to increasing the use of natural refrigerants, Frankfurt, Germany/Njemačka
Università di Padova, Dipartimento di fisica tecnica, Padova, Italia/Italija
Universität in Kassel, Germany/Njemačka.

7. STRUČNE SLUŽBE

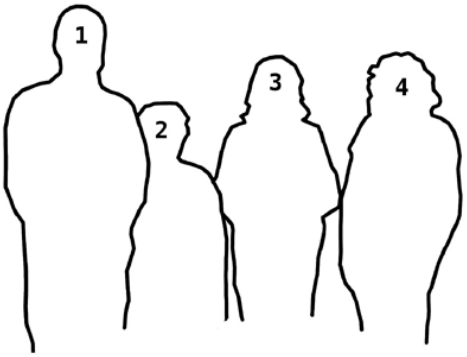
PROFESSIONAL AND ADMINISTRATIVE STAFF

7.1. KNJIŽNICA / LIBRARY

Voditeljica / Head:
Sanja Heberling Dragičević, prof., dipl. knjiž. / prof., grad. librarian

URL: http://www.riteh.uniri.hr/ustroj/knjiznica

1. Mario Šlosar-Brnelić
2. Anka Glavan
3. Vesna Peršić-Rukonić
4. Sanja Heberling Dragičević



Knjižnica Tehničkog fakulteta Sveučilišta u Rijeci, sa svojim knjižnično-informacijskim uslugama, dio je znanstvene, istraživačke i obrazovne djelatnosti Fakulteta. Obavlja poslove oblikovanja i izgradnje knjižničnog fonda (nabava, stručna obrada,...), pružanja knjižničnih usluga korisnicima (posudba i korištenje građe, informacijsko-edukacijska djelatnost,...) te ostale poslove koji proizlaze iz tih procesa.

The library of the Faculty of Engineering of the University of Rijeka, with its library-information services, is part of the scientific, research and educational Faculty activity. The library performs activities of form and construction library funds (acquisition, professional processing,...) to provide library services to users (borrowing and the use of material, information-educational activities,...) and other tasks arising from these processes.

DJELATNICI

VODITELJICA

Sanja Heberling Dragičević, prof., dipl. knjižničar

mr. sc. Mario Šlosar-Brnelić, dipl. knjižničar

Vesna Peršić-Rukonić, dipl. oecc.,
knjižničar

Anka Glavan,
knjižničar

STAFF

HEAD

Sanja Heberling Dragičević, prof., grad. librarian

M.sc. Mario Šlosar-Brnelić, grad. librarian

Vesna Peršić-Rukonić, grad. economist
librarian

Anka Glavan,
librarian

OPĆI PODACI

Vrsta knjižnice:
fakultetska knjižnica

Smještaj:
prizemlje desno (vrata br. 0-23)

Površina i smještaj:
403 m^2 na dvije etaže

Korisnički prostor:
130 m^2 na jednoj etaži

Čitaonica:
33 mjesta (bežični pristup internetu)

GENERAL INFORMATION

Type of library:
Faculty library

Position:
ground right (door no.0-23)

Area:
403 m^2 on two floors

Space for users:
130 m^2 on one floor

Reading room:
33-seat sections (wireless Internet access)

Računalna čitaonica:
24 mjesta s 12 računala s pristupom internetu i 1 umreženim pisačem

Otvorenost za korisnike:
knjižnica: 38 sati tjedno
računalna čitaonica: 78 sati tjedno

USLUGE KNJIŽNICE:

Korištenje i posudba knjižnične građe

Korištenje prostora čitaonice i računalne čitaonice

Pristup informacijama o knjižničnom fondu i ostalim knjižničnim resursima

Informacijske i edukacijske usluge

Posebne usluge za zaposlenike Fakulteta (međuknjižnična posudba, klasifikacija stručnih i znanstvenih radova i sl.)

***Web*-stranice:**
Pristup katalozima, bazama podataka, *online*-časopisima, zbirkama akademskih radova i ostalim knjižničnim informacijama
http://www.riteh.uniri.hr/zav_katd_sluz/knjiznica/index.html

***Online*-katalog:**
OPAC (*Online Public Access Catalog*)
„Crolist-Tehnički fakultet Rijeka"
http://crolist.riteh.uniri.hr/

Baze podataka:
Baze podataka za akademsku i znanstvenu zajednicu (Centar za *online*-baze podataka)
http://www.riteh.uniri.hr/zav_katd_sluz/knjiznica/tf_baze.html

Knjižnični program:
„Crolist - Aladin"

Computers reading room:
24-seat capacity equipped with 12 computers with Internet access and 1 networked printer

Openness to users:
library: 38 hour per week
computer reading room: 78 hour per week

LIBRARY SERVICES:

Using and borrowing of library materials

Using the reading room and computers reading room

Access to information about the library fund and other library resources

Information and education services

Special services for employees of the Faculty (interlibrary loan, classification of professional and scientific papers, etc.)

Library web site:
Access to catalogues, databases, online e-journals, collection of academic papers and other library information
http://www.riteh.uniri.hr/zav_katd_sluz/knjiznica/index.html

Online Catalogue:
OPAC (Online Public Access Catalog)
„Crolist-Faculty of Engineering Rijeka"
http://crolist.riteh.uniri.hr/

Databases:
Databases for academic and scientific community (Center for online databases)
http://www.riteh.uniri.hr/zav_katd_sluz/knjiznica/tf_baze.html

Library software:
„Crolist - Aladin"

Katalogizacija i klasifikacija građe:
U skladu s međunarodnim propisima i standardima (UDK – Univerzalna decimalna klasifikacija) – UNIMARC format

Uključenost knjižnice u udruge, zajednice i sl.:
Sustav umreženih knjižnica riječkog Sveučilišta
Udruga knjižnica Konzorcij Crolist
Zajednica knjižnica sveučilišta Hrvatske

Cataloging and classification:
According to the International regulations and standards (UDC – Universal Decimal Classification) - UNIMARC Bibliographic Format

Library involvement in associations, communities etc.:
Library network system of the University of Rijeka
Coalition of Library Consortium Crolist
University Library Association of Croatia

SUSTAV UPRAVLJANJA KVALITETOM:

ISO 9001

QUALITY MANAGAMENT SYSTEM:

ISO 9001

PODACI O FONDU I KORISNICIMA

Aktivni članovi knjižnice:
1012 članova

Knjige, doktorske disertacije:
20.443 komada

Ostala knjižnična građa:
9.197 komada

Arhiv časopisa:
724 naslova

***Online*-katalog:**
17.500 zapisa

***Webpac* statistika:**
17.251 upit (2009.)

INFORMATION ABOUT THE FUND AND USERS

Active members of library:
1012 members

Books, dissertations...:
20.443 units

Other library materials:
9.197 units

Journal arhive:
724 titles

Online Catalogue:
17.500 record

Webpac statistics:
17.251 search (2009.)

NOVE KNJIGE I ČASOPISI

Kupljene knjige:
17 svezaka

Donacije:
73 svezaka

NEW BOOKS AND JOURNALS

Bought books:
17 units

Donations:
73 units

Novi naslovi:
42 naslov

Kupljeni hrvatski časopisi:
9 naslova

Donacije:
19 naslova

Kupljeni strani časopisi:
3 naslova

Donacije:
6 naslova

New titles:
42 titles

Bought croatian journals:
9 titles

Donations:
19 titles

Bought foreign journals:
3 titles

Donations:
6 titles

KORIŠTENJE KORISNIČKOG PROSTORA

Korištenje prostora:
9.702 korisnika

Čitaonica i računalna čitaonica za učenje, pretraživanje *web*-stranica (kataloga, baza podataka...):
40 korisnika dnevno

USAGE OF THE USER AREA

Usage of the user area:
9.702 users

Reading room and computers reading room for study, web search (catalogues, databases...):
40 users daily

POSUDBA GRAĐE I DRUGE USLUGE ZA KORISNIKE (INFORMACIJSKE, EDUKACIJSKE)

Posudba knjiga i časopisa:
7.321 svezak u godini

Međuknjižnična posudba:
13 knjiga i 14 članaka

Informacije o knjižnici, knjižničnim resursima, literaturi, pretraživanju informacija:
Svakodnevno – individualno

Edukacija studenata 1. godine o knjižnici, knjižničnim resursima, pretraživanju informacija:
2 tjedna u listopadu svaki dan od 9 do 10 sati

CIRCULATION AND OTHER CUSTOMER SERVICE (INFORMATIONAL, EDUCATIONAL...)

