



REPUBLIC
OF CROATIA

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UNIVERSITY OF ZAGREB
FACULTY OF MINING, GEOLOGY
AND PETROLEUM ENGINEERING



University of
Zagreb

DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.



FACULTY OF
MINING, GEOLOGY
AND PETROLEUM
ENGINEERING

1 INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

- 1.1 family name(s) Drljača
1.2 given name(s) Branko
1.3 date, place and country of birth 27 April 1993, Rijeka, Republic of Croatia
1.4 student identification number or code 0195029532

2 INFORMATION IDENTIFYING THE QUALIFICATION

- 2.1 name of qualification and (if applicable) title conferred (in original language) magistar inženjer naftnog rudarstva; mag. ing. petrol.
2.2 main field(s) of study for the qualification Petroleum Engineering, course General Petroleum Engineering
2.3 name and status of awarding institution and study programmes accreditation Sveučilište u Zagrebu, Rudarsko-geološko-naftni fakultet. Public act higher education institution. Accreditation for the University Graduate Study Programme in Petroleum Engineering issued by the Ministry of Science, Education and Sports of the Republic of Croatia on 2 June 2005.
2.4 name and status of institution (if different from 2.3) administering studies —
2.5 language(s) of instruction/examination Croatian

3 INFORMATION ON THE LEVEL OF THE QUALIFICATION

- 3.1 level of qualification University graduate study programme (second cycle degree), with master thesis
3.2 official length of programme Two-year study programme, 120 ECTS credits
3.3 access requirement(s) University undergraduate study programme offering at least 180 ECTS credits

4 INFORMATION ON THE CONTENTS AND RESULTS GAINED

- 4.1 mode of study Full-time study
4.2 programme requirements and learning outcomes

The university graduate study programme in Petroleum Engineering, Petroleum Engineering subprogramme, educates students for all tasks related to exploration and exploitation of hydrocarbons and geothermal water. This study programme expands fundamental knowledge in the area of technical and natural sciences and qualifies students to apply that knowledge developing their ability of original elaboration and/or application of ideas in solving new or unknown situations in the profes-

sion and in the wider interdisciplinary context. The study programme relies to a great extent on laboratory work and fieldwork.

THE FOLLOWING COMPETENCES ARE ACQUIRED BY THE STUDY PROGRAMME:

- knowledge of geological processes and the origin of hydrocarbon and geothermal reservoirs;
- planning, carrying out and monitoring explorations in order to determine hydrocarbon reserves and geothermal reservoirs potential;
- carrying out laboratory research in order to determine physical and mechanical properties of reservoir rocks and fluids;

8.1 Types of institutions

UNIVERSITIES (*sveučilišta*) are institutions of higher education which offer university study programmes in at least two research areas and/or art areas covering a number of disciplines. Exceptionally, universities may also offer vocational study programmes. Universities may be comprised of constituent units which are legal entities and which are called FACULTIES (*fakulteti*) or ART ACADEMIES (*umjetničke akademije*). Universities and their constituent units offer study programmes, and engage in research and other professional and art-related work.

POLYTECHNICS (*veleučilišta*) and SCHOOLS OF VOCATIONAL HIGHER EDUCATION (*visoke škole*) are higher education institutions which offer vocational study programmes. The two types of institution differ in the range of programmes they offer: polytechnics are institutions of vocational higher education which offer vocational study programmes in three or more disciplines. Their mission is to offer career-oriented programmes, which often include practical work experience.

Public universities are established by law; public polytechnics and schools of vocational higher education are established by a decree of the Croatian Government; private higher education institutions are established by the founder.

8.2 Types of programmes

UNIVERSITY STUDY PROGRAMMES prepare students for work in research and higher education institutions, as well as in private and public sectors. Students in these programmes receive an education that enables them to develop and use scholarly and professional knowledge at the appropriate level.

VOCATIONAL STUDY PROGRAMMES provide students with a career-ready level of knowledge, skills and competences required for work in specific vocations.

