We care about continuing education
Preface

Taking part in a continuing education programme is one of the most effective things you can do to build your knowledge and competence. At TU Graz we offer programmes where you can benefit from up-to-the-minute knowledge from lecturers who are outstanding in their fields – from our national and international network in academia and industry.

You will make new contacts and gain new interdisciplinary perspectives from discussions with your teachers and fellow programme participants. The latest teaching and learning technologies will help you fit your studies into a busy life. Make the most of our offerings and be prepared for challenges and new developments in your work. One of our programmes might give you ideas for new initiatives or even launch you on a whole new career path!

Univ.-Prof. DI Dr.techn. Dr.h.c.mult.
Harald Kainz
Rector TU Graz

Going new ways

Beyond the garden fence

For the first time, it’s my pleasure to welcome you here as Vice Rector for Academic Affairs. Like all the lecturers in our programmes, I love my subject and am passionate about teaching.

We want to make this a great place for you to learn and grow – whether it’s about refreshing your existing knowledge or completely reinventing yourself professionally.

The seminars, courses and master’s programmes of TU Graz Life Long Learning will give you many opportunities to escape from your bubble, to take a look around the corner and discuss future trends.

Contact us - the TU Graz Life Long Learning team will always be happy to advise you!
This year we have redesigned our brochure and also refreshed and expanded our range of courses—especially to keep up with changes in the world of work. 'Big Data Essentials' and 'Data Science: The Way from Big Data to Smart Data' are two new courses on very hot topics. Besides having courses that are right up to date with a high level of innovation, we also insist on developing and implementing our continuing education programme to the highest quality standards.

With approximately 40 programmes, TU Graz Life Long Learning offers training and education in a large number of key science and technology subjects that will help you develop your career. Choose from our wide range of options, expand your personal competence profile and be prepared for future professional challenges.

Design yourself!

'The only constant in life is change', said the Greek philosopher Heraclitus 2,500 years ago. How true that seems in our time, which is serving us up a lot of challenges in all kinds of areas, not least in our professional lives—for example with trends such as Industry 4.0 and digitalisation.

Life-long learning and continuing education have become things no career can do without—and this is as true for science and engineering graduates as it is for people in other professions. Whether you are at the beginning or in the middle of your career, we offer opportunities for continuing education in relevant subjects with high levels of innovation—in more than 40 courses taught by experts from TU Graz, our partner universities and industry.

New in the 2020 programme are the master’s programme in ‘Lean Management in Civil Engineering’ and the course ‘AI Essentials’. Change can bring upheaval and worry, but in the best case also the chance of positive development. Our continuing education programme is here to help you to take your professional development to the next level and to enable you to proactively manage challenges that are coming down the line.

Every end is a beginning. In 2020, the leadership of TU Graz Life Long Learning will pass into new hands, and I will begin a new life phase that I am sure will also bring me exciting challenges. I will follow the progress of TU Graz Life Long Learning with great interest and am confident that the programme will be adding even more fascinating new subjects as time goes by.

All the best!

Mag.phil. Christine Stöckler-Penz
Head of TU Graz Life Long Learning

Continuing Education at the University

We consider ourselves a service organisation and develop continuing education to the highest standards. We ensure the satisfaction of our programme participants through professional support and organisation.

We create flexible learning settings using the latest teaching and learning technologies.

Life Long Learning is the first place you should come for continuing education in science and engineering at university level. We put the learning needs of our target groups first and design innovative course content and formats to meet those needs.

Nothing as constant as change

'The only constant in life is change', said the Greek philosopher Heraclitus 2,500 years ago. How true that seems in our time, which is serving us up a lot of challenges in all kinds of areas, not least in our professional lives—for example with trends such as Industry 4.0 and digitalisation.

Life-long learning and continuing education have become things no career can do without—and this is as true for science and engineering graduates as it is for people in other professions. Whether you are at the beginning or in the middle of your career, we offer opportunities for continuing education in relevant subjects with high levels of innovation—in more than 40 courses taught by experts from TU Graz, our partner universities and industry.

New in the 2020 programme are the master’s programme in ‘Lean Management in Civil Engineering’ and the course ‘AI Essentials’. Change can bring upheaval and worry, but in the best case also the chance of positive development. Our continuing education programme is here to help you to take your professional development to the next level and to enable you to proactively manage challenges that are coming down the line.