Circulation (books and journals):
7.321 units per year

Interlibrary loan service:
13 books and 14 papers

Information about library, library resource, information retrieval:
Every day – individual

Education of students in the 1. year study of the programme related to library, library resource, information retrieval:
2 weeks in October every day from 9,00-10,00

Klasifikacija stručnih članaka:
89 članak

Iskorišteni ISBN-brojevi za publikacije izdane na Tehničkom fakultetu:
7 brojeva

Classification of professional papers:
89 paper

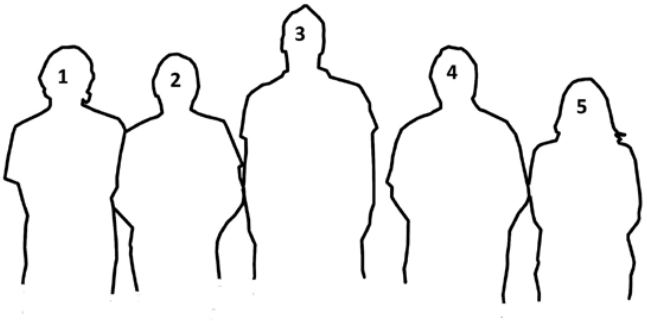
ISBN numbers in use for publications edited at the Faculty of Engineering:
7 numbers

7.2. RAČUNALNI CENTAR / COMPUTER CENTER

Voditelj / Head:
Prof. v. šk. mr.sc. / College Professor Antun Sok, M. Sc.

URL: http://www.riteh.uniri.hr/ustroj/rc/

1. Domagoj Crljenko
2. Siniša Vukotić
3. Dario Maršanić
4. Antun Sok
5. Tatjana Škorjanc



DJELATNICI

VODITELJ

Prof. v. šk. mr. sc. Antun Sok

STRUČNI SURADNICI

Tatjana Škorjanc, dipl. ing.
web-administrator

Domagoj Crljenko, dipl. ing.
mrežni administrator

Dario Maršanić, dipl. ing.
mail-administrator

OPERATER

Siniša Vukotić, prof.
održavanje računala

RAČUNALNI KABINETI

Računalni kabinet 1: 20 + 1 računalo
Računalni kabinet 2: 20 + 1 računalo
Računalni kabinet 3: 20 + 1 računalo
Računalni kabinet 4:20 + 1 računalo
Računalni kabinet 5: 12 računala
Računalni kabinet 6: 18 računala
Računalni kabinet 7: 20 + 1 računalo

PROJEKTI

Akademija Cisco – obrazovni program za projektiranje računalnih mreža. U akademskoj godini 2010/11 program CCNA pohađalo je 20 polaznika.

Testni centar ECDL – obrazovni program i provjera informatičke pismenosti u svrhu dobivanja Europske računalne diplome. U akademskoj godini 2010/11 u centru su obavljena 372 testiranja u okviru osnovnih i naprednih programa.

STAFF

HEAD

College Professor Antun Sok, M. Sc.

RESEARCH ASSISTANTS

Tatjana Škorjanc, graduate engineer
web administrator

Domagoj Crljenko, graduate engineer
network administrator

Dario Maršanić, graduate engineer
mail administrator

COMPUTER OPERATOR

Siniša Vukotić, prof.
computer servicing

COMPUTER CLASSROOMS

Computer Classroom 1: 20 + 1 computers
Computer Classroom 2: 20 + 1 computers
Computer Classroom 3: 20 + 1 computers
Computer Classroom 4: 20 + 1 computers
Computer Classroom 5: 12 computers
Computer Classroom 6: 18 computers
Computer Classroom 7: 20 + 1 computers

PROJECTS

Cisco Networking Academy – training program for designing computer networks. In 2010/11 20 candidates attended the CCNA program.

ECDL Test Centar – training program and testing of informatic literacy for reaching European Computer Driving License. In 2010/11 372 tests within basic and advanced programs were made.

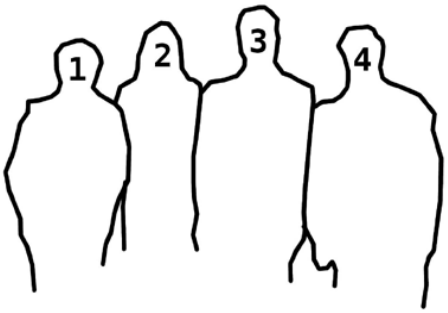
7.3. FINANCIJSKA SLUŽBA / ACCOUNTING DIVISION

Voditeljica službe / Office Head:
Ana Mirković Pavlović, dipl. oec.

Zamjenik voditelja / Deputy Head:
Robert Mohorić, dipl. oec.

URL: http://www.riteh.uniri.hr/ustroj/strucne/index.html

1. Mirjana Mihaljević-Vukelić
2. Bruna Martinović
3. Robert Mohorić
4. Davorka Medanić



Financijska služba obavlja financijske i računovodstvene poslove.

DJELATNICI

VODITELJICA FINANCIJSKE SLUŽBE:

Ana Mirković Pavlović, dipl. oec.

ZAMJENIK VODITELJA FINANCIJSKE SLUŽBE:

Robert Mohorić, dipl. oec.

Mirjana Mihaljević Vukelić
financijski poslovi

Bruna Martinović
financijski poslovi

Davorka Medanić
financijski poslovi

Accounting division performs financial and accounting activities.

STAFF

HEAD OF THE ACCOUNTING DIVISION:

Ana Mirković Pavlović, grad. economist

DEPUTY HEAD OF ACCOUNTING DIVISION:

Robert Mohorić, grad. economist

Mirjana Mihaljević Vukelić
financial activities

Bruna Martinović
financial activities

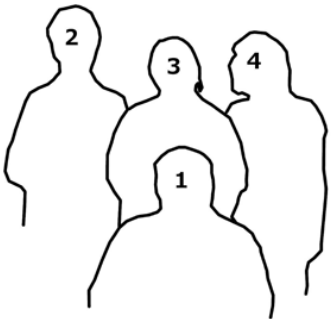
Davorka Medanić
financial activities

7.4. SLUŽBA NABAVE I KOMERCIJALE / PROCUREMENT AND COMMERCIALE OFFICE

Voditeljica službe / Office Head:
Dubravka Režić, dipl. oec. / grad. economist

URL: http://www.riteh.uniri.hr/ustroj/strucne/index.html

1. Petar Gudac
2. Dragica Kola
3. Lovorka Malinić
4. Dubravka Režić



Služba obavlja poslove komercijale, nabave i ekonomata. Vodi poslove u vezi s nabavom roba, usluga i radova, izradom plana nabave robe, usluga i radova za tekuću godinu, priprema i provodi postupke odabira godišnjih dobavljača, vodi evidencije nabava male i velike vrijednosti, administrativno provodi postupke nabave prema Zakonu o javnoj nabavi, priprema dokumentaciju ovisno o načinu nabave, kontaktira s dobavljačima sudjeluje u pripremanju odluka i prijedloga ugovora pohranjuje cjelokupnu dokumentaciju o nabavi, preuzima naručenu robu, vodi evidenciju o sitnom inventaru, osnovnim sredstvima i potrošnom materijalu, radi na izradi, održavanju i unapređenju baza podataka Službe te održava i unapređuje sustav kontrole kvalitete u Službi.

