UNIVERSITY OF BERGEN
Department of Chemistry

EUROBACHELOR
Renewal application

Name and address of the University:	University of Bergen P.O.Box 7800, NO-5020 Bergen, Norway
VAT number	08 24 36 76
Faculty and Department responsible for the Bachelor study programme:	Faculty of Mathematics and Natural Sciences, Department of Chemistry
Name (in the original language) of the qualification and its translation into English:	Norwegian: Bachelor i naturvitenskap Studieprogram: Kjemi English: Bachelor of Science Study Programme: Bachelor‘s Programme in Chemistry
Name and address of the person responsible for producing the self-evaluation report:	Assoc. Professor Dr. Svein Are Mjøs Department of Chemistry University of Bergen P.O.Box 7800, NO-5020 Bergen, Norway Email: Svein.Mjos@uib.no Phone: :+47 5558 3553/Fax: +47 5558 9490
Number of ECTS credits which the degree programme carries:	180
Number of credits (including the Bachelor Thesis) derived from modules/course units in chemistry, physics, biology or mathematics:	150
Number of ECTS credits assigned to the Bachelor Thesis	15
The academic year in which this degree programme was introduced:	Academic year 2010/2011
Entry qualifications for this degree programme:	Minimum requirement for admission to higher education is the successful completion of Norwegian upper secondary education (13 years of schooling, extended from 12 years from 1997). Upon graduation pupils are presented with the Upper School Leaving Certificate. Alternatively, admission may be gained by means of other qualifications recognised as being equivalent to the general matriculation standard. The study programmes at The Faculty of Mathematics and Natural Sciences at University of Bergen have additional entrance requirements relating to science subjects from upper secondary education. More information at Norwegian Universities and Colleges Admission Service (NUCAS): http://www.samordnaopptak.no/info/english/
Year and Reference number of of the original **EUROLABEL®** award	2014, Certificate Number EB 1308

Contents

1. Programme status

1.1. *Was the* ***EUROLABEL®*** *labelled programme modernised or amended? If not, why was it kept in the original scheme? How are the requirements of laboratory safety met? Please describe*.

The programme has been amended according to the recommendations in the award letter, i.e. the Bachelor Project Thesis has been extended from 10 to 15 ECTS credits. In addition a completely new compulsory course, KJEM290 (Scientific Communication in English, 5 ECTS credits) is included to ensure that the students have profound knowledge in a major European language in addition to their mother tongue. Course descriptions for KJEM298 (15 credits bachelor project) and KJEM290 are given in appendix 2a and 2b, respectively.

In order to allow for a higher degree of flexibility the students can select one of the physics courses PHYS101 (Basic Course in Mechanics and Thermodynamics), PHYS102 (Basic Course in Electricity and Magnetism, Optics, and Modern Physics), PHYS111 (Mechanics 1) or PHYS112 (Electromagnetism and Optics), while they previously had to take PHYS102, which is built on PHYS101, which in practice meant that the majority of our students took 20 ECTS credits of physics. This amendment is done to give increased possibilities for mobility (see Appendix 1 for study schedules). This amendment is awaiting approval by the faculty, but we expect no reluctance, since the purpose in in accordance with the faculty's intentions. The requirements of 10 ECTS credits physics are also more in accordance with the requirements in other Norwegian bachelor programs in chemistry.

KJEM123 (Experimental inorganic chemistry) has replaced KJEM122 (Synthetic Inorganic Chemistry) since spring semester 2017. KJEM123 covers the majority of the topics in KJEM122, but it has a slightly broader scope. Course description for KJEM123 is enclosed in Appendix 2c.

There are no other major changes in the programme. However, all courses included in the programme are subject to continuous minor revisions and evaluations. This to ensure that the contents of the courses are reflecting the most recent and up-to-date knowledge.

Laboratory safety: In order to ensure that laboratory safety requirements are met, all students that are to attend one of the laboratory courses must complete a HES-course with special focus on work in laboratories. In this course, the students are taught safe handling of chemicals and given hands-on experience with fire extinction and first aid. Specific HES-instruction are also given in the labs before each exercise is performed. An extended HES-course is required for students that continue in a Master programme or PhD-programme. Any accidents on the laboratory courses are reported to the HMS coordinator through the HMS deviation system. There have been no major injuries on laboratory courses recent years. The numbers of incidents that led to, or could have led to, minor injury or exposure to hazardous chemicals were 6 (2011), 3 (2012), 2 (2013), 3 (2016) and 4 (2017).

1.2. *Please provide brief details about efforts during the past period for modernisation the programme content with respect to the scientific development in the discipline*.

As stated above, the courses are continuously revised and evaluated. The courses in the first semesters (KJEM110, KJEM120, KJEM123 and KJEM130) are evaluated yearly, since the first

semesters typically are critical for student dropout. Courses later in the programme are evaluated approximately every second year. In these processes, the relevancy of the course contents is an obvious concern. During 2017 the Faculty of Mathematics and Natural Sciences initiated a revision of all bachelor programmes (and all courses included in the programmes) offered from the faculty. In this revision the scientific development within all the disciplines comprising the Chemistry Bachelor Programme was addressed.

1.3. *Are electronic media for teaching, learning and/or assessment like the EChemTest officially used in the* ***EUROLABEL®*** *programme? Please describe*.

At the University of Bergen a new E-learning platform ("Mitt UiB", "My UiB") has been introduced through the last few years. The main system component of the new platform is the open source version of Canvas. Mitt UiB include a range of integrated services and will comprise the majority of the University's digital learning environment.
The EChemTest is not officially used in our bachelor programme. We are nevertheless considering implementing the EChemTest and we are looking into how the EChemTest may be integrated into the university-wide platform.

1.4. *Were there any ECTS credit values changed or shifted?*

The Bachelor Project in Chemistry was extended from 10 to 15 ECTS credits (A course with the new code KJEM298 replace the previous KJEM299, the main difference is an increase of the duration of the experimental work). In general, we are not allowed to have courses that differ from 10 ECTS credits in the bachelor programs. KJEM298 and KJEM299 are the only exceptions at the Faculty of Mathematics and Natural Sciences.

1.5. *Describe how the recommendations from the award letter were applied.*

The Label Committee expressed the following recommendations:

<u>Recommendation 1:</u> *Development possibilities for university teachers should be improved which means additional pedagogic and didactic courses should be offered and teachers should be encouraged to attend these courses in addition to the obligatory ones at the beginning of their career*.

