imc FH KREMS
UNIVERSITY OF APPLIED SCIENCES

Digitalisation & Engineering

BACHELOR

APPLIED CHEMISTRY

Are you interested in waste recycling or in developing new active agents in the pharmaceutical industry? As a graduate of our Applied Chemistry bachelor degree programme, you will be able to find groundbreaking solutions to problems facing society today.

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SPECIAL FEATURES

Outstanding job prospects

For a start, this new programme has been carefully designed to meet the requirements of today's chemicals industry – and this makes it unique. As a result, graduates have great career opportunities. Applied Chemistry students can make contact with companies at a very early stage so graduates have excellent prospects when they enter the job market. They are also perfectly prepared for finding work abroad, as the programme is taught in English and has a very strong international focus.

Cutting-edge course content with direct input from industry

Right from the start, the programme develops your fundamental knowledge of chemistry in tandem with a focus on forward-looking methods. Computer-based modelling and statistical methods for optimal data collection and processing feature prominently on the curriculum. Thanks to the seamlessly integrated course design, you approach topics from a variety of perspectives in your courses. This helps you to identify the links between different disciplines more easily. The staff teaching the up-to-date content include lecturers from industry, meaning that you gain the latest industry insights.

Practice makes perfect

Comprehensive practical training in the lab forms the cornerstone of the programme. We place a strong emphasis on the synthetic production of substances in direct combination with modern analytical techniques, chemical databases and software tools. This lays the foundations for completing professional tasks in the field of synthesis – such as active ingredient synthesis in the pharmaceuticals industry and synthesis of materials in the polymers and materials sector – as well as analytical areas such as quality assurance. The application of renewable materials and waste utilisation are strongly represented in the programme. In addition to duties in the pharmaceutical industry and at regulatory authorities, you are thus well prepared for responsible jobs in the ever-growing environmental sector.

AT A GLANCE

Full-time

Courses take place from Monday to Friday between 8.00 a.m. and around 8.00 p.m. (in exceptional cases on Saturdays).

English

The language of instruction is English. This prepares you for a career in a multicultural environment.

Six semesters

The degree programme lasts three years, with a total workload of 180 ECTS. Graduates receive the academic degree of Bachelor of Science in Engineering (BSc).

22-week internship

You can quickly put into practice the expertise you have picked up during your courses. The internship is an obligatory part of the programme.

Study fee

EU/EEA citizens pay a study fee of EUR 363.36 per semester, plus the student union fee.

CURRICULUM FULL-TIME

Semester I	H	ECTS
Mathematics for Chemists		
APPLIED MATHEMATICS I		
Applied Mathematics I – Theory	2	3
Applied Mathematics I – Exercise	1	2
Physics for Chemists		
PHYSICS		
Physics for Chemists – Theory	3	4
Physics for Chemists – Laboratory	2	2
General and Inorganic Chemistry		
GENERAL CHEMISTRY I		
General and Inorganic Chemistry – Theory	5	7
General and Inorganic Chemistry – Laboratory	4	5
Chemical Calculations - Stochiometry	2	2
Applied Informatics for Chemists		
APPLIED INFORMATICS I		
Applied Informatics I: Information Technology and Data Management – Theory	2	2
Applied Informatics I: Information Technology and Data Management – Computer Exercise	2	3

Semester II	H	ECTS
Mathematics for Chemists		
APPLIED MATHEMATICS II		
Applied Mathematics II – Theory	2	2
Applied Mathematics II – Exercise	1	2
Introduction to Chemometrics		
STATISTICS AND INTRODUCTION TO CHEMOMETRICS		
Statistics and Introduction to Chemometrics – Theory	1	1
Statistics and Introduction to Chemometrics – Exercise	1	1
Fundamentals of Physical Chemistry		
PHYSICAL CHEMISTRY		
Physical Chemistry – Theory	2	3
Physical Chemistry – Laboratory	2	2
Inorganic Chemistry		
INORGANIC, APPLIED AND INDUSTRIAL INORGANIC CHEMISTRY		
Inorganic and Applied Inorganic Chemistry	3	4
Industrial Inorganic Chemistry and Material Sciences	2	2
Organic Chemistry		
Organic Chemistry I	2	3
Analytical Chemistry		
ANALYTICAL CHEMISTRY I		
Analytical Chemistry I: Basic Principles and Inorganic Analysis – Theory	2	3
Analytical Chemistry I: Basic Principles and Inorganic Analysis – Laboratory	4	4
Applied Informatics for Chemists		
APPLIED INFORMATICS II		
Applied Informatics II: Chemistry Related Applications – Theory	1	1
Applied Informatics II: Chemistry Related Applications – Computer Exercise	1	2