This office performs commercial, procurement and economic services. It runs services connected with the procurement of goods and services, prepares and implements the procedures for the annual selection of suppliers, contracts with suppliers, receives ordered goods, keeps records of small inventories, basic. resources and consumables, works on the office's databases and maintains and improves the system of quality control of its services.

DJELATNICI

VODITELJICA SLUŽBE:

Dubravka Režić, dipl. oec.
komercijalni poslovi i poslovi nabave

Petar Gudac
ekonom za inventar

Dragica Kola
ekonom za potrošni materijal

Lovorka Malinić
ekonom za prodaju publikacija

STAFF

OFFICE HEAD:

Dubravka Režić, grad. economist
commercial activies and supply/purchasing services

Petar Gudac
economist for inventory

Dragica Kola
economist for supplies

Lovorka Malinić
economist for sale of publications

7.5. SLUŽBA OPĆIH I KADROVSKIH POSLOVA / GENERAL AND PERSONNEL OFFICE

Voditeljica službe / Office Head:
Lenka Štajduhar, oec. / economist

URL: http://www.riteh.uniri.hr/ustroj/strucne/index.html

1. Dragica Alempić
2. Marija Kura
3. Natalija Forgić
4. Lenka Štajduhar
5. Marica Gnjatović
6. Nevenka Lilić-Pekas
7. Radojka Praprotnik
8. Mirjana Košpić
9. Lidija Petričić
10. Snježana Mikuličić Marunić
11. Dragica Jurin
12. Vesna Franelić
13. Snježana Ban
14. Nerina Čugelj
15. Fahira Horozović

DJELATNICI

VODITELJ OPĆE I KADROVSKE SLUŽBE:

Lenka Štajduhar, oecc.

VODITELJ KADROVSKOG ODSJEKA:

Snježana Mikuličić Marunić

Janja Rožić
referent

Lidija Petričić
referent

Mira Bobanović, Nerina Čugelj, Natalija Forgić, Vesna Franelić, Dragica Jurin, Marija Kura, Radojka Praprotnik
tajnice zavoda

Franjo Brozović
domar-kućepazitelj

Mladen Ostrogović
domar-kućepazitelj

Dragica Alempić, Lidija Antunović, Snježana Ban, Marica Gnjatović, Fahira Horozović, Senka Jedrejčić, Nevenka Lilić-Pekas, Mirjana Košpić
spremačice

STAFF

GENERAL AND PERSONAL OFFICE HEAD:

Lenka Štajduhar, economist

PERSONNEL OPERATION MANAGER:

Snježana Mikuličić Marunić

Janja Rožić
Registry clerk

Lidija Petričić
Registry clerk

Mira Bobanović, Nerina Čugelj, Natalija Forgić, Vesna Franelić, Dragica Jurin, Marija Kura, Radojka Praprotnik
department secretary

Franjo Brozović
Major-domo

Mladen Ostrogović
Major-domo

Dragica Alempić, Lidija Antunović, Snježana Ban, Marica Gnjatović, Fahira Horozović, Senka Jedrejčić, Nevenka Lilić-Pekas, Mirjana Košpić
Cleaning ladies

7.6. SLUŽBA STUDENTSKE EVIDENCIJE / STUDENTS' REGISTAR AND AFFAIRS OFFICE

Voditelj službe / Office Head:
Žarko Burić, mag. ing.

URL: http://www.riteh.uniri.hr/ustroj/strucne/index.html

1. Darko Vidučić
2. Antonela Ćaleta
3. Ivona Balzani
4. Tanja Veljčić
5. Žarko Burić

Služba studentske evidencije fakulteta obavlja sve poslove vezane uz potrebe studenata. Zaprima i obrađuje dokumentaciju za razredbeni postupak, obavlja upis studenata u prvu i u više studijske godine, priprema dokumentaciju studenata za završni ili diplomski ispit, organizira promocije završenih studenata, prima i izdaje razne zahtjeve, uvjerenja i potvrde, izrađuje izvješća i stručne analize za potrebe Fakulteta te vodi potrebnu korespondenciju i daje izvješća zainteresiranim strankama.

The students' Registar and Affairs Office is in charge of all the issues pertaining to students' needs. It collects and manages documentation for the admission exams, manages the enrolment of students to all the study years, prepares students' documents for the graduation exams, organizes the commencement of graduates, receives and delivers various requests and certificates, produces reports and analyses as per Faculty need, manages the necessary correspondence and gives reports to interested parties.

DJELATNICI

VODITELJ SLUŽBE

Žarko Burić, mag. ing.
voditelj službe

Ivona Balzani

Đurđica Linardić

Darko Vidučić, mag. ing.

Tanja Veljčić

Antonela Ćaleta

STAFF

OFFICE HEAD

Žarko Burić, mag. ing.
office head

Ivona Balzani

Đurđica Linardić

Darko Vidučić, mag. ing.

Tanja Veljčić

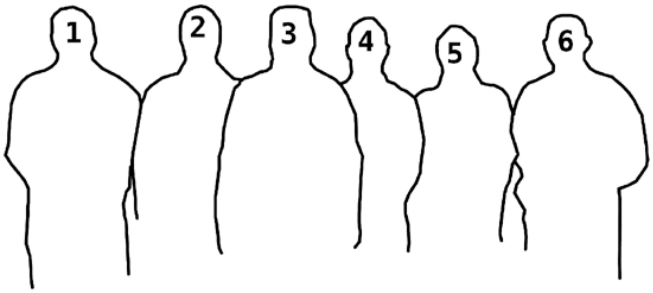
Antonela Ćaleta

7.7. TEHNIČKA SLUŽBA / TEHNICAL AND MAINTENANCE SERVICES

Voditelj službe / Head of service:
Nevio Poniš, dipl. ing. / graduate engineer

URL: http://www.riteh.hr/ustroj/strucne/index.html

1. Bernardo Badurina
2. Josip Jurasić
3. Nevio Poniš
4. Igor Mihaljević
5. Ivo Vičić
6. Serđo Mišić



Tehnička služba obavlja poslove održavanja, zaštite na radu i zaštite od požara. U sastavu Tehničke službe su i laboranti koji pod nadzorom nastavnika sudjeluju u pripremi, odnosno izvedbi dijela nastave.

The Tehnical and Maintenance Services perform activities pertaining to maintenance, work safety and fire protection. Involved in the Technical Services are also laboratory tehnicians that, under supervision of teaching staff, participate in the preparation of performing parts of lectures.

DJELATNICI

VODITELJ SLUŽBE

Nevio Poniš, dipl. ing
voditelj službe

Bernardo Badurina

Josip Jurasić

Igor Mihaljević

Serđo Mišić

Ivo Vičić

STAFF

HEAD OF SERVICE

Nevio Poniš, graduate engineer
office head

Bernardo Badurina

Josip Jurasić

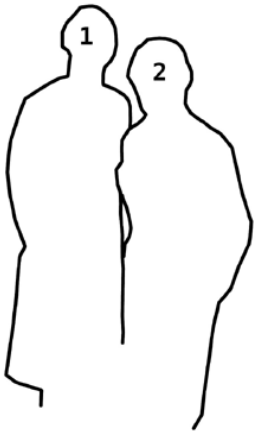
Igor Mihaljević

Serđo Mišić

Ivo Vičić

7.8. MARENDARIJ /CAFETERIA "PIPI"

Vlasnica / Owner:
Ivanka Jurasić



1. Helena Mavrinac
2. Ivanka Jurasić

8. STUDENTSKI ZBOR

STUDENT COUNCIL

STUDENTSKI ZBOR TEHNIČKOG FAKULTETA / STUDENT COUNCIL AT THE FACULTY OF ENGINEERING

Studentski zbor je najviše predstavničko tijelo studenata unutar Fakulteta. Studentski zbor čini deset članova koji su i članovi Fakultetskoga vijeća Tehničkoga fakulteta. Članovi SZ-a aktivno sudjeluju i surađuju u kreiranju politike Fakulteta, studijskih programa te nastave na Fakultetu. Studentski zbor brani interese studenata, upozorava na nepravilnosti i nepravde te sufinacira rad studentskih udruga i organizacija na Fakultetu. Studentski zbor Tehničkoga fakulteta u okviru svojih mogućnosti i sufinanciranja od Fakulteta i Sveučilišta raspolaže određenim sredstvima koja su predviđena za trošak studentskih projekata, rad njihovih udruga i organizacija. Studentski zbor preko svojega ovlaštenog predstavnika sudjeluje i u tijelima odlučivanja unutar Sveučilišta u Rijeci. Studentski zbor podržava daljnji razvoj svih studentskih organizacija, pokretanje novih inicijativa za bolje i kvalitetnije studiranje na Tehničkom fakultetu. Pored Studentskog zbora kao krovne studentske organizacije studenti se organiziraju i svoj rad obavljaju i u okviru studentskih udruga. One su ustrojene kao strukovne udruge koje djeluju na području jednog ili više sličnih fakulteta. Udruge koje postoje i djeluju na Tehničkom fakultetu su: IAESTE, IEEE, FORMULA STUDENT.