All scientific teaching staff are required to take 20 ECTS credits pedagogics in the beginning of their career. The traditional pedagogics courses are offered by Program for University Pedagogy. In recent years the program has extended their capabilities to offer courses that are relevant for more experienced university teachers, particularly in the use of the new learning management system (Canvas based "Mitt UiB") and the use of information technology in teaching, with courses like UPED636 (How to Design and Teach Blended Courses), UPED637 (How to Create Effective Instructional Videos) and UPEDxxx (Digital assessment).

bioCEED, Centre of Excellence in Biology Education, was established at the University of Bergen in 2014. Although originally focused on biology, the centre has a much broader scope and offers seminars and short courses relevant for the entire Faculty of Mathematics and Natural Sciences.

Also The Division of Student Affairs now offer a series of short (2 hours) seminars, typically 3 each semester, on various teaching topics relevant for experienced university instructors. Recent topics

have been team based learning, active learning, and design of study programs.

<u>Recommendation 2:</u> *Evaluation of workload should be done continuously and content of courses should be adjusted properly.*

All courses are evaluated frequently and workload is one of several issues that are addressed in the evaluations. We have now standardized the questions measuring workload in the evaluations, by telling the students how many hours of work per we expect on average on a 10 credits course (13h) and thereafter ask the student's opinion about how many credits they mean the workload is equivalent to.

<u>Recommendation 3:</u> *The department should think about rearranging courses in year 3 to improve conditions for outgoing mobility students.*

The amendments we have done regarding the requirements for physics, described in Section 1.1, which means that the students can take PHYS101 instead of PHYS102, and not both, allow the students to shuffle KJEM211 from the 5th to the 3rd semester. This will leave only elective courses in the 5th semester. See also appendix 1 for an illustration of an "exchange-friendly" study plan.

One thing that takes flexibility out of our study plan is the requirement the bachelor project should be 15 ECTS credits, while the University of Bergen requires that all other courses should be 10 ECTS credits. This hider the students to shuffle courses between the last 3 semesters. If we could move some of the learning outcomes from KJEM298 to KJEM290 to create two courses of 10 credits it will give the students more flexibility. The bachelor project would then be focused on the experimental work and the thesis, while all the preparation for the project would be in KJEM290. There seem to be bachelor programmes with Eurolabel that has a similar solution, and we would very much like to discuss with the labelling committee whether this can be approved as an option to get courses of 10 credits.

<u>Recommendation 4:</u> *Course evaluation data and respond to student feedback should be more easily accessible for students on the web, or maybe just the information how to access these data should be distributed in better ways.*

All evaluations and feedback are now posted in the University's "Quality Data Base" (https://quality.app.uib.no). The Quality Data Base is administered by the central Student Administration and will in the future be integrated with the learning management system "Mitt UiB" (canvas based). This will provide easy access to relevant data. Currently, all the web pages for our courses (each course has a separate web page with course description and other relevant information) links directly to this data base.

1.6. *Describe how the conditions from the award letter were fulfilled.*

The award was subject to two conditions:

<u>Requirement 1:</u> *As a requirement of the* ***CHEMISTRY EUROBACHELOR®*** *Label, students have to show that they have profound knowledge in their mother tongue and one additional major European language. The curriculum has to assure this for quality reasons and thus, even if the students have already very good knowledge in one of these additional languages some course with assessment is to be included in the curriciulum.*

In order to fulfil this requirement a new compulsory language course (KJEM290 – Scientific Communication in English, 5 ECTS credits) has been included in the programme. The objectives of the course are that the students will be able to express themselves precisely and scientifically in English, both in writing and in oral presentations (See complete course description in Appendix 2b).

<u>Requirement 2:</u> A second requirement from the point of ***CHEMISTRY EUROBACHELOR®*** *Label is the length of the bachelor thesis project. This should be extended to at least 15 ECTS.*

This requirement has been met by increasing the project work period to 6 weeks. The Bachelor Project in Chemistry (given a new code KJEM298) is now 15 ECTS credits. (See complete course description in Appendix 2a)

2. Graduates

Please give the numbers of graduates from the labelled course for every graduation year.

The Eurobachelor label to the Bachelor program at UiB took effect from August 2014. Therefore, there is only one batch of students that has graduated with Eurobachelor status (15 students in 2017). The number of students that started in each batch and the number of students that graduated are shown in the table below. Batches with Eurobachelor status are shown in bold. The number of graduates for 2018 is an estimate based on the number of students that are now doing their bachelor project.

Year	Students started		Year	Students graduated
2009	25	→	2012	20
2010	32	→	2013	18
2011	18	→	2014	10
2012	16	→	2015	11
2013	24	→	2016	10
2014	**35**	→	**2017**	**15**
2015	**38**	→	**2018**	**(18)**
2016	**43**			
2017	**30**			

3. Employability

Please supply the information of the employability of the labelled course graduates (e.g. direct employment, Master or PhD course at same or other university, unemployment, ...):

Our bachelor degree is designed to be used both as a qualifying degree for our master program in chemistry, and as an independent education that qualifies for direct employment.

The majority of the graduates from our bachelor programme continues with a master degree in chemistry at the Department of Chemistry. The numbers vary considerably from year to year, and range from 40 to 100%, with a median of 73%, in the period 2006 to 2017.

We have no direct measures of the fraction of our B.Sc. graduates that are directly employed. However, we can assume that their possibilities for direct employment have been significantly reduced in recent years. Based on typical jobs that are offered to chemical engineers and B.Sc. graduates in chemistry, particularly in Western Norway, we can assume that a large fraction of our graduates previously was employed in the petroleum sector. Due to restructuring in this sector, approximately 20-30% of petroleum related jobs in Norway have been lost in the period from 2014 to 2017.

4. Other cycle label(s)

Please describe if you have or plan to have the other cycle labelled by the ***EUROLABEL®*** *and give your practical experience or expectations:*

We do not currently plan to have the Master-cycle labelled by the **EUROLABEL®** .

5. Mobility

Please use the form further below in order to register your study programme in the Student Mobility Database. The database can be freely accessed via http://transparency.inp-toulouse.fr/ . It helps selecting appropriate study programmes or courses for mobile students.

The form is given in Appendix 3.

6. Any other comments / information

Please summarise any relevant information you wish to communicate to ECTN.

We do not have a separate certificate mentioning the Eurolabel given to the students. The ECTN/Eurolabachelor logo is given on the diploma, and we have therefore enclosed this instead.

Which months is the most appropriate for you to start of the validity term of the awarded label? You may best use the validity term if it starts exactly with the registration months in your university.

It would be appropriate to start the validity term from August 2018.

