

<b>Titel der Veranstaltung</b> <b>Praktikum: Sustainable cities and communities</b>	
<b>Gemeinsame Internationale Summer School Prof. Bogner, Prof. Junker, Prof. Kumar, Prof Schneider</b>	
<b>Modulzuordnung(en)</b> MN-Ggr-MScAM04, MN-Ggr-MScAM05, IMES	<b>1. und 2. Prüfungstermin</b> 30.9.2024

This module will be held as an international summer school in cooperation with students and partners from BVU and IISc / India. The theme of the summer school is “Sustainable cities and communities”. This module is interdisciplinary and international. It is planned that professors from the University of Cologne (Prof. Bogner, Prof. Junker, Prof. Schneider) and from India (Prof. Kumar, Prof. Rao) will provide the different perspectives towards sustainability science focusing on natural sciences (Ecosystem services, urban climate) and social sciences (participatory approaches and education, law and policies). Problem solving competences will be developed based upon systematic observations (protocol driven) and data oriented integrative analyses. A focus of urban issues (climate change, ecosystem services, participation change management, policies) provides a coherent interdisciplinary scope. New methods and techniques will be used and evaluated to assess their potential for support international cooperation beyond the duration of the summer school.

#### Content

The summer school will be held in a hybrid format to i) facilitate participation and intercultural experience of students which cannot travel, ii) increase the number of participants, iii) decrease the carbon footprint of international academic cooperation, iv) test and develop new methods for distance cooperation (XpertEye, Nearpod, Zoom etc.) and v) to evaluate the summer school format towards the administrative and operational needs of the planned JIMES.

The two-week summer school utilizes a scaffolding approach organized in two sections: The first week the focus will be on disciplinary approaches and methods from the natural (urban climate, ecosystem services) and the societal perspective (law and policies, education and participation). The second week will focus on integrative, interdisciplinary approaches. In both weeks, international cooperation will be exercised through mixed groups of UoC and BVU/IISc students. Scientific methods will be presented, tested and analyzed using observation and measurement protocols, as well as questionnaires aimed at understanding i) the citizen perspective to sustainable development and ii) the urban administrative / city halls perspective.

Classes will be held jointly between 9:30 am and 5 p.m. CET (1 p.m. – 8:30 p.m. IST). Lectures (2 h max) provide the scientific

background. Student activation and cooperation is done through protocol based field observation and measurements. UoC and BVU run identical citizen science networks for urban climatology. They also have comparable additional field measurement devices. Thus the applicability and transferability of the methods learned is given at UoC and BVU. Research themes are formulated by international student teams, consisting typically of 5 students (2-3 UoC, 2-3 BVU/IISc). This approach provides international collaborative experience, informal exchange between the students and the students will acquire first-hand and practical experience. Distant cooperation will be done by the use of the available on site (video conference systems), field communication equipment (XpertEye, DJI combo 2), online cooperation and learning tools such as NEARPOD and the IDEaL platform. We expect 20 students (10 BVU, 10 UoC) participating on site in Cologne and up to 10 students participating from Pune of Bangalore. In addition, up to 5 IISc students will be supported through INGENIoS funds provided in the frame of INGENIoS funded through UGC and DAAD. Funding for BVU students must be provided through this summer school grant. 9 CP can be earned by the students.

The workload of the students comprises a) participation in the summer school (equivalent to 3 CP) and b) own research based on integrative team work (6 CP) to be completed after the summer school. Credits will be earned a) based on active and continuing participation in the summer school and b) on the basis of a written scientific paper addressing the research goal set by the student team. Due to the research done in the field, the students will be exposed to cultural and social activities as well as interdisciplinary cooperation.

A cultural program on the weekend will entail a) a city excursion “Cologne from roman times to modernity” and b) a boat trip from Cologne to Königswinter with a hike to the Drachenfels to experience the character of the region.

Requirements: Basic knowledge in Geography or related discipline (B.Sc., data analysis, climatology and ecosystems.  
 Funding through UoC as applied for by Prof. Bogner and Schenider .

**If funding through UoC is not granted:** This course will be held as a field practicum of ecosystems and ecosystem services in urban areas. The cultural program will be cancelled and international cooperation will be limited to virtual cooperation.

Competence building:  
 Educational targets - Scientific understanding of different perspectives of sustainability sciences in urban ecosystems towards building sustainable cities and communities

	<ul style="list-style-type: none"> <li>- Methods: protocol based observation and evaluation, Data analysis, planning of measurements and observations, scientific analysis, writing and reporting</li> <li>- International: Understanding of different perspectives of sustainability</li> </ul>
Language	Englisch (primär)
Teaching methods	<p>Lectures, collaborative planning, measuring and analyzing of field measurements and observations</p> <p>Blended Learning</p> <p>29. July 2024: Scope of the summer school, organization, group formation (Bogner, Junker, Kumar, Schneider) Lecture: Urban Climate (Schneider / Eingrüber): Observation and measurement approaches to urban climate: Protocol development</p> <p>30. July 2024: Hybrid mode Excursion Urban climate in Cologne (using XE / Schneider), Protocol application Lecture: Env. Law and Sustainability (Junker): Research approaches and data to assess the legal frame of sustainability</p> <p>31. July 2024: Student Teamwork: The governmental approach to sustainability / Law and policies in Cologne and Pune, Protocol application Lecture: Urban Ecosystem Services (Bogner): Observation and measurement approaches to ecosystem services</p> <p>1. August 2024: Student Teamwork: Mapping of ecosystem services in Cologne and Pune, Protocol application Lecture: Community Engagement and Empowerment for Sustainable Cities (Kumar): Observation and assessment methods to assess participation: Questionnaire development</p> <p>2. August 2024: Student Teamwork: The citizen approach to sustainability: Surveys and questionnaires on participation, Protocol application; Discussion and wrap up of the week</p> <p>5. August 2024: Discussion of questionnaire and mapping Protocols; Lecture: A practical guide to managing interdisciplinary teams Student Teamwork: Mapping of: i) Urban Climate parameters, ii) Ecosystem Services, iii) stakeholder preferences, iv) city policies and actions</p> <p>6. August 2024: student report and discussion (esp. on status of field work); Lecture: Multi-criteria decision making approaches Student Teamwork: Mapping of: i) Urban Climate parameters, ii) Ecosystem Services, iii) stakeholder preferences, iv) city policies and actions</p> <p>7. August 2024: student report and discussion (esp. on status of field work); Lecture: The mechanism of climate negotiations Student Teamwork: Integration of the different perspectives to sustainability</p> <p>8. August 2024: student report and discussion (esp. on status of integration approaches); Lecture: Multi-criteria decision making approaches</p>
Schedule	

Student Teamwork: Integration of the different perspectives to sustainability

9. August 2024: student report and discussion (esp. on status of integration approaches); Feedback session

Wrap up of PI's / lessons learned from summer school

Sign-up Please contact Dr. Hannes Laermanns ([h.laermanns@uni-koeln.de](mailto:h.laermanns@uni-koeln.de))

Examination Research Analysis on a topic pertaining to the summer school as chosen by the students

Date of Examination Submission deadline of the report and the paper: 30/09/2024