8.3 Accreditation of higher education institutions and study programmes

Higher education institutions (HEIs) and their study programmes are subject to an evaluation process in order to get accreditation. The request for accreditation is submitted to the Ministry in charge of higher education, which then requests an evaluation from the National Council for Higher Education (NCHE). The NCHE appoints an expert committee which, in cooperation with the Agency for Science and Higher Education, performs the evaluation and submits a report. A draft report is then sent to the HEI for feedback and clarifications. The National Council makes a final evaluation of the proposed study programme or of the higher education institution and recommends to the minister issuance or denial of accreditation.

8.4 Organisation of university study programmes

Since 2005, all study programmes in Croatia measure student work load in ECTS credits. A student is typically required to earn 60 ECTS credits in one academic year.

UNIVERSITY UNDERGRADUATE PROGRAMMES – FIRST CYCLE (*preddiplomski sveučilišni studij*) normally take three years in which students are required to earn 180 ECTS credits. A minority of undergraduate university programmes in Croatia are offered as four-year programmes in which students are required to earn 240 ECTS credits. Upon completion students are awarded a diploma and the academic degree of University Bachelor (*sveučilišni prvostupnik*) with an indication of the field of study. Students graduating in technical sciences receive the academic degree of University Bachelor in Engineering (*sveučilišni prvostupnik inženjer*) with an indication of the field of study.

Students holding a first cycle university degree can apply for admission to university graduate programmes or vocational specialist graduate programmes, or enter the workforce.

UNIVERSITY GRADUATE PROGRAMMES – SECOND CYCLE (*diplomski sveučilišni studij*) normally take two years in which students are required to earn 120 ECTS credits. A minority of graduate programmes in Croatia are offered as one-year programmes in which students are required to earn 60 ECTS credits. The total number of credits earned in the first and second cycle programmes must be at least 300. Upon completion students are awarded a diploma and the academic degree of Master of (*magistar struke*) with an indication of the field of study. Students graduating in technical sciences receive the academic degree of Master in Engineering (*magistar inženjer*) with an indication of the field of study.

Students holding a second cycle university degree can continue their studies in university postgraduate programmes or enter the workforce.

INTEGRATED UNDERGRADUATE AND GRADUATE UNIVERSITY PROGRAMMES – FIRST AND SECOND CYCLES (*integrirani preddiplomski i diplomski sveučilišni studij*) normally take five or six years in which students are required to earn 300 or 360 ECTS credits respectively. Upon completion students are awarded a diploma and the academic degree of Master of (*magistar struke*) with an indication of the field of study. Upon completion of integrated first and second cycle programmes in medicine, dentistry and veterinary medicine students receive the academic degree of Doctor (*doktor struke*) with an indication of the field of study (e.g. Doctor of Medicine, etc.).

Students with this degree can continue their studies in university postgraduate programmes or enter the workforce.

UNIVERSITY POSTGRADUATE PROGRAMMES – THIRD CYCLE (*poslijediplomski sveučilišni studij*) normally take three years. Upon completion students are awarded a diploma and the academic degree of Doctor of Philosophy (or Doctor scientiarum), or Doctor of Fine Art (*doktor znanosti* or *doktor umjetnosti*), with an indication of the academic field or art form.

UNIVERSITY SPECIALIST POSTGRADUATE PROGRAMMES (*poslijediplomski sveučilišni specijalistički studij*) normally take one to two years. Upon completion students receive a diploma and the academic degree of University Specialist (*sveučilišni specijalist*) with an indication of the field of study.

Organisation of vocational study programmes

SHORT CYCLE VOCATIONAL STUDY PROGRAMMES (*stručni studij*) normally take two or two-and-a-half years, in which students are required to earn between 120 and 150 ECTS credits respectively. Upon completion students receive a diploma (*svjedodžbo*) and a Short-Cycle Vocational Degree (*stručni pristupnik*) with an indication of the field of study.

Students holding a short-cycle vocational degree can apply for admission to higher levels of vocational study programmes, or enter the workforce.

VOCATIONAL UNDERGRADUATE PROGRAMMES – FIRST CYCLE (*stručni preddiplomski studij*) normally take three years in which students are required to earn 180 ECTS credits. A minority of vocational programmes in Croatia are offered as four-year programmes in which students are required to earn 240 ECTS credits. Upon completion students are awarded a diploma and the vocational degree of Vocational Bachelor (*stručni prvostupnik*) with an indication of the field of study. Students graduating in technical sciences receive the vocational degree of Vocational Bachelor in Engineering (*stručni prvostupnik inženjer*) with an indication of the field of study.