Every end is a beginning. In 2020, the leadership of TU Graz Life Long Learning will pass into new hands, and I will begin a new life phase that I am sure will also bring me exciting challenges. I will follow the progress of TU Graz Life Long Learning with great interest and am confident that the programme will be adding even more fascinating new subjects as time goes by.

All the best!

Mag.phil. Christine Stöckler-Penz
Head of TU Graz Life Long Learning

Continuing Education at the University

We consider ourselves a service organisation and develop continuing education to the highest standards. We ensure the satisfaction of our programme participants through professional support and organisation.

We create flexible learning settings using the latest teaching and learning technologies.
Part-time Master’s & Certificate Programmes

Our part-time master’s & certificate programmes are ideal for graduates of related degree programmes and people with professional experience in relevant fields, to specialise or deepen their knowledge. The programmes are ideally designed for the learning needs of active professional people and we use the latest learning and teaching technologies to enable flexible learning settings. The programmes have a modular structure; some are internationally oriented and taught partly in English.

The programmes conclude with either a certificate, a qualification as an academic expert or the academic degree “Master of Engineering”.

< 30 ECTS-credits

CERTIFICATE
These programmes usually last two semesters in part-time format.

> 60 ECTS-credits

ACADEMIC EXPERT
These programmes last three to four semesters in part-time format.

90 - 120 ECTS-credits

MASTER OF ENGINEERING (MEng)
The degree programmes can be completed in five or six semesters in part-time format.
Sustainable construction will substantially change the shape of competition among clients, architects and construction products. We have to assess buildings and civil engineering works in a holistic manner over their whole life cycle in terms of the environment, economics and socio-cultural factors. Awareness of these issues is growing rather slowly. But in future, factors such as energy efficiency, closed loop economy, life cycle costs and deep renovation of existing buildings will be just as important as safety, functionality or building culture.

The construction industry is entering a massive transformation because increasing complexity means the traditional way of running construction projects is no longer efficient. TU Graz has responded to this by offering the first standalone master’s programme in ‘Lean Management in Civil Engineering’ in the German-speaking countries. This programme shows what the construction management of the future will have to be like – covering lean management, building information modelling and state-of-the-art construction project management.

The programme in ‘NATM Engineering’ is well-established and known around the world. From 2019, we have updated the curriculum to include a number of new topics. My aim is to help the participants develop an advanced understanding of tunnelling – especially in NATM but also with a critical discussion of different sequential tunnelling methods used around the world. Both shallow and deep tunnelling methods, for both urban and inter-city high-speed transport, will be considered. Besides this I will review the latest developments in tunnelling, for example digitalisation, measurement technology and machine technology.

I always enjoy meeting the students when they have completed the programme successfully. It is great to see that they not only enjoyed their time in the courses, but also that they have learned about essential aspects of accident reconstruction, which they will be able to use to great benefit in their daily work. Following the success of the master’s programme in ‘Traffic Accident Research’, we were approached by specialists from the aviation sector asking if we could set up a similar programme for aviation. The master’s programme ‘Traffic Accident Research – Aviation Safety’ was held for the first time in 2014, and like the other programme, brings together a team of internationally respected experts as instructors.

With our university programme ‘Paper and Pulp Technology’ and the master’s programme ‘Process Engineering’ we can offer both a full degree and a part-time qualification in the field of paper and pulp technology. A synergy effect comes from the fact that the participants in the university programme and the master’s programme come into contact, which widens the perspectives of both and enriches their experience.

Specialists from the space flight sector can use this part-time master’s programme to expand their technical knowledge and also to prepare for a wide variety of leadership roles and modern business practices in an international environment.

With our university programme ‘Paper and Pulp Technology’ and the master’s programme ‘Process Engineering’ we can offer both a full degree and a part-time qualification in the field of paper and pulp technology. A synergy effect comes from the fact that the participants in the university programme and the master’s programme come into contact, which widens the perspectives of both and enriches their experience.

With our university programme ‘Paper and Pulp Technology’ and the master’s programme ‘Process Engineering’ we can offer both a full degree and a part-time qualification in the field of paper and pulp technology. A synergy effect comes from the fact that the participants in the university programme and the master’s programme come into contact, which widens the perspectives of both and enriches their experience.