7. Statement of Applicant

I, Svein Are Mjøs, hereby agree that this department will, if renewed the EUROBACHELOR® label, continue to recognise Bachelor degrees in chemistry awarded by other institutions holding the EUROBACHELOR® label as providing automatic right of access (but not of admission) to chemistry second cycle (Master) programmes offered by this department.

I hereby agree that this department will, if awarded the EUROBACHELOR® label, display the official EUROBACHELOR® logo on the website of this department and remove this label from the website as soon as the validity term of the awarded EUROBACHELOR® label expired.

I hereby authorise ECTN to archive the information provided as well as to use it (without giving the source) to further scientific, statistical, promotional, and educational use.
I agree that the Self-Evaluation Report together with the Site Visit Report will be published on the ECTN website in case the label is awarded.

Bergen, dd.mm.YYYY

Associate Professor Svein Are Mjøs
Head of Programme Committee

Professor Knut Børve
Head of Department

Appendix 1. Overview of the Bachelor's Programme in Chemistry at the University of Bergen

Overview of the Bachelor's Programme in Chemistry at the University of Bergen, current recommended schedule. Compulsory courses in **bold** text. Names of courses are given on the following page.

Year	Recommended Atumn courses	Recommended Spring Courses
1	**1.1 EXPHIL** (10 ECTS credits) **1.2 MAT101** or **MAT111** (10 ECTS credits) **1.3 KJEM110** (10 ECTS credits) **HES-course** (0 ECTS credits)	**1.4 KJEM130** (10 ECTS credits) **1.5 MOL100** (10 ECTS credits) 1.6 Elective[1] (10 ECTS credits)
2	**2.1 KJEM120** (10 ECTS credits) **2.2 KJEM131** (10 ECTS credits) 2.3 Elective[1] (10 ECTS credits)	**2.3 PHYS102**[2] (10 ECTS credits) **2.4 KJEM123** (10 ECTS credits) **2.5 KJEM140** (10 ECTS credits)
3	3.1 **KJEM210** (10 ECTS credits) 3.2 Elective[1] (10 ECTS credits) 3.3 Elective[1] (10 ECTS credits)	**3.4 KJEM250** (10 ECTS credits) **3.5 KJEM290** (5 ECTS credits) **3.6 KJEM298** (15 ECTS credits)

Notes:

1) Elective courses has to include 10 credits chosen among the following courses: MAT102 (Elementary Calculus II), MAT121 (Linear Algebra), STAT101 (Elementary Statistics), STAT110 (Basic Course in Statistics), INF109 (Computer Programming for Science) or INF100 (Introduction to Programming Methodology). Of these, students are highly recommended to choose MAT102 in the first spring semester.

2) Because PHYS102 (Basic Course in Electricity and Magnetism, Optics, and Modern Physics) is based on PHYS101 (Basic Course in Mechanics and Thermodynamics), students (with little physics from upper secondary education) are encouraged to take PHYS101 in the second autumn semester. We are currently in the progress (waiting for approval by the faculty) of changing the physics requirements to at least one of the following: PHYS101, PHYS102, PHYS111 (Mechanics 1), PHYS112 (Electromagnetism and Optics). This change is done primarily to facilitate mobility in the fifth semester by making space for KJEM210 in the third semester. See Figure 1 below.

a) Current recommended study schedule

3S	KJEM250	KJEM298	KJEM290
3A	KJEM210	Elective	Elective
2S	KJEM140	KJEM123	PHYS102
2A	KJEM131	KJEM120	Elective (PHYS101)
1S	KJEM130	MOL100	Elective (MAT102)
1A	EXPHIL	MAT101/111	KJEM110

b) Mobility friendly study schedule

3S	KJEM250	KJEM298	KJEM290
3A	Elective	Elective	Elective
2S	KJEM140	KJEM123	MOL100
2A	KJEM131	KJEM120	KJEM210
1S	KJEM130	PHYS102 or EXPHIL	Elective (MAT102)
1A	PHYS101 or EXPHIL	MAT101/111	KJEM110

Figure1) Current recommended study schedule (a) and more mobility friendly study schedule (b), with recommendations shown in yellow and free elective courses shown in green.

Overview of course codes, names, ECTS credits and teaching semester (Autumn/Spring)

	Code	Course title	Credits	Semester
Year 1, Autumn				
1.1	EXPHIL	Examen Philosophicum	10	A & S
1.2	MAT101/111	Elementary Calculus I / Calculus I	10	A
1.3	KJEM110	Chemistry and Energy	10	A & S
Year 1, Spring				
1.4	KJEM130	Organic Chemistry	10	S
1.5	MOL100	Introduction to Molecular Biology	10	S
1.6	Elective			
Year 2, Autumn				
2.1	KJEM120	Chemistry of the Elements	10	A
2.2	KJEM131	Organic Synthesis and Analysis	10	A
2.3.	Elective			
Year 2, Spring				
2.3	PHYS102	Electricity and Magnetism, Optics, and Modern Phys.	10	S
2.4	KJEM123	Experimental Inorganic Chemistry	10	S
2.5	KJEM140	Molecular Physical Chemistry	10	S
Year 3, Autumn				
3.1	KJEM210	Chemical Thermodynamics	10	A
3.2	Elective			
3.3	Elective			
Year 3, Spring				
3.4	KJEM250	Analytical Chemistry	10	S
3.5	KJEM290	Scientific Communication in English	5	S
3.6	KJEM298	Bachelor Project in Chemistry	15	S
Math/Statistics/informatics, 10 ECTS credits among the following:				
M.a	MAT102	Elementary Calculus II	10	S
M.b	MAT121	Linear Algebra	10	S
M.c	STAT101	Elementary Statistics	10	A
M.d	STAT110	Basic Course in Statistics	10	A
M.e	INF100	Introduction to Programming Methodology	10	A & S
M.f	INF109	Computer Programming for Science	10	A & S
Physics, Accepted alternatives to PHYS102				
P.a	PHYS101	Basic Course in Mechanics and Thermodynamics	10	A
P.b	PHYS111	Mechanics I	10	S
P.c	PHYS112	Electromagnetism and Optics	10	A