Students holding a first cycle vocational degree can apply for admission to vocational specialist graduate programmes, or to second cycle university graduate programmes under conditions determined by the university, or to enter the workforce.

VOCATIONAL SPECIALIST GRADUATE PROGRAMMES – SECOND CYCLE (*stručni diplomski specijalistički studij*) normally take two years in which students are required to earn 120 ECTS credits. A minority of vocational specialist graduate programmes in Croatia are offered as one-year programmes in which students are required to earn 60 ECTS credits. The total number of credits earned in first and second cycle programmes must be at least 300. Upon completion of vocational specialist graduate programmes students are awarded a diploma and the vocational degree of Vocational Specialist (*stručni specijalist*) with an indication of the field of study. Students graduating in technical sciences receive the vocational degree of Vocational Specialist in Engineering (*stručni specijalist inženjer*) with an indication of the field of study, and students graduating in the fields of medicine, dentistry or veterinary medicine receive a diploma vocational degree (*diplomirani*) with an indication of the field of study.

Students holding a second cycle vocational degree can enter the workforce, or they can also apply, under conditions determined by universities, for transfer to a university diploma study programme (with the proviso of taking differential exams) and admission to a university postgraduate programme.

Educational requirements for admission into study programmes

Higher education institutions independently set the minimum educational requirements for admission to university undergraduate programmes and first cycle vocational programmes. Normally, the minimum requirement for admission to university undergraduate programmes is completion of a four-year secondary school; the minimum requirement for enrolment into first cycle vocational programmes is completion of a three- or four-year secondary school.

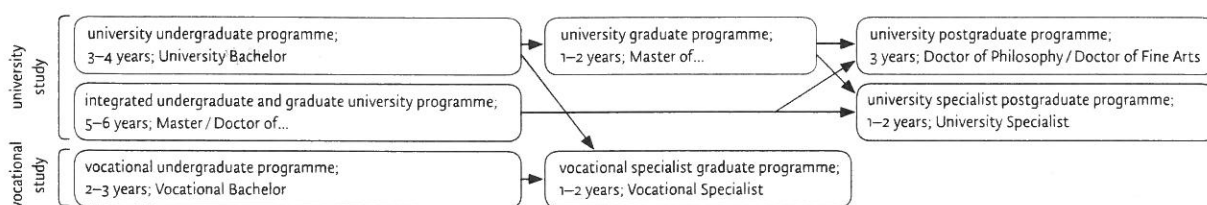
The admissions process to first cycle study programmes at Croatian universities is normally based on secondary school grades and an entrance examination. Each constituent unit of a university usually carries out its own entrance examination. The admissions process to first cycle programmes at polytechnics and schools of vocational higher education is also based on secondary school grades and sometimes an entrance examination, but the use of the latter is less common than in the case of universities.

The minimum educational requirement for enrolment in university graduate programmes is completion of a university undergraduate programme. Universities can allow students with a higher education vocational degree to enrol in university graduate programmes under specially defined requirements.

The minimum educational requirement for enrolment in vocational specialist graduate programmes is completion of a university undergraduate programme or a vocational programme (first cycle). The minimum educational requirement for enrolment in university postgraduate programmes is completion of a specific graduate programme. Normally, the requirement for enrolment in a university postgraduate programme is completion of a university graduate programme. Students who have completed pre-Bologna undergraduate programmes lasting at least four academic years (*sveučilišni dodiplomski studij*) can apply for admission to Bologna postgraduate programmes as well.

Grading scale

The Croatian national grading scale consists of five grades with numerical equivalents: *izvrstan* – 5 (excellent); *vrlo dobar* – 4 (very good); *dobar* – 3 (good); *dovoljan* – 2 (sufficient); *nedovoljan* – 1 (fail). The minimum passing grade is 2 (sufficient).



- analysis and interpretation of the field and laboratory research results;
- application of analytical and numerical methods in hydrocarbon and geothermal reservoir engineering and exploitation;
- planning, carrying out and monitoring petroleum engineering technology processes (drilling, well completion and workover operations, preparation for oil and gas transportation);
- carrying out engineering interventions during oil and natural gas production, gathering and transportation, as well as geothermal reservoir exploitation;

- planning, carrying out and monitoring procedures in petroleum engineering;
- knowledge of related legislation of the Republic of Croatia and European Union.