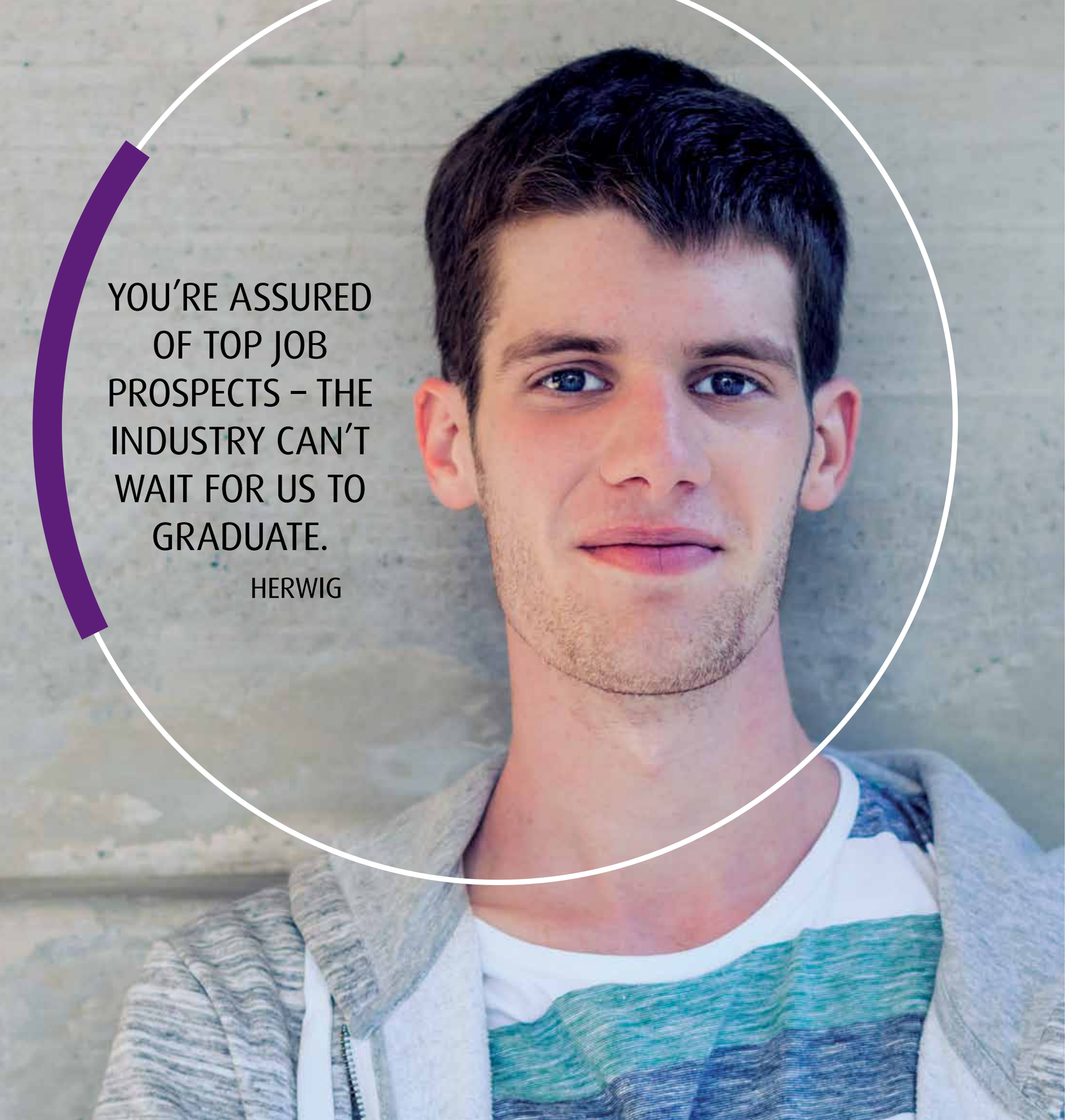
Semester III	H	ECTS
Organic Chemistry		
ORGANIC CHEMISTRY II		
Organic Chemistry II – Theory	3	4
Organic Chemistry II – Laboratory	6	7
Analytical Chemistry		
ANALYTICAL CHEMISTRY II		
Analytical Chemistry II: Quantitative Analytical Methods – Theory	2	3
Analytical Chemistry II: Quantitative Analytical Methods – Laboratory	3	4
Applied Informatics for Chemists		
APPLIED INFORMATICS III		
Applied Informatics III: Introduction to Programming – Theory	1	1
Applied Informatics III: Introduction to Programming – Exercise	1	2
Chemometrics and Data Management		
INTRODUCTION TO CHEMOMETRICS AND DATA MANAGEMENT		
Chemometrics and Data Management: Applied Statistics and Advanced Methods – Theory	1	2
Chemometrics and Data Management: Applied Statistics and Advanced Methods – Exercise	1	2
Spectroscopic Methods and Structure Elucidation		
SPECTROSCOPIC METHODS, STRUCTURE ELUCIDATION		
Spectroscopic Methods and Structure Elucidation – Theory	1	1
Spectroscopic Methods and Structure Elucidation – Exercise	1	2
Scientific Methods and Tools		
Scientific Skills and Writing	2	2