The Students council (SC) is the highest student representative body of the Faculty. It consists of ten members who hold membership at the Faculty council. The members of the SC actively participate in developing faculty politics, student programs and the curriculum. The SC defends the interests of students, points to irregularities and injustices, and helps to fi nance the work of student associations and student organizations at the Faculty. In the framework of its responsibilities the SC, in conjunction with the financial help of the Faculty and university, decides how to distribute funds intended for student projects and the activities of their associations and organizations. The SC, as an authorized representative, participates in decisionmaking bodies of the University of Rijeka. It supports further development of all student organizations; launches new initiatives for better and higher quality studies at the Faculty of Engineering. Alongside the SC as the supreme student organization, students also organize and carry out their activities in the framework of the student associations. These student organizations were created as the professional associations within one or more faculties. These organizations are: IAESTE, IEEE, FORMULA STUDENT.

ČLANOVI STUDENTSKOG ZBORA TEHNIČKOG FAKULTETA

1. **Preddiplomski sveučilišni studij strojarstva i brodogradnje.**
   - Tea Jevtić (tea.jevtic@gmail.com)
   - Boris Erceg, zamjenik (bibo.erceg@gmail.com)
2. **Preddiplomski sveučilišni studij elektrotehnike i računarstva.**
   - Ivan Pavković (pavkovic.ri@gmail.com)
   - Olga Čerina (olga.cerina@gmail.com)
3. **Stručni studij brodogradnje, elektrotehnike i strojarstva.**
   - Aleksandar Milačić (amilacic@sz.uniri.hr)
   - Mirko Petrinčić, zamjenik
   - Sanja Zrinšćak (sanja.zrinscak@gmail.com)
   - Stjepan Petrović, zamjenik (spetrov@riteh.hr)
4. **Diplomski i dodiplomski sveučilišni studij brodogradnje, elektrotehnike i strojarstva.**
   - Danilo Capan (capanriteh@gmail.com)
   - Hrvoje Novak (hrvoje.novak1@gmail.com)
   - Franko Hrvatin, zamjenik (franko.hrvatin88@gmail.com)
5. **Poslijediplomski doktorski studij.**
   - David Blažević, dipl. ing. (dablazev@riteh.hr)
   - Željko Vrcan, dipl. ing., zamjenik (Zeljko.Vrcan@riteh.hr)
   - Sandro Doboviček, dipl. ing. (Sandro.Dobovicek@riteh.hr)
   - Igor Džambas, dipl. ing., zamjenik (Igor.Dzambas@riteh.hr)
   - Marko Kršulja, dipl. ing. (mkrsulja@riteh.hr)
   - Mauro Štefančić, dipl. ing., zamjenik

MEMBERS OF THE STUDENT COUNCIL AT THE FACULTY OF ENGINEERING

1. **Undergraduate university study of mechanical engineering and naval architecture.**
   - Tea Jevtić (tea.jevtic@gmail.com)
   - Boris Erceg, alternate member (bibo.erceg@gmail.com)
2. **Undergraduate university study of electrical engineering and computer science.**
   - Ivan Pavković (pavkovic.ri@gmail.com)
   - Olga Čerina (olga.cerina@gmail.com)
3. **Undergraduate vocational study of naval architecture, electrical engineering and mechanical engineering.**
   - Aleksandar Milačić (amilacic@sz.uniri.hr)
   - Mirko Petrinčić, alternate member
   - Sanja Zrinšćak (sanja.zrinscak@gmail.com)
   - Stjepan Petrović, alternate member (spetrov@riteh.hr)
4. **Graduate university study of naval architecture, electrical engineering and mechanical engineering.**
   - Danilo Capan (capanriteh@gmail.com)
   - Hrvoje Novak (hrvoje.novak1@gmail.com)
   - Franko Hrvatin, alternate member (franko.hrvatin88@gmail.com)
5. **Postgraduate doctoral study.**
   - David Blažević, dipl. ing. (dablazev@riteh.hr)
   - Željko Vrcan, dipl. ing., alternate member (Zeljko.Vrcan@riteh.hr)
   - Sandro Doboviček, dipl. ing. (Sandro.Dobovicek@riteh.hr)
   - Igor Džambas, dipl. ing., alternate member (Igor.Dzambas@riteh.hr)
   - Marko Kršulja, dipl. ing. (mkrsulja@riteh.hr)
   - Mauro Štefančić, dipl. ing., alternate member

IAESTE

IAESTE (*The International Association for the Exchange of Students for Technical Experience*) najveća je svjetska udruga za razmjenu studenata tehničkih i prirodnih znanosti. Udruga je utemeljena 1948. godine na *Imperial Colledge of London* i danas organizirano djeluje u više od 70 zemalja svijeta. U Hrvatskoj djeluje još od 1952. godine, a od 1992. kao međunarodna udruga za razmjenu stručnih praksi tehničkih i prirodnih znanosti IAESTE Croatia. Udruga već godinama uspješno djeluje i na Sveučilištu u Rijeci i to zahvaljujući volonterskom radu svojih članova, uglavnom studenata Tehničkog fakulteta. Od osnivanja 1952. godine 1.294 hrvatskih studenata dobila su priliku svoju stručnu praksu odraditi u inozemstvu, dok smo mi u Hrvatsku na stručnu praksu primili 1118 studenata iz cijelog svijeta. Posljednjih je desetak godina više od 400 studenata hrvatskih sveučilišta obavilo stručnu praksu

IAESTE (The International Association for the Exchange of Students for Technical Experience) is the world's largest association for the exchange of students of technical and natural sciences. The Association was founded in 1948 at the Imperial College of London, and the organization today operates in more than 70 countries around the world. It has been in Croatia since 1952 and since 1992 it has existed as an international association for the exchange of professional practice in technical and natural sciences. The Association has successfully operated within the University of Rijeka, thanks to the volunteer members which are mostly students of the Faculty of Engineering. Since its foundation in 1952, 1.294 Croatian students have gotten the opportunity to practice their profession abroad and also during the same time, Croatia has hosted 1118 students from around the world. During

posredstvom udruge IAESTE, od čega gotovo 40 studenata Tehničkog fakulteta Sveučilišta u Rijeci. Naši su studenti na stručnom usavršavanju bili u Portugalu, Njemačkoj, Mađarskoj, Velikoj Britaniji, Nizozemskoj, Grčkoj, Finskoj, Švedskoj, Japanu itd. Svima se njima pružila prilika da vide i upoznaju nove zemlje i kulture te steknu ne samo praktična i životna iskustva već i prijatelje. U istom je razdoblju lokalni odbor Rijeka ugostio više od četrdeset stranih studenata koji su na stručnom usavršavanju boravili na riječkom području. Za strane se studente svakoga ljeta organiziraju druženje i putovanja naših i stranih studenata pod nazivom GETT (*GET Together days*). Studenti Tehničkog fakulteta, članovi udruge, također su aktivni sudionici mnogobrojnih međunarodnih susreta, kongresa i seminara.

the last ten years more than 400 students of Croatian universities have performed professional practice through IAESTE Association, of which nearly 40 students are from the Faculty of Engineering University of Rijeka. Our students were in professional training in Portugal, Germany, Hungary, Great Britain, the Netherlands, Greece, Finland, Sweden, Japan, etc. They were all given the opportunity to see and learn about new countries and cultures as well as to acquire not only practical and life experiences, but also to make friends. In the same period LC Rijeka hosted more than 40 foreign students. For foreign students, every summer social events and excursions are organized which is referred to as GETT (GET Together days). Students of the Faculty of Engineering as members of the association are also active participants in numerous international meetings, conferences and seminars.

