

## Course Syllabus

### International Study Program 2025: Innovation and Sustainability in Engineering and Environmental Planning

#### Course 1: Living Society

##### Program description

As one of the countries leading technical innovation globally, Germany provides an interesting case study for examining the impact of innovation on the course of environmental and social change. The International Study Program “Innovation and Sustainability in Engineering and Environmental Planning” in Osnabrück, Germany explores this question, focusing in particular on sustainability innovation. The program consists of three parts. Course 1 surveys recent technological developments in five smaller units dedicated to different research areas. In Course 2, students choose one of two hands-on workshops on methods of innovation. The accompanying cultural module “Living Society” contextualizes the innovation trends explored in Courses 1 and 2 in terms of German culture and history.

Through lab and project work, theoretical input, discussion and company visits, students gain a comprehensive view of innovation processes which transcend disciplinary borders and deepen their understanding of the role and scope of their own discipline therein. The program is designed for students from various engineering and planning fields. In this international program, visiting and local students participate together, enabling intercultural exchange and offering an unforgettable experience abroad.

##### Course content

The module “Living Society” includes classroom lessons and workshops (Survival German, Germany in Europe, Intercultural Competency) as well as study trips, including:

- Berlin and Potsdam – Like no other city in the world, Berlin’s architecture and urban design bear witness to the dramatic history of political and social change over the past 400 years. We’ll explore the beating heart of German history, from the days of Prussian royal rule, to its tenure as the seat of devastating dictatorial power in the 20th Century through its development into the super-diverse, multi-faceted metropolis it represents today.
- Rhine-Ruhr Region – Coal and Steel drove German industrialization and made this western corner of Germany into its economic motor. Their influence endures today, despite the shift away from heavy industry.
  - In Duisburg, we’ll talk about the challenges and chances of economic structural change and post-industrial urban landscapes for society, the economy and the (built) environment.
  - In Bonn – the cradle of the Federal Republic of Germany – we’ll learn more about the development of West Germany, and particularly its orientation toward its western neighbors and the undertaking of the “European experiment” on the basis of economic cooperation around these industries. We will also explore the city of Cologne.
- Bremerhaven and the North Sea Coast – At the historic port city Bremerhaven, we’ll visit the Klimahaus Bremerhaven 8° Ost – a mixture between a science center and theme park. It shows a unique world of weather, climate and climate-change knowledge and

experience, also making it a climate museum. During the Game Event “World Future Lab” we will take control of Earth’s fate. We will then experience one the most unique natural environments in Germany: the Wadden Sea Tidal Flats. Stretching between the Netherlands, Germany and Denmark, this natural area – home to over 10.000 types of plants and animals and 10 to 12 million migratory bird per year – manifests the importance of present efforts towards sustainable development.

### **Competence goals**

Students who have successfully completed the course have a deeper understanding of the historical and cultural context of Germany’s current trends in innovation and sustainability.

### **Methods**

Classroom lessons, workshops, study trips.

### **Prerequisites**

None

### **Lecturers**

Dirk Junker

### **Exam and grading**

The accompanying module “Living Society” is considered as an supplement to Course 1 and Course 2. Grading will be based on an assessed assignment in the course of the program that reflects the gained understanding of innovation in the context of “Living Society”.

Prerequisite for grading is an individual active participation and engagement with course content.

### **Duration**

6 weeks (May-June)

### **Frequency**

Yearly

### **Course Language**

English