Appendix 2a. Course description KJEM298

3.6 / KJEM298 / Bachelor Project in Chemistry			
Course Level	Semester	Year	Number of Credits
Bachelor	Spring	3rd year	15 ECTS credits
Name of lecturer	Professor Tanja Barth		
Objectives and Content	The aim of the course is to give the student experience of scientific work methods by planning a scientific project, performing the work and presenting the results orally and in writing. The course will include an introduction to library searches and correct use of citations, HSE evaluations and training in scientific presentation. The student will define a small theoretical or practical research project in cooperation with internal or external supervisors, perform the work and present the results orally to the research and student groups and in a written report.		
Learning Outcomes			
Knowledge	The student will • have knowledge of the required structures and content of a scientific project and a scientific report • have knowledge of the ethical standards and formats required for referring to scientific results and publications • know the health and safety requirements for working in the laboratories at the Department of Chemistry		
Skills	The student will • have experience in finding information on a given subject using scientific literature resources in chemistry • have the ability to structure the work of an independent scientific project • be able to apply scientific methodology to solve a specific problem in chemistry • be able to write a chemically valid and correctly structured report from a scientific investigation		
Competences	The student will • be able to evaluate the quality and relevance of his/her own results • have experience with presenting the results of his/her work orally and in writing • be able to contribute to scientific discussions of his/her own work		
Compulsory activities	80 % attendance to the introduction part is required. Oral presentation of the project. Individual written report		
Prerequisites	1.3 / KJEM110, 2.1 / KJEM120, 2.4 / KJEM123, 1.4 / KJEM130, 2.2 / KJEM131, 2.5 / KJEM140		
Recommended prerequisites			
Recommended reading	Literature recommended by lecturer		
Teaching methods	Lectures:35 (h) (Introduction Library course: 10 hours HSE information: 3 hours Presentation techniques: 8 hours Introduction to scientific methodology and written presentation: 12 hours Ethics in science 2 hours. Project work (Either in groups of 2-3 students or single student projects): 6 weeks		
Assessment methods	Individual written report. Each student is assessed individually. Participants in a group may get different grades based on the written report		
Language of instruction	Norwegian		

Appendix 2b. Course description KJEM290

<table>
<tr><td colspan="5">3.5 / KJEM290 / Scientific Communication in English</td></tr>
<tr><td>Course Level</td><td>Semester</td><td colspan="2">Year</td><td>Number of Credits</td></tr>
<tr><td>Bachelor</td><td>Spring</td><td colspan="2">3rd year</td><td>5 ECTS credits</td></tr>
<tr><td colspan="2">Name of lecturer</td><td colspan="3">Associate Professor John Georg Seland</td></tr>
<tr><td>Objectives and Content:</td><td colspan="4">The course will give the students an introduction to the most common terms used in English scientific literature, with a specific focus on chemistry. The teaching includes regular lectures and seminars where the students present and discuss scientific text that they have written.
The goal is that the students will learn to express themselves precisely and scientifically in English, both in writing and in oral presentations.</td></tr>
<tr><td colspan="2">Learning Outcomes</td><td colspan="3"></td></tr>
<tr><td>Knowledge</td><td colspan="4">The student
Knows scientific (with a focus on chemistry) terms and phrases used in English
Knows the structure and basis of a scientific article</td></tr>
<tr><td>Skills</td><td colspan="4">The student
Can produce a scientific text in English using the correct terms and phrases</td></tr>
<tr><td>Competences</td><td colspan="4">The student
Can communicate scientific material in English both in writing and in oral presentations.</td></tr>
<tr><td colspan="2">Compulsory activities</td><td colspan="3">Attend five of six seminars. Write a (popular-) scientific paper in English</td></tr>
<tr><td colspan="2">Prerequisites</td><td colspan="3">None</td></tr>
<tr><td colspan="2">Recommended prerequisites</td><td colspan="3">None</td></tr>
<tr><td colspan="2">Recommended reading</td><td colspan="3">Literature recommended by lecturer</td></tr>
<tr><td colspan="2">Teaching methods</td><td colspan="3">Lectures and seminars (24h)</td></tr>
<tr><td colspan="2">Assessment methods</td><td colspan="3">Approved (popular-) scientific paper, including an oral presentation of it. Approved attendance of the seminars</td></tr>
<tr><td colspan="2">Language of instruction</td><td colspan="3">English</td></tr>
</table>

Appendix 2c. Course description KJEM123

<table>
<tr><td colspan="5">2.4 / KJEM123 / Experimental inorganic chemistry</td></tr>
<tr><td>Course Level</td><td>Semester</td><td colspan="2">Year</td><td>Number of Credits</td></tr>
<tr><td>Bachelor</td><td>Spring</td><td colspan="2">2nd year</td><td>10 ECTS credits</td></tr>
<tr><td colspan="2">Name of lecturer</td><td colspan="3">Associate Professor Erwan le Roux / Professor Karl W. Törnroos</td></tr>
<tr><td>Objectives and Content</td><td colspan="4">The course aims to provide an introduction and overview of the most common experimental characterization and basic knowledge in inorganic chemistry. The laboratory course illustrates the use and properties of various inorganic substances as a function of pH and chemical environment, and investigates methods of the classification and identification of inorganic ions based on unknown samples. The laboratory courses provide a knowledge-based illustrative review of trends and type of reactions from the chemistry of elements to d-transition metals.
In addition, the course emphasizes some general and introductory concepts from molecular symmetry, point groups theory, nomenclature, geometry, coordination mode and crystal- and ligand-field theory within d-metal complexes. All together the courses also pinpoint some rudimentary knowledge in spectroscopic techniques including an understanding on how energy transitions in the molecules and structures are determined.</td></tr>
<tr><td colspan="2">Learning Outcomes</td><td colspan="3"></td></tr>
<tr><td>Knowledge</td><td colspan="4">The student:
has practical knowledge of quantitative analysis of inorganic compounds
has broad knowledge of the basic concepts and theories in molecular symmetry and its relevance within experimental spectroscopic characterization
have knowledge of nomenclature, formula, coordination geometries, chemical equations and basic reaction types
have knowledge of the chemical bond and the theories that explain the electronic properties within d-block metal complexes and their location in the periodic table</td></tr>
<tr><td>Skills</td><td colspan="4">The student:
is able to depict the most important and common methods for experimental characterization of inorganic compounds
can perform independent practical laboratory work, and to document experimental results through report writing
can carry out simple synthesis of inorganic compounds
is able to apply relevant theories, experimental methods and analysis tools for the identification, quantification and structure elucidation of chemical compounds
can conduct simple investigations of a chemical problem in a scientific way, and to analyze and interpret the results in relation to relevant theories
can solve quantitative and qualitative problem in inorganic chemistry
can evaluate and reflect on their own and external results, including assessment of uncertainty and error sources
can assess various aspects of health, safety and environment (HSE), can safely handle chemical substance based on knowledge of the characteristics and risk factors, and can perform a risk assessment for the use of certain chemical compounds</td></tr>
<tr><td>Competences</td><td colspan="4">The student:
can formulate hypotheses and evaluate their relationships with the empirical results
can work both independently and in team on qualitative and quantitative analyses</td></tr>
<tr><td colspan="2">Compulsory activities</td><td colspan="3">Laboratory course (84h) with reports</td></tr>
<tr><td colspan="2">Prerequisites</td><td colspan="3">1.3. KJEM110, 2.1 KJEM120</td></tr>
<tr><td colspan="2">Recommended prerequisites</td><td colspan="3"></td></tr>
<tr><td colspan="2">Recommended reading</td><td colspan="3">C. Housecroft, A.G. Sharpe, Inorganic Chemistry, 4th ed. (2012)</td></tr>
<tr><td colspan="2">Teaching methods</td><td colspan="3">Lecture: 26 h, Laboratory course: 84h</td></tr>
<tr><td colspan="2">Assessment methods</td><td colspan="3">Written exam (4h)</td></tr>
<tr><td colspan="2">Language of instruction</td><td colspan="3">Norwegian</td></tr>
</table>