IEEE

IEEE je neprofitna organizacija osnovana 1884. s ciljem promicanja razvoja tehničkih znanosti u cijelome svijetu. Danas je vodeći autoritet na tom području uz čiju su pomoć ostvarena brojna nova dostignuća i definirani standardni industrije. Članovi su studenti, inženjeri iz gospodarstva, fakultetski profesori i ostali pripadnici akademske zajednice tehničkih znanosti. IEEE broji više stotina tisuća članova diljem svijeta. Mi smo studentski ogranak koji djeluje na Tehničkom fakultetu. Naše aktivnosti uključuju:

"Success stories" - Predavanja u kojima lokalni poduzetnici prenose studentima iskustva stečena na putu od Fakulteta do poslovnog uspjeha i odgovaraju na njihova pitanja.

"Movie nights" - Filmske večeri na kojima se prikazuju dokumentarci iz područja tehničkih znanosti. Večeri su otvorenog tipa za cijelu akademsku zajednicu.

"LinuxLab" - Interesna skupina koja se bavi promocijom Linux OS-a te u sklopu toga održava edukativna predavanja (i izvan prostorija Fakulteta) i pruža pomoć pri prijelazu na slobodni softver.

Također smo organizirali radionice robotike i programiranja te osigurali studentima Sveučilišta mogućnost sudjelovanja na „IEEEXtreme" 24-satnom natjecanju iz programiranja. Kada financije dopuštaju, sudjelujemo na međunarodnim kongresima i radionicama gdje predstavljamo svoj

IEEE is a nonprofit international organization founded in 1884. with a goal of promoting development of technical sciences. Today IEEE is the leading authority in this field, enabling a large number of technical advances and defi ning industry standards. Members of IEEE are students, engineers from the businesssector, university professors and other members of technical sciences academy. IEEE has more than a hundred thousand members worldwide. We are a student branch based on the Faculty of Engineering. Our activities include:

"Success stories" – Lectures held by local entrepreneurs, in which they talk about their experiences on getting from university to successful businesses, and answer students questions.

"Movie nights" – Evening gatherings showing documentaries from fields of technical sciences. The activity is open for the whole academic society.

"LinuxLab" – Interest group with goals of promoting the Linux OS, witch hosts educational lectures and helps with migrating to free software.

Our student branch also hosted workshops in robotics and programming, and made possible for our students to participate in "IEEEXtreme" 24-hour programming competition. With adequate available finances we participate in international congresses and workshops where we promote our student branch, our

ogranak, Fakultet i zavičaj.
Rad je u udruzi volonterski te sami članovi osim iskustva nemaju nikakve financijske dobiti.
Nažalost, kako bismo organizirali što više kvalitetnijih događaja, posjeta i sličnih aktivnosti, financijska su nam sredstva neophodna.

faculty and our country.
All the work done in our organization is based on volunteering, and all our members don't get any financial benefits, only experience.
Unfortunately, if we want to be able to organize a lot of high quality events, trips and similar activities we need financial aid.

NAJVAŽNIJE AKTIVNOSTI U PROŠLOJ GODINI:

- **Predavanje** "Svjetlosno onečišćenje", održano 25.03.2011.

- **Sudjelovanje** na "The IEEE Central European Student Branch Congress" (13.-15. 5. 2011)
Na kongresu je sudjelovalo pet sudionika iz Hrvatske a na njemu smo razmijenili dojmove, iskustva i kontakte s ostalim kolegama iz IEEE udruga brojnih zemalja Europe te čuli mnogobrojna zanimljiva predavanja.

- **Predavanje** na temu "Hrvatski svemirski program" koje je održao 8. 7. 2011. Marino Tumpić, voditelj zvjezdarnice Vidulini iz Žminja.

- **LinuxLab Open Source Weekend**

LinuxLab Open Source Weekend (OSW) je LinuxLab inicijativa koja potiče druženje i razmjenu znanja vezanih za slobodni softver i alternativne operacijske sustave. Inicijativa je pokrenuta u jesen 2010. godine i u prvoj godini održano je desetak radionica.

Organizaciji događaja uvelike su pomogli i članovi riječkog ogranka Hrvatske Udruge Linux Korisnika (HULK-Ri), te im se ovim putem zahvaljujemo.

Odazivom na radionice veoma smo zadovoljni, prosječna posjećenost bila je više od 10 ljudi po radionici, a reakcije posjetitelja su vrlo pozitivne.

Ove godine očekujemo da ćemo nastaviti s OSW inicijativom, uz još više raznolikih radionica.

- **LinuxLab konferencija Linux korisnika** (30. 9. – 1. 10. 2011.)

I ove godine sve je prošlo u ležernom tonu, 40-ak zaljubljenica (i zaljubljenika) došlo je u, za široke narodne mase *user unfriendly* terminu poslušati dva dana predavanja na različite teme o otvorenom softveru.

Skrećemo pozornost na to da smo ove godine imali i goste predavače iz Zagreba (Vukotić, Cihlar, Lujo) koji su podigli našu konferenciju sa županijskog na nacionalni događaj.

- **IEEE Croatia Student Branch & Gold Congress 2011** (8. 10. 2011.)

U Zagrebu je uspješno održan prvi SB & Gold kongres. Između ostalog postignuti su sljedeći ciljevi: ogranci su se bolje upoznali, raspravilo se o brojnim aktivnostima i idejama...

EESTEC

EESTEC (*Electrical Engineering Students European Association*) međunarodna je studentska organizacija koja okuplja studente elektrotehnike i računalstva. Trenutno broji 55 lokalnih odbora u ukupno 26 europskih država i ima više od 1700 članova. LC (Local Committee) Rijeka djeluje pri Tehničkom fakultetu u Rijeci od 1999. godine te broji 96 članova. Ciljevi udruge su poticanje, pomaganje i razvoj elektrotehnike, informatike i srodnih grana znanosti, ostvarivanje međunarodne suradnje, kontakata i poveznica s europskim zemljama s ciljem promicanja i vrednovanja cjelovite europske baštine. Udruga se bavi organizacijom skupova studenata elektrotehnike u Europi radi druženja i stručnog usavršavanja, nadalje održava komunikaciju sa studentima elektrotehnike širom Europe, organizira znanstvene manifestacije na području Primorsko-goranske županije, izdavanje publikacija, suradnju s drugim organizacijama, organizira međunarodne skupove u svrhu poznavanja različitih društvenih, kulturnih i jezičnih obilježja te razmjene ideja, ciljeva i stavova, sudjeluje na međunarodnim susretima i tribinama te razvija razne druge kulturne i društvene aktivnosti.

EESTEC (Electrical Engineering Students European association) is an international student organization that brings together students of Electrical Engineering and Computer Science. It has currently 55 local committees, in a total of 26 European countries with more than 1700 members. The LC (Local Committee) Rijeka has been working within the Faculty of Engineering since 1999, and counts 96 members. The objectives of the association are to encourage and assist the development of electrical engineering, information technology and related branches of the science, achieving international cooperation, contacts and connections with other European countries, with the aim of promoting and completing the evaluation of European heritage. The activities of the organizations include: organization of gatherings and training, European electrical engineering students, communication with electrical engineering students across Europe, organization of scientifi c events in the region of Primorsko - Goranska county, the issuing of publications, cooperation with other organizations, organization of international conferences in order to get to know the different social, cultural and

EESTEC Lokalni odbor Rijeka organizirao je 2 događaja u akademskoj godini 2010/2011.

