



Foto: Julia Bergmeister

Application

The deadline for application is **March 15th, 2020**. Places are limited. Please be aware that early applications will be favored. The application form can be downloaded at www.hm.edu/summerschool. Please send it to Munich University of Applied Sciences, either via email, fax or post.

Accommodation and Support

Accommodation will be organized by the coordinating staff upon request. Participants of the program will stay in a hostel near the university in Munich. The accommodation is located in a **safe neighborhood in Munich**. All amenities and shops are easy to reach. The approximate price per person for 34 nights in a tripple or quad bedroom will be 1.100 Euros. Please find details about the housing and options on our website.

We guarantee professional assistance by the program coordinator and bilingual German buddies. The buddies will help you to settle in smoothly. They will accompany the field trips, company visits and receptions. **Free access to the internet** will be provided by the university as well as a **welcome package** including a Summer School shirt.

»Coming to Germany was my first extended international trip. I really feel like my eyes were opened to other cultures. I loved the excursions, especially to BMW, and I feel like I learned a lot about engineering and life in general.«

Elise, California Polytechnic State University

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www.hm.edu/summerschool

Engineering for Sustainability

July – August
Munich, Germany

Munich Summer School of Applied Sciences



Foto: TAM



Why Munich

High-tech hub (around 22,000 high-tech companies, such as BMW, Apple, Microsoft)

Rich culture life in international atmosphere combined with Bavarian traditions

Beautiful nature in and around Munich (Alps, lakes, etc.)

Safety & comfort – Munich is rated #1 in Germany for quality of life and is one of the safest cities in Europe.

Why MUAS

Second largest university of Applied Sciences in Germany with over 18.000 students and over 85 degree programs

Future-oriented education

Career success

International services

Excellent industry connections



UNIVERSITY OF APPLIED SCIENCES
MUNICH



CAL POLY

www.hm.edu/summerschool



Requirements

In order to apply, you should be at least 18 years old. Applicants must provide evidence of a good level of English (at least level B2 in the CEFR, TOEFL iBT 90 or equivalent, or mother tongue), as well as a letter of motivation and a transcript with the most recent grade point average. Please also refer to the prerequisites specified in the course descriptions.

Fees

The **program fee of € 1,790** covers: tuition for the German Language and Culture class, two subject courses, the official cultural and social program, free internet access at the university and a welcome package. For students from **partner universities**, the fee is reduced to **€ 1650**. The deadline for applications is March 15th, 2020. Accommodation is not included.



Academic Program

Munich Summer School of Applied Sciences offers in-depth study of engineering and business topics, integrating green issues with a focus on sustainability. The **courses focus on practical application** using **state-of-the-art technology** and **teaching methods**.

The program is intended for advanced undergraduate students in Mechanical Engineering, Automotive Engineering, Electrical Engineering and Industrial Engineering from Germany and abroad.

The summer school is a five-week program. International students participate in an intensive **German Language and Culture** course in the first week and continue these studies part-time throughout the program.

Students select **two credit** subject courses, which are taught in English by multi-national teams of two renowned lecturers from Munich University of Applied Sciences, California Polytechnic State University (USA) and the Strascheg Center for Entrepreneurship (Munich). Each subject course covers a **minimum of 40 teaching contact hours**, including laboratory experiments and simulations. The academic program also includes a number of relevant **field trips**. Please visit our website for detailed course descriptions.

Examples of offered courses

German Language and Culture

- Overview of the most important German phrases and grammatical structures
- Vocabulary for day-to-day situations in Germany
- Ability to communicate and read in German
- Basic elements of German culture and its historical roots
- The impact of culture on intercultural behavior
- Three related field trips: Munich Documentation Centre for the History of National Socialism, Dachau Concentration Camp Memorial Site, Representation of the European Commission
- **6 ECTS credits (or 4 US-credits)**

Smart Vehicles

- Overview of smart vehicles
- Autonomous driving vehicles and their contribution to a sustainable mobility
- Introduction to vehicle dynamics
- Image Processing for autonomous vehicles
- Defining simple manoeuvres with the model car
- Test and competition with the model car
- Field trip: Visiting BMW World and the plant (guided tour)
- **4 ECTS credits (or 3 US credits)**

Smart Environments

- Definition of a Smart Environment
- Introduction and assessment of different existing technologies
- Setup of a simple Smart Environment
- Use relevant methods for representing knowledge
- Reasoning about knowledge in Smart Environments
- Apply context-information to improve the reasoning process
- **4 ECTS credits (or 3 US credits)**

Engineering of Sustainable Energy Systems

- The need for sustainable energy systems and their architecture
- Introduction to Systems Engineering approaches
- Models and simulations of energy grids
- Key components of sustainable energy systems
- Sustainable energy net integration and engineering solutions
- **4 ECTS credits (or 3 US credits)**

Crashes and Impacts: Analysis, Techniques and Biomechanics

- Basic Crash Dynamics
- Methods for discretization in time
- Nonlinearities in solid mechanics
- Methods/Requirements for numerical treatment of highly nonlinear dynamic problems
- Application of methods learnt with a commercial code
- Extracting/Postprocessing injury relevant data
- **4 ECTS credits (or 3 US credits)**

Hydraulic & Pneumatic Systems

- Overview of hydr. and pneum. systems and their applications
- Properties of hydraulic fluids and their flow characteristics
- Design of hydr. components incl. pumps/motors, actuators, valves
- Hydraulic system design including component selection
- Analysis of system efficiency and energy consumption
- Hands on experimentation and testing of hydraulic components
- Speed and position control experiments with real-time control
- **4 ECTS credits (or 3 US credits)**

Sustainable Entrepreneurship

- Entrepreneurship in theory and practice
- Implementation of business models
- Development and growth of the enterprise
- Interdisciplinary teamwork
- **4 ECTS credits (or 3 US credits)**

Cultural Program

A broad and attractive cultural program makes your stay an unforgettable experience.

The cultural program includes i.a. the following field trips:

- a guided tour of Munich and a visit to a typical beer garden
- field trips to the BMW World including a plant tour
- a day trip to the beautiful Herrenchiemsee New Palace on an island in Lake Chiemsee with a boat trip and a Bavarian lunch
- trips to the Munich Documentation Centre for the History of National Socialism, to the Dachau Concentration Camp Memorial Site and to the Representation of the European Commission in Munich (as a part of the German Language and Culture class)

Meeting German students in class and afterwards provides unique insights into German every-day life. Joint studies with participants from all over the world complete an intercultural experience. The program will be complemented by receptions and get-togethers.

»This program was an incredible cultural and learning experience and I would recommend it to anyone.« Alex, Pennsylvania State University