Appendix 3. Scheme for mobility database

Student Mobility Database

Table to be filled in on each programme that is submitted to **EUROLABEL®** application. Data contained in the table will be used by ECTN and published on http://transparency.inp-toulouse.fr/. By submitting the data the responsible authorities of the respective university agree with data basing and publication.

Institution (& ERASMUS Code)	University of Bergen	N-BERGEN 01
	Universitetet i Bergen	
Faculty/Department	Department of Chemistry	
Qualification awarded (& ERASMUS Subject Area Code)	Bachelor I naturvitenskap Studieprogram: kjemi	ERASMUS Subject Area Code: 13.3
Level of qualification (Bologna & EQF)	Bachelor in Chemistry	Number of EQF: 6
Name of qualification (programme)	Bachelor's Programme in Chemistry	
	Bachelor i naturvitenskap Studieprogram: kjemi	
Person in charge of this programme	Ass. Professor Dr. Svein Are Mjøs Department of Chemistry University of Bergen P.O. Box 7800 NO- 5020 Bergen NORWAY E-mail: Svein.Mjos@uib.no Phone: + 47 55 58 35 53	
Specific admission requirements	Minimum requirement for admission to higher education is the successful completion of Norwegian upper secondary education (13 year of schooling, extended from 12 years from 1997). Upon graduation, pupils are presented with the Upper School Leaving Certificate. Alternatively, admission may be gained by means of other qualifications recognised as being equivalent to the general matriculation standard. The study programmes at The Faculty of Mathematics and Natural Sciences at University of Bergen have additional entrance requirements relating to science subjects from upper secondary education. More information at Norwegian Universities and Colleges Admission Service (NUCAS): http://www.samordnaopptak.no/info/english/	
Language of instruction	Norwegian	
Website of the programme	http://www.uib.no/	

Short description of the programme (500 characters)	The study covers basic theories and methods within chemistry. The practical training in chemistry takes place in laboratory courses giving thorough training in synthesis, analysis and physical measurements. Supporting subject within mathematics, physics, molecular biology and IT leads to interdisciplinary perspectives and a wide basis for considering issues in chemistry. The bachelor's project in chemistry ensures introduction to planning and performing scientific work as well as critical assessment of sources and presenting the results in writing. The study provides general competence in collecting and evaluating scientific information, and ways of presenting knowledge.
Mode of study	Full time
Duration	Number of semesters in the program: 6
Number of ECTS credits	Number of ECTS in the whole program: 180
Academic year in which this degree was, or will be, introduced (valid for 5 years)	2014
Beginning of the program (month):	August
Academic calendar:	Autumn semester: week 33 – 51. Spring semester: week 2 – 24.
Application deadline (if any):	Application deadline: 15 April (1 March for applicants who deviate from the general matriculation standard). The Norwegian Universities and Colleges Admission Service, NUCAS, coordinates the admission to regular undergraduate studies at all the universities in Norway.
Hyperlink to course guide: **ECTS Catalogue**	*http://www.uib.no/en/node/52066/courses*
Hyperlink to further documents	
EUROLABEL® awarded?	*Award by ECTN 26 February 2014, Certificate N° EB 1308 of the* **EUROLABEL®** *awarded* **EUROBACHELOR®**
Person to be contacted for information about this programme	*Student advisor, Unni Buanes, Studierettleiar@kj.uib.no, Phone: +4755583445*
Last modification of this programme	*2015*

Appendix 4. Example of Diploma

UNIVERSITETET I BERGEN

Det matematisk-naturvitenskapelige fakultet

VITNEMÅL

Jenny Birte ##### Loddebolt

født 2. februar 1911

er den 15. desember 2017 tildelt graden

Bachelor i naturvitenskap

Studieprogram: Kjemi

European Chemistry Thematic Network ECTN EUROBACHELOR®

Bergen, 1. mars 2018

DEKAN

UNIVERSITATIS BERGENSIS SIGILLUM

FAKULTETSDIREKTØR

Side 1 av 4

Appendix 5. Example of diploma supplement

Diploma Supplement — University of Bergen

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.

1 Information identifying the holder of the qualification

1.1 Family name(s):

1.2 Given name(s):

1.3 Date of birth:

1.4 National identification:

2 Information identifying the qualification

2.1 Name of qualification and (if applicable) title conferred (in original language):
Bachelor i naturvitskap
Study programme: Bachelor's Programme in Chemistry

2.2 Main field(s) of study for the qualification:
Chemistry

2.3 Name and status of awarding institution (in original language):
Universitetet i Bergen
University receiving state support

2.4 Name and status of institution administering studies (in original language):
Universitetet i Bergen
University receiving state support

2.5 Language(s) of instruction/examination:
Norwegian, English

3 Information on the level of the qualification

3.1 Level of qualification:
Undergraduate/lower degree (Ch. 8; Degrees and qualifications).

3.2 Official length of the programme:
3 years, 180 Norwegian studiepoeng/180 ECTS credits.

3.3 Access requirements:
General matriculation standard (Ch. 8; Admission requirements for higher education).

4 Information on the contents and results gained

4.1 Mode of study:
Full time study.

4.2 Programme requirements:
The Bachelor's degree is achieved after a three year course of study (180 ECTS credits). The first semester comprises examen philosophicum, a basic mathematical subject and a specialist introductory field of study.

The degree requirements include achievement of at least 90 ECTS credits in specialist subjects. The subjects for the remaining credits are optional. One or more independent dissertations with a total value of at least 10 ECTS credits must incorporate subjects in the degree programme.

4.3 Programme details:
See enclosed ECTS-transcript.

4.4 Grading scheme and, if available, grade distribution guidance:
See item; Credit system and Grading

Diploma Supplement

University of Bergen

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 qualification (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.