Statements by the Programme Directors

Otto Koudelka, programme director 'Paper and Pulp Technology'

Ulrich Hirn, programme director 'Paper and Pulp Technology'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Gottfried Mauerhofer, programme director 'Sustainable Construction'

Peter Maydl, programme director 'Lean Management in Civil Engineering'

Thomas Marcher, programme director 'NATM Engineering'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Otto Koudelka, programme director 'Paper and Pulp Technology'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Gottfried Mauerhofer, programme director 'Sustainable Construction'

Peter Maydl, programme director 'Lean Management in Civil Engineering'

Thomas Marcher, programme director 'NATM Engineering'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Otto Koudelka, programme director 'Paper and Pulp Technology'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Gottfried Mauerhofer, programme director 'Sustainable Construction'

Peter Maydl, programme director 'Lean Management in Civil Engineering'

Thomas Marcher, programme director 'NATM Engineering'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Otto Koudelka, programme director 'Paper and Pulp Technology'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Gottfried Mauerhofer, programme director 'Sustainable Construction'

Peter Maydl, programme director 'Lean Management in Civil Engineering'

Thomas Marcher, programme director 'NATM Engineering'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Otto Koudelka, programme director 'Paper and Pulp Technology'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Gottfried Mauerhofer, programme director 'Sustainable Construction'

Peter Maydl, programme director 'Lean Management in Civil Engineering'

Thomas Marcher, programme director 'NATM Engineering'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Otto Koudelka, programme director 'Paper and Pulp Technology'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Gottfried Mauerhofer, programme director 'Sustainable Construction'

Peter Maydl, programme director 'Lean Management in Civil Engineering'

Thomas Marcher, programme director 'NATM Engineering'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Otto Koudelka, programme director 'Paper and Pulp Technology'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Gottfried Mauerhofer, programme director 'Sustainable Construction'

Peter Maydl, programme director 'Lean Management in Civil Engineering'

Thomas Marcher, programme director 'NATM Engineering'

Hermann Schaffner, programme director 'Traffic Accident Research – Aviation Safety'

Otto Koudelka, programme director 'Paper and Pulp Technology'
The NATM engineering programme provides practical insight into all aspects of deep tunneling from geological investigations, rock mechanics to scheduling, construction and risk management. Being a geotechnical engineer who is largely involved in surface and underground mining, the NATM programme was very useful as the design aspects use systematic approaches for modelling ground conditions and conceptually understanding ground behavior for tunnels that are designed to remain serviceable for over 100 years, rather than say 5 to 10 years as is usually the case for mining. These approaches greatly supplement methods commonly used in the mining industry.

The NATM engineering programme provides practical insight into all aspects of deep tunneling from geological investigations, rock mechanics to scheduling, construction and risk management. Being a geotechnical engineer who is largely involved in surface and underground mining, the NATM programme was very useful as the design aspects use systematic approaches for modelling ground conditions and conceptually understanding ground behavior for tunnels that are designed to remain serviceable for over 100 years, rather than say 5 to 10 years as is usually the case for mining. These approaches greatly supplement methods commonly used in the mining industry.
University Courses, Courses and Seminars

Together with selected partners, TU Graz offers a continuing education programme with several types of courses. Our courses and seminars cover a wide range of subjects and a large practical component. The courses are designed for university and college graduates, experts from industry and TU Graz students.

CERTIFICATES
On completion of these courses you receive either
— a certificate of attendance, confirming that you have taken the course or
— a TU Graz certificate, if the course ends with an examination.

Electron Microscopy and Nanoanalysis: EELS/EFTEM
A thorough introduction to the principles of EELS and EFTEM techniques.

Electron Microscopy and Nanoanalysis: SEM
Learn to use a scanning electron microscope professionally, and how to interpret SEM images properly.

Food Chemistry and Technology
An advanced course in food chemistry and food technology to better understand your processes.

Sensory Evaluation of Food: Introduction
Get to know the basics of sensory analysis and the key principle of sensory testing of food.

Sensory Evaluation of Food: Advanced
Expand your knowledge about different techniques that can be applied in the field of sensory analysis, both in analytical and hedonic evaluation.

Electrical Protection Technology: Fundamental Procedures and Applications
Find out how to improve the performance of your business with the right protection concepts and settings.

Electromagnetic Compatibility: Introduction
Learn the fundamental principles of EMC design of circuits and circuit boards.

Introduction to Electric Drive Systems
Learn about the current generation of electric drive systems and their practical applications.

High Voltage Engineering: Principles and Practical Application
Learn the fundamental principles of high voltage engineering and how to apply them in your specific field of work.

Evaluation of Measurement Uncertainties
Learn how to estimate measurement uncertainties using consistent and reasoned methods.

International Welding Engineer
A comprehensive course on all aspects of welding technology.

www.LifeLongLearning.tugraz.at