Rijeka Carnival Exchange
(3. – 7. 3. 2011)
– studentska razmjena i sudjelovanje u glavnoj karnevalskoj povorci u sklopu grupe Fakulteta (15 sudionika)

Rijeka Summer Exchange
(19. – 25. 7. 2011)
– ljetna razmjena na kojoj je 20 sudionika upoznato s našom kulturnom baštinom, poviješću i prirodnim ljepotama.

linguistic characteristics and the exchange of ideas, goals and attitudes, participation in international meetings and stands, and developing various other cultural and social activities.

During the previous academic year, the EESTEC local comittee Rijeka organized two events:

Rijeka Carnival Exchange
(03. – 07. 03. 2011.)
– Student carnival exchange.

Rijeka Summer Exchange
(19. – 25. 7. 2011.)
–summer event, with 20 participants, who got to know Croatia's history, cultural heritage and natural beauties.

RITEH RACING TEAM

Formula Student međunarodno je natjecanje koje je inicirala međunarodna organizacija FISITA kako bi se studentske timove potaklo na timski rad. To je najpriznatije, najzahtjevnije svjetsko natjecanje studenata u konstruiranju, izradi i utrkama prototipa maloga trkaćeg bolida te prezentaciji poslovne studije njegove izrade. Uz projektiranje trkaćeg vozila po vrlo stogim pravilima, izradu i predstavljanje vozila mogućim investitorima, članovi tima moraju sami prikupljati sredstva za financiranje projekta, što umnogome ograničava mogućnosti, ali potiče kreativnost studenata. Iz tog razloga nije rijetkost da sudionici projekta kasnije budu regrutirani u redove vodećih stručnjaka automobilske industrije.

Projekt *Formula Student* započeo je 1981. godine u Sjedinjenim Američkim Državama. Početak toga projekta u Europi seže u 1988. godinu kada su se dva automobila iz SAD-a i dva iz Velike Britanije natjecala prvi put na natjecanju organiziranom izvan SAD-a. Danas u Europi ima više od 150 timova u koje se ubraja i *Riteh Racing Team*, dok ih je u svijetu više od 400. Godišnja natjecanja *Formule Student* gdje timovi trebaju pokazati svoj cjelogodišnji rad podržavaju najvažniji ljudi auto-moto industrije. Postoji osam službenih natjecanja *Formule Student* koja se održavaju u SAD-u (Kalifornija i Detroit), Brazilu (Sao Paolo), Velikoj Britaniji

Formula Student is an international competition that was initialized by international organisation FISITA to encourage student teams to participate in team work. This is the most recognized and complex world competition among students in engineering, craftsmanship and racing of small prototype racing vehicles. The competition also includes a business study presentation of the vehicles' makeup. In addition to the design of the racing vehicle, governed by strict rules and regulations, team members are required to present the prototype to potential investors in effort to raise funds for future development of the project. It is not uncommon for former project participants to be recruited into the ranks of leading experts.

The Formula Student project was initiated in 1981 in the United States; and in 1988, it made its way to Europe when two vehicles from U.S. and two more from United Kingdom competed for the first time outside of U.S. soil. Today in Europe, there are over 150 teams, including RitehRacing Team, and more than 400 teams worldwide. The annual Formula Student competitions where teams are represented by their work are supported by leaders of the automotive industry. There are eight official Formula Student competitions that are held in U.S. (California and Detroit), Brazil (Sao Paolo), Great Britain (Silverstone),

(Silverstone), Njemačkoj (Hockenheim), Italiji (Fiorano), Japanu (Fuji speedway) i Australiji (Melbourne).

Riteh Racing Team prvi je studentski tim *Formule Student* Sveučilišta u Rijeci, osnovan na Tehničkom fakultetu u siječnju 2008. godine. Već iste godine tim je sudjelovao s projektom vozila na natjecanju u Engleskoj na stazi Silverstone, u klasi u kojoj nastupaju timovi koji se prvi put natječu i koji nemaju još izrađeno vozilo ili njegove dijelove. Natjecanje se sastojalo od ocjene tehničkog projekta, ocjene troškova izrade vozila i ocjene poslovne prezentacije pred potencijalnim investitorima. *Riteh Racing Team* osvojio je na natjecanju 3. mjesto u ukupnom plasmanu uz posebne pohvale sudačkih timova, što je potaknulo tim na izradu vozila radi sudjelovanja u glavnoj klasi, kako bi se mogli natjecati i u utrkama. Nakon izrade prvog vozila tim je sudjelovao 2010. godine na natjecanju u Engleskoj na stazi Silverstone te zauzeo 33. mjesto u ukupnom poretku. Iste

Germany (Hochenheim), Italy (Fiorano), Japan (Fuji speedway), and Australia (Melbourne).

RitehRAcing Team is the first student-team of Formula Student founded in June 2008 by students attending the Faculty of engineering at the University of Rijeka. In that same year, the team participated in a competition with its "future vehicle project" held in Great Britain at Silverstone track in a category reserved for first time competing teams that may not have a running vehicle yet, or some of its parts. The scoring system of the competition graded the technical aspect(s) of the project, manufacturing costs, business plan, and the team's presentation to potential investors. RitehRacing Team finished third in the general placement and was especially praised by the judging teams. This accomplishment motivated the team to continue in developing the vehicle to compete in the main category and participate in races. After the first vehicle was made in 2010, the team competed again in Great Britain at Silverstone track finishing

Posjet *Riteh Racing Teama* beogradskom FS *Teamu*

godine tim je sudjelovao i na međunarodnom natjecanju u Hockenheimu u Njemačkoj gdje je osvojio 1. mjesto u ocjeni troškova i organizacije projekta (engl. *cost event*) te 39. mjesto u ukupnom poretku.

Da bi se vozilo smjelo natjecati, ono mora proći stroge testove sigurnosti, tehničke ispravnosti, razine buke, kočnica i mogućeg propuštanja tekućina pri bočnom nagibu od 60 stupnjeva. Natjecanje se sastoji od statičkih dijelova (ocjena tehničkog projekta, ocjena troškova i ocjena poslovne prezentacije), te od dinamičkih testova (ocjena ubrzanja na dionici od 75 m, ocjena vožnje osmica, ocjena sprinta i ocjena izdržljivosti). Utrka sprinta predstavlja kvalifikacijsku utrku za glavno natjecanje u izdržljivosti vozila. Prva tri natjecanja u pravilu voze po dva vozača, svaki u dva pokušaja. Utrku izdržljivosti u ukupnoj dužini od 22 km voze dva vozača,

in 33rd place in the general placement. Within the same year, the team also participated at the international competition in Hockenheim, Germany winning first place in costevent and 39th place in general placement.

For a vehicle to compete, it has to undergo rigorous testing including safety, noise levels, brakes, and possible fluid leakage test on a 60 degree tilt table. The competition is made of static events (scoring for technical aspects, cost, and business plan presentation) and dynamic events (scoring for acceleration on a 75 meter long run, skid pad, sprint, and endurance). The sprint race is also a qualifying race for the main event for endurance. The first three races are driven usually by two drivers each with two attempts. Finally, the endurance race is 22 kilometres in length and is driven by two drivers who are required to each drive half of the length. The longest

Posjet *Riteh Racing Teama* FS *Teamu* u Stuttgartu

s time da svaki od njih vozi polovicu puta. Najduže vrijeme za zamjenu vozača i ponovno pokretanje vozila je 3 minute. Maksimalni broj bodova koji se može prikupiti u svim natjecanjima je 1000. Za svaki dio natjecanja vodi se posebna rang-lista i prvima se dodjeljuje nagrada. Glavna je nagrada za prvo mjesto u ukupnom plasmanu. Velik broj timova otpada već na tehničkom pregledu, brojnim timovima se tijekom natjecanja događaju kvarovi ili lomovi, tako da tek manji broj prijavljenih timova uspijeva sudjelovati u svim natjecanjima.