1 INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1 Family name(s):
1.2 Given name(s):
1.3 Date of birth *(day/month/year)*:
1.4 Student identification number or code:

2 INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language):
Bachelor i naturvitenskap
The title bachelor is protected by law in Norway.

2.2 Main field(s) of study for the qualification:
Chemistry

2.3 Name and status of awarding institution (in original language):
Universitetet i Bergen, a public university. The quality assurance system was evaluated and approved by the Norwegian Agency for Quality Assurance in Education in 2014.

2.4 Name and status of institution administering studies:
See section 2.3

2.5 Language(s) of instruction/examination:
Norwegian, English

3 INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1 Level of qualification:
First Cycle/Level 6, Norwegian Qualifications Framework for Lifelong Learning

3.2 Official length of the programme:
3 years in full-time mode (180 ECTS credits).

3.3 Access requirements:
Higher Education Entrance Qualification
Specific entrance requirements: REALFA

4 INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1 Mode of study:
Full-time.

4.2 Programme requirements:

Objectives:

The goal of the Bachelor's programme in Chemistry is to give a thorough theoretical and practical introduction to the main disciplines in chemistry, with regard to both the traditional topics in chemistry, and modern inter-disciplinary use of chemical knowledge.

Content:
The study covers basic theories and methods in organic, inorganic, physical and theoretical chemistry. The practical part of chemistry is covered in laboratory courses that provide thorough training in synthesis, analysis and measurements of physical properties. Minor subjects in mathematics, physics and molecular biology give broader knowledge, which is needed in order to evaluate problems in a larger chemical perspective, and to communicate chemical knowledge in different contexts.

Required learning outcome
A candidate who has completed his or her qualification should have the following learning outcomes defined in terms of knowledge skills and general competence:

Knowledge
The candidate
- knows the basic chemical principles, concepts and theory
- can describe characteristic properties and types of compounds of the elements based on their structure and placement in the periodic table
- can describe the theories concerning the state of substances, and the structure of atoms and molecules based on basic quantum mechanics
- can use chemical terminology and describe the basic types of reactions, classes of substances and their properties
- can describe chemical equilibriums, simple reaction mechanisms and the most usual types of structures in organic and inorganic chemistry
- is able to apply this knowledge to solve known quantitative and qualitative problems in chemistry

Skills
The candidate
- is able to handle chemical substances in a safe manner, based on their properties and the possible risk factors in play, and to perform a risk analysis for the use of certain chemical substances
- can perform synthesis of organic and inorganic substances
- can use common analytical techniques to identify and quantify organic and inorganic substances
- can investigate and document chemical properties of a given system in a systematic and reproducible manner, and can interpret the results using relevant theory
- can interpret, evaluate and compare chemical information and data
- is able to make good written and oral presentations of scientific topics and results

General knowledge
The candidate
- can apply the correct principles for different measuring techniques
- can use and evaluate results
- can plan and execute practical laboratory work including instrumentation
- has good knowledge about HSE
- is able to use libraries and scientific data bases to find relevant information
- can communicate about scientific problems in chemistry, with both other students and the general public
- demonstrates an understanding of and respect for scientific values such as openness, precision and reliability

4.3 Programme details:

Name: *Diploma holder*

Course		Semester	Credits	Grade	Grade distribution A B C D E
Mandatory modules:					
EXPHIL-MNSEM	Examen Philosophicum	2014 autumn	10	B	
MAT101	Elementary Calculus I	2015 autumn	10	B	
Specialization:					
KJEM110	Chemistry and Energy	2014 autumn	10	C	
KJEM130	Organic Chemistry	2015 spring	10	D	
MOL100	Introduction to Molecular Biology	2015 spring	10	A	
KJEM120	Chemistry of the Elements	2015 autumn	10	B	
STAT101	Elementary Statistics	2015 autumn	10	C	
KJEM131	Organic Synthesis and Analysis	2016 spring	10	C	
KJEM140	Molecular Physical Chemistry	2016 spring	10	B	
PHYS102	Basic Course in Electricity and Magnetism, Optics, and Modern Physics	2016 spring	10	D	
KJEM122	Synthetic Inorganic Chemistry	2016 autumn	10	B	
KJEM210	Chemical Thermodynamics	2016 autumn	10	D	
KJEM250	Analytical Chemistry	2017 spring	10	B	
KJEM290	Scientific communication in English	2017 spring	5	Passed	
KJEM298	Bachelor's Project in Chemistry	2017 spring	15	B	
The degree includes:					
MAT121	Linear Algebra	2015 autumn	10	E	
KJEM230	Analytic Organic Chemistry	2016 autumn	10	B	
MNF115	Natural Science Perspective on Sustainable Development	2016 autumn	10	C	
			Total: 180.0		

Credit system and grading

The academic year normally runs from mid-August to mid-June and lasts for 10 months. Courses are measured in "studiepoeng", considered equivalent to the European Credit Transfer System standard (ECTS credits). The full-time workload for one academic year is 1500 - 1800 hours of study / 60 "studiepoeng".

The Norwegian grading system consists of two grading scales: one scale with the grades pass or fail and one graded scale from A to E for pass and F for fail. The graded scale has the following qualitative descriptions:

A	Excellent	An excellent performance, clearly outstanding. The candidate demonstrates excellent judgement and a very high degree of independent thinking.
B	Very good	A very good performance. The candidate demonstrates sound judgement and a high degree of independent thinking.
C	Good	A good performance in most areas. The candidate demonstrates a reasonable degree of judgement and independent thinking in the most important areas.
D	Satisfactory	A satisfactory performance, but with significant shortcomings. The candidate demonstrates a limited degree of judgement and independent thinking.
E	Sufficient	A performance that meets the minimum criteria, but no more. The candidate demonstrates a very limited degree of judgement and independent thinking.
F	Fail	A performance that does not meet the minimum academic criteria. The candidate demonstrates an absence of both judgement and independent thinking.

The assessment is criterion referenced.

Grade distribution

The distribution of grades is shown by the percentage for courses using the graded scale A – F. Fail (F) is not included in the distribution. All results from the last five years are included in the calculation. The distribution is also shown for courses that have been active for less than five years. There has to be at least 10 approved results during the period.

4.4 Grading scheme and, if available, grade distribution guidance:
See section 4.3

4.5 Overall classification of the qualification (in original language):
Not applicable

5 INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study:
The bachelor's degree is at an academic level that is sufficient for application to relevant second cycle studies.

5.2 Professional status:
The award entitles the holder to practice unregulated professions requiring graduate competences.