CERTAIN SKILLS ARE ADDITIONALLY DEVELOPED

- communication skills, team work, managing complex situations, acquisition and analysis of various data, integration of knowledge, independent thinking and decision making, and presentation of one's own conclusions, knowledge and arguments supporting those decisions to professional and general public in a clear and unambiguous manner.

4.3

programme details

	hours	ECTS credits	date of examination	grade	subject
1	74	6.0	2.2.2016.	4	Drilling Engineering 2
2	75	6.0	22.2.2016.	4	Multiphase Fluid Flow in Porous Rock
3	59	4.5	18.2.2016.	5	Drilling Techniques 2
4	60	4.0	4.2.2016.	4	Applied Geophysics
5	59	5.5	1.4.2016.	5	Well Completion and Workover 2
6	60	4.0	19.2.2016.	5	Fluid Characterization and Phase Behavior Modelling
7	75	5.5	13.6.2016.	4	Wellbore Fluids 2
8	74	5.5	20.6.2016.	5	Well Stimulation
9	59	5.5	6.9.2016.	4	Oil and Gas Production 2
10	59	5.5	16.2.2017.	3	Gathering and Transportation of Oil and Gas 2
11	60	4.0	24.8.2016.	3	Well Control
12	60	4.0	14.6.2016.	5	Explosion Proof Techniques
13	74	6.0	7.9.2017.	4	Offshore Activities
14	60	5.0	24.2.2017.	4	Well Test Analysis
15	74	6.0	24.2.2017.	5	Exploitation of Groundwater Resources
16	60	5.0	28.2.2017.	5	Hydrocarbon Reservoirs Modelling
17	60	4.0	27.2.2017.	5	Energy Markets
18	60	4.0	9.2.2017.	5	Geopolitics of Energy Production and Supply
19	300	25.0		+	Master Thesis
20	60	5.0	7.7.2017.	5	Business Management

additional ECTS credits

1	0.0	Poromechanics & Hydraulic Fracturing*
2	0.0	LNG Master Class*
3	0.0	Enhanced Oil Recovery (EOR) & Enhanced Gas Recovery (EGR)*

study/work placement mobility

- * Inter-University Centre Dubrovnik (IUC), Dubrovnik, Republic of Croatia, winter semester 2016/2017., Summer school

total ECTS credits 120

beginning of the study—end of the study 1 October 2015—16 February 2018

diploma number 602-04/18-01/14

4.4	grading scheme and, if available, grade distribution guidance	The success of the students is continually graded through preliminary exams, seminars, projects, programmes and reports on performed exercises. Depending on a course, this continual grading may represent up to 75% of the final grade, while written and/or oral examination represents at most 80% of the final grade.
4.5	average grade and overall classification of the qualification	Cummulative grade point average: 4.4 CUM LAUDE (WITH HONOR)

5 INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1	access to further study	After completing the university graduate study programme a student gains the possibility to access the postgraduate study programme in the Republic of Croatia and abroad.
5.2	employability and professional status, if applicable	Master's degree in Petroleum Engineering entitles its holder to bear the legally protected title of Master in Petroleum Engineering and to perform professional work in the area for which the degree was awarded, as one of conditions required for membership in the Chamber of Engineering. After completion of the graduate study programme in petroleum engineering a student has acquired competences for performing tasks specified in the point 4.2 of this document. The aforementioned tasks enable the degree holder to be employed in industrial or public sector, research and education institutions as well as in professional associations.

6 ADDITIONAL INFORMATION

6.1	additional information	—
6.2	further information sources	Republic of Croatia, Ministry of Science, Education and Sports, http://www.mzos.hr ; University of Zagreb, http://www.unizg.hr ; Faculty of Mining, Geology and Petroleum Engineering, http://www.rgn.hr

7 CERTIFICATION OF THE SUPPLEMENT

7.1	place and date	7.2	name and signature	7.3	capacity
	Zagreb, 16 February 2018		Full Professor Zoran Nakić, PhD		Acting Dean