U 2011. godini tim je imao velike planove, ali se oni, nažalost, nisu u potpunosti ostvarili. Nakon vrlo uspješne sezone očekivalo se da će tim nastaviti nizati uspjehe, no zbog tehničkih problema kao i zbog nedostatka financijskih sredstava, izrada drugog vozila nije završena na vrijeme. Tim je ipak sudjelovao na natjecanju u Mađarskoj na stazi Györ, gdje je bio jako dobro primljen od strane domaćina, te čak smatran jednim od jačih timova na natjecanju. Prvi dan natjecanja

time for switching drivers and starting the engine back up again is three minutes. The maximum sum of points that a team can win in all of the events is 1000.

For each event there is a separate ranking where the first place winner receives a reward. There is also a reward for the first place winner in the general placement. The majority of the teams do not even pass the scutineering and a great number of teams have malfunctions and breakage during the competition resulting in very few teams succeeding in all events.

In 2011, the team had great plans which were unfortunately not realised. After a very successful season, it was expected that the team would continue with excellent scores but due to mechanical failures and lack of sufficient funds, the manufacturing of the second vehicle was not completed as scheduled. The team managed to compete at Gyor track in Hungary where it was considered as one of the most respectable teams. During the first day of competition, the

Riteh Racing Team na natjecanju *Formula Student Hungary 2011.*

uspješno je odrađen tehnički pregled, dok je dio statičkih disciplina manje uspješno završen zbog već navedenih teškoća. Drugi dan natjecanja odrađen je ostatak statičkih disciplina, što je tim dovelo na sredinu ukupnog poretka. Treći dan natjecanja na rasporedu su bile dinamičke discipline. Dan uoči utrke i testa ubrzanja tim je još jednom odlučio testirati vozilo, provjeriti parametre kako bi postigli što bolji rezultat. Kako tim nije imao dovoljno financijskih sredstava, kupljen je polovni motor Yamaha R6, koji je pri testiranju otkazao. Nakon toga uslijedila je duga i mukotrpna borba s vremenom. Odlučeno je da se od dva motora napravi jedan koji će biti spreman za utrku, kako tim ne bi izgubio bodove u svim dinamičkim disciplinama. Cjelonoćnim radom motor je uspješno sastavljen, ali to, nažalost, nije bilo dovoljno da se utrka završi. Tim je morao odustati od natjecanja zbog kvara na motoru, te je osvojio 28. mjesto u ukupnom poretku.

U svibnju 2011. godine Rennteam Uni iz Stuttgarta pozvao je *Riteh Racing Team* kao svoje goste na predstavljanje svog bolida. U višednevnom druženju s članovima tima iz Stuttgarta tim je izmijenio vrlo korisna iskustva te se vratio s novim idejama i rješenjima kojima će unaprijediti svoje vozilo. Nakon kratkog odmora poslije natjecanja u Mađarskoj tim je u listopadu pozvan u posjet *Road Arrow Teamu* iz Beograda, gdje su imali priliku vidjeti kako oni izrađuju svoj bolid. Tjedan dana druženja s beogradskim kolegama bilo je malo, ali dovoljno da se tim vratio bogatiji iskustvom, znanjem i idejama, što je i cilj takvih posjeta.

U 2012. godini *Riteh Racing Team* ima u planu ukloniti nedostatke na vozilu, kupiti bolji motor, što do sada nisu bili u mogućnosti, a primarni je problem u radu vozila, te

scutineering was successful. The second day was reserved for static events, which once completed, led the team to the middle of the ranking list. The third day focused on dynamic events that were only partially successful due to mechanical failures. The day before the main race and the acceleration test, the team decided to check the vehicle once again and control parameters in hope of a better result. As the team was not financially supported, a used Yamaha R6 engine was bought, which unfortunately broke down during testing resulting in a long and painful struggle. At the end, it was decided to dismantle both the backup engine and the one that broke down to be able to use the available parts to put one together so that the team would not lose all of the points in the dynamic events. After long hours of working on the engine, one was assembled but was not enough to finish the race. The team had to withdraw because of a mechanical failure on the engine resulting in a 28thplace finish in the overall placement.

In May of 2011, Rennteam Uni of Stuttgart invited RitehRacing Team as a guest for their rollout. While being hosted in Stuttgart, the team acquired knowledge, exchanged useful experiences, and came back with fresh ideas and solutions for upgrading their vehicle.

Riteh Racing Team na službenoj fotografiji FS *Hungary 2011.*

sudjelovati na službenim *Formula Student* natjecanjima u Velikoj Britaniji, Njemačkoj i Italiji. Cilj je postići još bolji plasman nego na prethodnim natjecanjima te steći neophodna znanja koja će olakšati izradu novog bolida za sljedeću sezonu. *Riteh Racing Team* zahvaljuje svima koji su im do sada pomagali, kao i onima koji će ih tek podržati u ostvarivanju njihova cilja.

Članovi tima: Robert Blažić, Igor Felc, Goran Tomac, Hrvoje Novak, Velibor Vučković, Dean Frangen, Matija Šoban, Serđo Miletić, Mel Totman, Marin Jurjević, Wendy Herceg, te mentor prof. dr. sc. Vladimir Medica

www.ritehracing.uniri.hr

After a short break from Hungary, in October, the team was invited to Belgrade by Road Arrow Team to review how they were making their own vehicle. The week in Belgrade with colleagues was too short. However, the visit provided the team with new ideas and knowledge to return home with. In 2012, Riteh Racing Team is planning to remove all malfunctions, buy a better engine (which was difficult until now), and participate in the official Formula Student competitions in England, Germany and Italy. Our aim is to be even better, score higher, and learn new things that will help us build a new vehicle for the next season. Riteh Racing Team wants to thank all those who supported us and hope for continued support in the future as we get closer to reaching our goal.

www.ritehracing.uniri.hr

Prezentacija novog bolida za 2011. ispred Tehničkoga fakulteta u Rijeci

VODOCIKL / WATERBIKE

Vodocikl je plovilo pokretano isključivo snagom ljudskih mišića. Prema međunarodnim pravilima studentske regate brodocikala studenti sami projektiraju, izrađuju i voze brodocikl na regati. Budući da ne postoje stroga pravila o izgledu brodocikla, rješenja su inovativna i ovise samo o znanju i spremnosti ekipa. To pridonosi atraktivnosti regate jer se natječe velik broj unikatnih, ali vrlo sofisticiranih plovila.

Natjecanje je višednevno, a osmišljeno je kao cjelina od osam disciplina koje se vrednuju pojedinačno i ukupno. U pojedinim disciplinama dan je naglasak na neku od performansi broda, što daje izrazito sportski karakter pa nije neobično da se ekipe kondicijski pripremaju tokom čitave godine. Opet, neke discipline su zabavnoga karaktera, gledateljima vrlo zanimljive pa se stoga pazi i na kreativnost i dizajn. Discipline koje određuju navedene karakteristike su:

- dužinska utrka (oko 1000 m),
- sprint na 100 m,
- slalom po stazi organizatora,

The Waterbike is a vessel driven exclusively by the power of human muscles. According to international rules of student waterbike regatta, the students design, develop and drive their waterbikes all by themselves. Since there are no strict rules about the look of waterbikes, solutions are innovative and depend only on the knowledge and preparedness and race readiness of teams. This enhances the attractiveness of the regatta, since it is a competition of a large number of unique, but very sophisticated vessels.

The contest lasts over several days, and is designed as a unit of eight sports events that are to be assessed individually and totally. In some sports events, the emphasis is given to some of the ship performances, which gives an outstanding sporty character and it is not unusual for teams to work on being fit and on their top shape throughout the year. And yet, some sports events are entertaining, very interesting for spectators and therefore careful attention is given to creativity and design. The sports events that define the features listed above are:

Model novog vodocikla

- naprijed-natrag na kratkoj stazi,
- vožnja o stupu – mjerenje sile,
- ubrzanje na kratkoj udaljenost,
- utrka iznenađenja, prema zamisli organizatora, ocjena tehničkih svojstava plovila.