Semester IV	H	ECTS
Organic Chemistry		
INDUSTRIAL ORGANIC CHEMISTRY		
Industrial Organic Chemistry and Petrochemistry	2	3
Polymer Chemistry	2	2
Analytical Chemistry		
ANALYTICAL CHEMISTRY III		
Analytical Chemistry III: Instrumental Analysis – Theory	2	3
Analytical Chemistry III: Instrumental Analysis – Laboratory	3	3
Physical Chemistry – Advanced		
Advanced Physical Chemistry	2	3
Biochemistry and Bio Science		
BIOCHEMISTRY AND BIOANALYTICS		
Biochemistry and Bioanalytics – Theory	3	4
Biochemistry and Bioanalytics – Laboratory	3	4
Bioorganic Chemistry	1	1
Chemical Engineering and Process Control		
Chemical Engineering	2	3
Process Control and Design	1	1
Toxicological and Environmental Aspects		
SUSTAINABILITY IN THE CHEMICAL INDUSTRY		
Sustainable Methods and Renewables in Industry	1	1
Green Chemistry and Waste Utilisation	1	1
Quality Management in the Chemical Industry		
Quality Control, GMP and GLP	1	1

Semester V	H	ECTS
Practical Training Semester		
Practical Training (22 weeks à 30 hours)	0	28
Practical Training Coaching Seminar	1	2

Semester VI	H	ECTS
Toxicological and Environmental Aspects		
Toxicology	1	2
Environmental Aspects in Industry and Ecology	1	1
Quality Management in the Chemical Industry		
REGULATORY AFFAIRS AND INDUSTRIAL QUALITY MANAGEMENT		
Law and Regulations	1	1
Principles of Quality Assurance	1	1
Concepts of Business Models	1	1
Elective 1: Instrumental Analysis and Chemometrics		
SPECIAL TOPICS: FOOD AND ENVIRONMENTAL ISSUES		
Applied Analysis for Food, Environmental Issues and Pharmaceuticals – Theory	3	4
Applied Analysis for Food, Environmental Issues and Pharmaceuticals – Laboratory	3	3
Multivariate Data Analysis and Design of Experiments		
Multivariate Data Analysis (MVDA) and Design of Experiments (DoE) – Methods	1	2
Multivariate Data Analysis (MVDA) and Design of Experiments (DoE) – Exercise	1	1
Data Mining and Visualisation		
Data Mining and Visualisation – Methods	1	2
Data Mining and Visualisation – Exercise	1	1
Elective 2: Organic and Pharmaceutical Chemistry		
ADVANCED ORGANIC CHEMISTRY		
Advanced Organic Chemistry – Heterocycles and Molecules of Life	2	3
Advanced Organic Chemistry Laboratory – Method Development	3	3
Computational Methods and Molecular Modelling		
Computational Methods and Molecular Modelling – Theory	1	1
Computational Methods and Molecular Modelling – Exercise	1	2
Medicinal and Pharmaceutical Sciences		
Medicinal and Pharmaceutical Chemistry: Traditional Drugs and Biopharmaceuticals	2	3
Pharmaceutics	1	1
Scientific Methods and Tools		
Bachelor Seminar and Bachelor Paper	1	8
Bachelor Exam	0	3

Students choose one elective out of two in semester six.
Subject to possible alterations (Version 01/2020)



A VERY PERSONAL STORY

Herwig Weissinger comes from Langenlois in Lower Austria. He applied for the Applied Chemistry degree programme straight after finishing secondary school at Bundesrealgymnasium Krems Ringstrasse.

Perfect match for my interests

I have always been very interested in chemistry and science, but wanted to learn more about and understand the processes in our environment. One of my teachers at school recommended the Applied Chemistry programme because of my interests. I applied and was accepted straight away – which I was really pleased about.

Great place to study

Krems is a great place to do a degree like this, because the area has companies operating in the industry that offer internships and entry-level jobs. You’re assured of top job prospects – the industry can’t wait for us to graduate.

Forward-looking basis for my career

IMC Krems has an excellent reputation and a very international outlook, with students from all over the world. This makes it really special. And the Applied Chemistry programme is also an exceptional degree because of the focus on application – its practical design is especially attractive in the context of chemistry. I’m particularly interested in inorganic chemistry. It’s so diverse and varied, with so many applications. At IMC Krems there is a special focus on computer-assisted methods – this is very forward-looking and provides a promising basis for my career.

Tip

If your first language is German, there’s no need to worry about English being the language of instruction. It’s not a problem at the admissions interview – there’s a really friendly atmosphere. If you’re well prepared, you’ll be able to pull it off.

More stories: www.fh-krems.ac.at

#proudtobestudent

Terrific landscape and safe environment

Ultra-modern Campus Krems

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