6 ADDITIONAL INFORMATION

6.1 Additional information:
Not applicable

6.2 Further information sources:
http://www.uib.no/

7 CERTIFICATION OF THE SUPPLEMENT

7.1 Date:
Date of original qualification:

7.2 Signature: _____

Tone Stokka

7.3 Capacity: Higher Executive Officer

7.4 Official stamp:

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

Higher education in Norway

The Ministry of Education and Research has the overall responsibility for higher education in Norway. Higher education is offered by four types of higher education institutions: university *(universitet)*, specialized university institution *(vitenskapelig høyskole)*, accredited university college *(akkreditert høyskole)*, and university college with accredited study programmes *(høyskole med akkrediterte studier)*. The differences between the types of higher education institutions are related to their self-accrediting authority.

All public and private higher education in Norway is subject to the Act Relating to Universities and University Colleges (Lov 2005-04-01 nr 15)[1]. An institution's right to award specific degrees and the prescribed lengths of study are codified in Regulations on Degrees and Titles protected by Law (FOR 2005-12-16 nr 1574). The awarding of master's degrees is regulated by the Regulations on requirements for awarding a master's degree (FOR 2005-12-01 nr 1392).

Since 2002 Norway has adhered to the objectives of the Bologna Process in the European Higher Education Area. Most of the elements have been implemented through the reform of the Norwegian higher education system carried out in 2003. Central to the reform has been a transition from the former degree system to the bachelor's, master's and doctoral degree structure, with a few exceptions.

Norwegian higher education qualifications make up the levels from 6 to 8 of the Norwegian Qualifications Framework for Lifelong Learning (NQF) from 2011, which is the national overarching qualifications framework[2]. It describes the levels of qualifications as defined by the total learning outcomes in terms of the knowledge, skills and general competence that graduates at various levels should have achieved[3]. NQF was referenced to the European Qualifications Framework (EQF) in 2014.

Quality assurance and accreditation of institutions and programmes

The Norwegian Agency for Quality Assurance in Education (NOKUT) is an autonomous governmental agency which provides external supervision and control of the quality of Norwegian higher education, as well as of all tertiary vocational education[4]. NOKUT accredits new study programmes, controls the existing ones, and provides a cyclic evaluation of the institutions' quality assurance systems for educational provision.

An accredited higher education institution is granted the right to offer educational provision, without having to apply to NOKUT for specific programme accreditation, in accordance with the authority that its institutional category implies. Universities may without external accreditation establish study programmes at all levels. Accredited university colleges have to apply for the accreditation of programmes at master and doctoral levels. In those fields where specialized university institutions and accredited university colleges have the right to award doctorates or corresponding degrees, they may themselves decide which study programmes and disciplines the institution shall provide.

University colleges without institutional accreditation must apply to NOKUT for accreditation of study programmes at all levels.

Lists of all accredited institutions, as well as of all accredited study programmes at the university colleges without institutional accreditation are available on www.nokut.no

[1] In brackets are written the official codes of each act, published in Norwegian in the online database Lovdata, www.lovdata.no
[2] National generic learning outcomes descriptions' levels for the bachelor's, master's and doctoral degrees were defined by the Instructions on the Norwegian Qualifications Framework for Higher Education in 2009.
[3] Learning outcomes for a specific NQF level show the minimum of what each learner should know, understand and be able to do after completing a learning process.
[4] Tertiary vocational education (TVE), level 5 in the NQF (EQF), is provided by *fagskoler*, which are considered as tertiary vocational education institutions. TVE is based on upper secondary education and training or equivalent competence. Courses have duration of from 6 months to 2 years. All provisions must be accredited by NOKUT.

Admission requirements and progression

The Higher Education Entrance Qualification is the successful completion of Norwegian upper secondary education with some specified courses. The Certificate of Upper Secondary Education and Training *(Vitnemål for videregående opplæring)* is based on 13 years of schooling. Admission may also be gained by means of other qualifications recognized as being on a par with the Higher Education Entrance Qualification, such as recognition of prior learning and work experience. Some fields of study have additional entrance requirements.

Degrees and qualifications

All Norwegian higher education institutions use a system of credits *(studiepoeng)* for measuring study activities, considered equivalent to the European Credit Transfer and Accumulation System (ECTS). 60 ECTS credits *(studiepoeng)* are allocated to the workload of a full year of academic study, equivalent to 1500-1800 hours of study. 30 ECTS credits are normally allocated to one semester's full-time study. The academic year normally lasts for 10 months and runs from August to June.

NQF (EQF) Level 6: Bachelor (1st cycle)
The bachelor's degree is awarded after three years of full-time study (180 ECTS). Some bachelor's degrees, in the field of music and performing arts, consist of four-year bachelor's programmes (240 ECTS). Teacher education for primary and lower secondary school, years 1-7 and years 5-10 is a four-year professional programme (240 ECTS).

University college graduate *(høyskolekandidat)* is a two-year degree (120 ECTS), a short cycle degree within the first cycle. Holders of this degree may in some cases continue their studies in a bachelor programme and thus obtain a bachelor's degree.

NQF (EQF) Level 7: Master (2nd cycle)
The master's degree is normally obtained after two years of study (120 ECTS), following the completion of a bachelor's degree. A master's degree programme includes independent work (normally a thesis) of between 30 and 60 ECTS. Some experience-based master's degrees have a scope of 90 or 120 ECTS (including independent work of at least 20 ECTS).

One-tier (integrated/long-term) master's degree is a five-year study programme (300 ECTS) which results in a master's degree, with no intermediate bachelor's degree. An exception is the Master of Architecture programme at the Oslo School of Architecture and Design, which has a scope of 330 ECTS.

In the fields of medicine, psychology and theology, professionally oriented degrees/qualifications of six years' duration (360 ECTS) are awarded; in the field of veterinary science - after 5 ½-6 years. They have retained the title *candidata/candidatus* from the former degree system.