Međunarodna regata brodocikala svoje početke bilježi prije trideset godina u Njemačkoj. Isprva je to bio skup studenata s raznih njemačkih sveučilišta te viših škola koji su svoje druženje nastojali upotpuniti natjecanjem u granama znanosti i tehnologije koje najbolje poznaju. Time započinju prva natjecanja plovila na nožni pogon. Uključivanjem sveučilišta iz Nizozemske regata postaje međunarodna, te je 1988. godine održana prva regata izvan granica Njemačke. Te godine na regati u Delftu postavljen je temelj današnjega koncepta organizacije, a to je da susret prelazi iz jednodnevnog u višednevni događaj, svake se godine mijenja mjesto održavanja, te u regati mogu sudjelovati timovi iz cijele Europe. Danas se na regati pojavljuju studenti svih važnijih europskih sveučilišta na kojima postoji studij brodogradnje, čime regata u brodograđevnoj industriji izaziva veliko zanimanje budući da okuplja samu

- the length of the race (1,000 m),
- sprint to 100 m,
- the slalom on the organizer's course,
- back and forth on a short track,
- force measurement,
- acceleration on the short distance,
- surprise race, according to the idea of the organizer, the assessment of the technical performances of the vessel.

International waterbike regatta dates back to 1980s, in Germany. At first it was a group of students from various German universities and colleges who tried to contribute to their companionship with the competition in the branches of science and technology they were very familiar with. As a result, we have the first competitions of the foot-powered vessels. Involving the university from the Netherlands, the Regatta takes on an international character, and in 1988, the first regatta outside Germany took place. That year, the regatta in Delft set the foundation of today's concept of the organization, that is to say that this event undergoes the changes and becomes a multi-day event, each year changing the venue, so that the regatta is open to teams from across Europe. Today, students from all major European universities where

Pogled straga

europsku elitu studenata brodogradnje koji će i sami jednog dana biti vodeći stručnjaci u svojoj struci.

Studenti Tehničkog fakulteta u Rijeci prvi su put sudjelovali na regati 1999. godine u Zagrebu, u organizaciji Hrvatskog udruženja studenata brodogradnje koje djeluje na Fakultetu strojarstva i brodogradnje u Zagrebu. Na regati u gradu Flensburgu 2000. godine riječki su studenti također nastupili, da bi nakon toga uslijedilo razdoblje od devet godina nesudjelovanja. Na jubilarnoj tridesetoj regati održanoj u gradu Rostocku 2009. godine po treći put sudjelovao je Tehnički fakultet iz Rijeke s novim timom od osam studenta, koji su uz pomoć mentora profesora Brune Čalića i komentora profesora Roka Dejhalle izradili brodocikl "Zvizda".

PROJEKT NOVOG VODOCIKLA ZA 2011. GODINU

Studenti brodogradnje i strojarstva uz potporu mentora razvili su koncept novog plovila, čija je gradnja započela u prostorima hale Sveučilišta na trsatskom Kampusu izgradnjom kolijevke.

Trup novog vodocikla bit će izgrađen od kompozitnog materijala (karbon), metodom *vacuum bagginga*. To će omogućiti značajnu redukciju mase u odnosu na konvencionalne materijale u brodogradnji. Također, karbon odlikuju izvrsna mehanička svojstva važna za čvrstoću plovila.

Za dodatno osiguranje protiv izvijanja predviđena su tri poprečno postavljena aluminijska profila. Između dva pramčana poprečna profila postavit će se još dva uzdužna profila na kojima će biti smješteni vozači vodocikla. Oni će se nalaziti u

there is a study of naval architecture appear on the site so that the regatta is of significant interest for the shipbuilding industry because it brings together the very European elite of naval architecture students who will also be leading experts in their profession one day.

The students of the Faculty of Engineering in Rijeka participated for the first time, in the regatta in Zagreb, in the year 1999, organized by the Croatian Student Association of naval architecture, which is active at the Faculty of Mechanical Engineering and Naval Architecture in Zagreb. The Rijeka students also participated in the regatta in Flensburg, in 2000 but afterwards there was the nine-year period of non-participation. On the anniversary of the thirtieth regatta held in Rostock in 2009, for the third time, the Faculty of Engineering in Rijeka participated with a new team of eight students, who, with the help of the mentor, professor Bruno Calic and co-mentor, professor Rocco Dejhalla created the waterbike "Zvizda".

A NEW WATERBIKE PROJECT FOR THE YEAR 2011

With support of their mentors, the students of Naval Architecture and Mechanical Engineering developed the concept of a new vessel, and by building cradles they started its construction in the halls of the University premises on Trsat campus. The hull of the new waterbike will be constructed from composite material (carbon), using vacuum bagging. This will allow a significant reduction in weight compared to conventional materials in shipbuilding. Also, carbon is characterized by excellent mechanical properties important for the strength of the vessel.

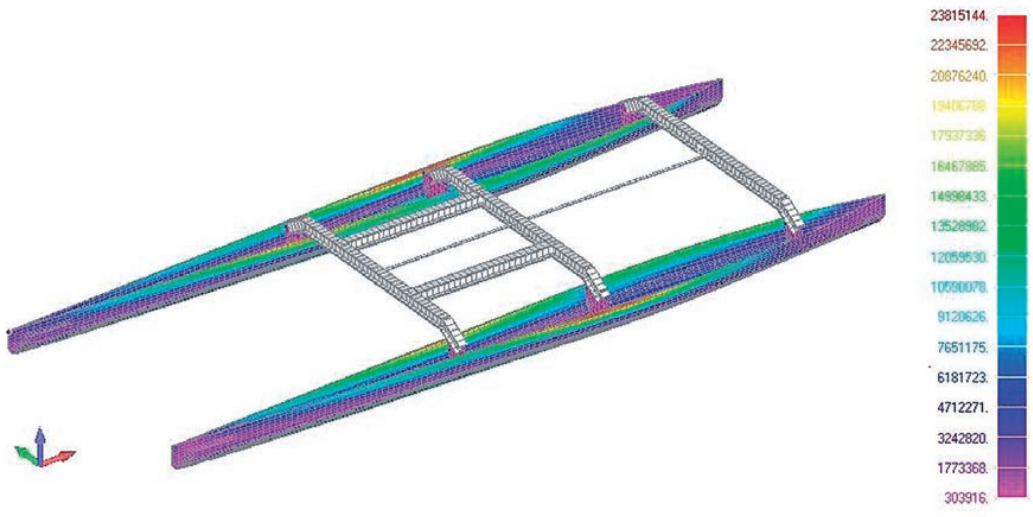
poluležećem položaju, gledajući prema naprijed, a pogon će ostvarivati putem lančanog prijenosa

Prijenos će se ostvarivati pomoću osovine lančanog prijenosa vozača (pogonjene na pedale) koja će biti spojena na pramčani multiplikator. Nadalje, on će putem osovine postavljene u centralnoj liniji broda biti spojen na petu vijka i kormila.

Za potrebe detaljne analize projekta provedena je analiza upotrebom poznatih numeričkih rješavača, kako bismo proračunali sile, momente i maksimalna naprezanja koja djeluju na vodocikl.

Three transverse aluminium profiles are secured as extra insurance against buckling. Between two bow transverse profiles, another two longitudinal profiles will be fixed where the riders of the hydro bike will have their seat. They will be in half-lying positions, looking forward, and propulsion will be generated through the chain transmission

The transmission will be accomplished through the chain drive shaft of the driver (pedal-powered) attached to the bow multiplier. Furthermore, with the shaft mounted in the center line of the ship, it will be attached through the heel of the screw and the rudder. For the purposes of detailed analysis of the project, an analysis was made using the known numerical solver so as to calculate power, torque and the maximum stresses acting on the waterbike.



Analiza naprezanja primjenom numeričkih rješavača