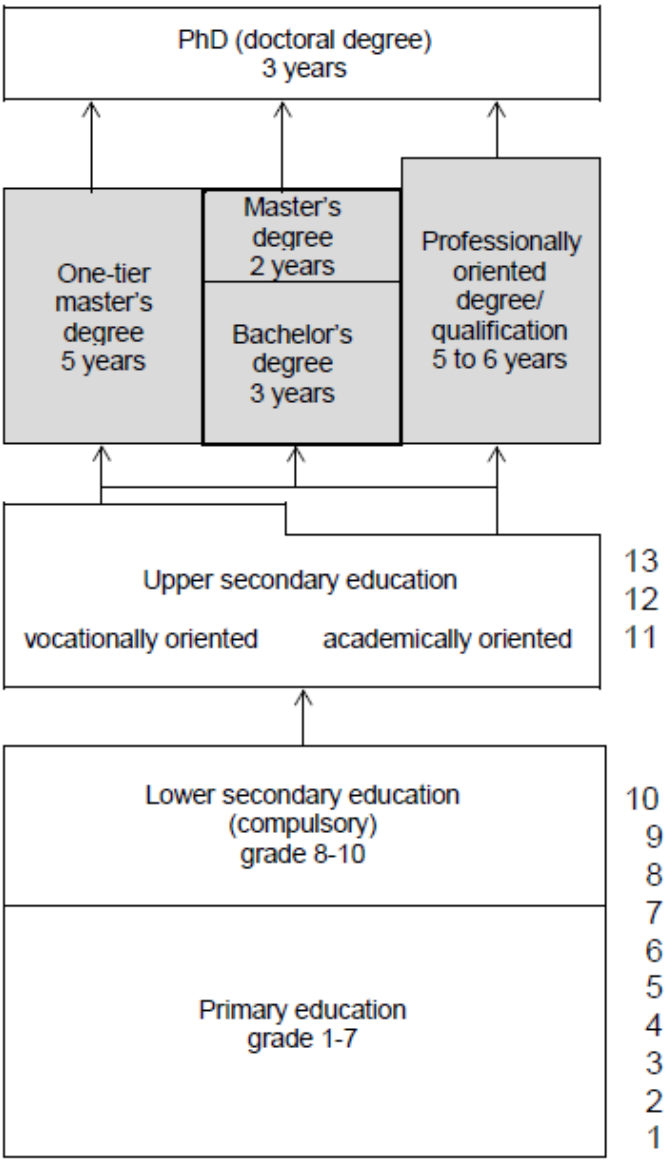
NQF (EQF) Level 8: Doctoral degree/PhD (3rd cycle)
Doctoral degree, PhD *(philosophiae doctor, ph.d.),* is awarded after three years of study, following the completion of a master's degree or a five to six-year professionally oriented degree/qualification.

Doctor philosophiae *(dr. philos.)* is conferred on graduates who have qualified for a doctoral degree on their own, without formal research training.

Diploma, artistic research fellowships programme *(kunstnerisk utviklingsprogram)* is a three-year programme in the field of creative and performing arts. It is offered as a parallel to other research-oriented provisions organized as academic PhD programmes.

Descriptions of the educational qualifications can be found in the Norwegian Qualifications Framework for Lifelong Learning at www.nokut.no/NKR.

General structure of the Norwegian educational system



Higher education degrees and qualifications not included in the chart*:

- Master's degree in Architecture from Oslo School of Architecture and Design: 5 ½ years
- Experienced-based master's degree: 1 ½ or 2 years
- Bachelor's degree of 4 years' duration (music)
- Primary and lower secondary teacher education programmes for years 1-7 and years 5-10: 4 years
- University college graduate degree: 2 years

* In addition, Norway has a system of **tertiary vocational education** ***(fagskole)***, which is not considered higher education. It is based on upper secondary education and training or equivalent competence. Course duration is from six months to 2 years. Holders of some 1 and 2 year *fagskole*-qualifications can after individual assessment continue their studies in some bachelor programs, for example in the fields of engineering and marketing.

Appendix 6. Eurobachelor award letter

EUROPEAN CHEMISTRY THEMATIC NETWORK ASSOCIATION

LABEL COMMITTEE

26.02.2014

Professor Dr. John Georg Seland
Department of Chemistry
University of Bergen
P.O.Box 7800
NO-5020 Bergen
Norway

Dear Professor Seland,
I am pleased to inform you that the Administrative Council of the European Chemistry Thematic Network Association has decided to award the **CHEMISTRY EUROBACHELOR®** Label to the University of Bergen for the programme

Bachelor i naturvitenskap
Studieprogram: Kjemi

Bachelor of Science
Study Programme: Bachelor's Programme in Chemistry

I enclose the Certificate. Congratulations!

The award is subject to the following **conditions**:

1. As a requirement of the **CHEMISTRY EUROBACHELOR®** Label students have to show that they have profound knowledge in their mother tongue and one additional major European language. The curriculum has to assure this for quality reasons and thus, even if the students have already very good knowledge in one of these additional languages some course with assessment is to be included in the curriculum.
2. A second requirement from the point of **CHEMISTRY EUROBACHELOR®** Label is the length of the bachelor thesis project. This should be extended to at least 15 ECTS.

The institution must fulfil these conditions before awarding the Labels to its graduates.

Chairman: Prof. Reiner Salzer, FR Chemie und Lebensmittelchemie, TU Dresden
Postal address: Damaschkestr. 30, 04463 Großpösna, Germany
Phone/Fax +49 034297 41446/908963, e-mail reiner.salzer@tu-dresden.de

The Label Committee expresses these **recommendations**:

1. Development possibilities for university teachers should be improved which means additional pedagogic and didactic courses should be offered and teachers should be encouraged to attend these courses in addition to the obligatory ones at the beginning of their career.
2. Evaluation of workload should be done continuously and content of courses should be adjusted properly.
3. The department should think about rearranging courses in year 3 to improve conditions for outgoing mobility students.
4. Course evaluation data and respond to student feedback should be more easily accessible for students on the web, or maybe just the information how to access these data should be distributed in better ways.

Recommendations should be met before you submit the renewal application for your **CHEMISTRY EUROBACHELOR®** Label.

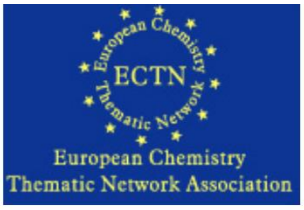
The Site Visit Team expresses its appreciation of the work of the Department of Chemistry. It was evident that high educational standards are applied and maintained. Staff and students exhibited a strong commitment to the course and to securing the **CHEMISTRY EUROBACHELOR®** label. The team was made very welcome throughout the visit.

Please note that any major changes made in the degree programme should be notified to this Committee.

Best wishes

Reiner Salzer
Chair, ECTN Label Committee

Appendix 7. Label certificate



Chemistry Eurobachelor®

University of Bergen

Department of Chemistry
has been awarded the
CHEMISTRY EUROBACHELOR® Label
for its degree of

Bachelor i naturvitenskap

Studieprogram: Kjemi

Graduates who commence their degree programme between August 2014 and August 2018 are entitled to receive documentation approved by the University and by the European Chemistry Thematic Network Association showing that their degree carries this label.

Done at l'Aquila, 26.02.2014

Francesco De Angelis
President, ECTN Association

Done at Dresden, 26.02.2014

Reiner Salzer
Chair, ECTN Label Committee

Certificate Number EB 1308