

Course edition	1	Academic Year	2022/2023
Ref.	MBUILD06/ M21		
MODULE	SUSTAINABLE CITIES WITH SUSTAINABLE BUILDINGS		
ECTS	6		
Year/Semester	Y1/S2		
Class hours	4 h/week * 13 weeks = 52 h		
Teaching location	THM, Giessen, Germany		

1. OBJECTIVES

- Understanding the local conditions to promote Sustainability of the built environment
- Understand that the design process is based on a detailed climate analysis of the specific site, which is the starting point for energy effective city structures.
- Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context.
- Students are able to apply their acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
- Students are able to integrate knowledge and deal with the complexity of making judgments based on information that is incomplete or limited, including reflections on the social and ethical responsibilities associated with applying their knowledge and judgments.
- Students are able to communicate their findings and the ultimate knowledge and reasons behind them to specialist and non-specialist audiences in a clear and unambiguous manner.
- Students possess the learning skills to enable them to continue studying in a largely self-directed or autonomous manner.

All other module topics can be interlocked and combined with this module in order to reflect contemporary and future sustainability projects. This way an interdisciplinary and practical approach is enabled.

2. LEARNING OUTCOMES AND COMPETENCES

On successful completion of this module, the students will be able:

- To identify the relevant aspects of sustainable cities.
- To apply these principles and criteria in projects.

3. SYLLABUS/TOPICS

1. Local energy potential (sun, wind, geothermal energy)
2. Zero emission
3. Self-sufficient city quarters
4. Mobility
5. Sustainable infrastructure
6. Waste management systems
7. Closed loop recycling.

4. MANDATORY REFERENCES

- The United Nations (2018): The sustainable Development Goals. New York: United Nations Publication
- Pro21 GmbH (2013): Case Studies and Guidelines for Energy Efficient Communities: A Guidebook on Successful Urban Energy Planning. Stuttgart, Fraunhofer IRB Verlag

5. ADDITIONAL REFERENCES

- Other resources to be provided during the module, in connection with the way the research will be done.

6. ASSESSMENT TYPE

- Distributed only (courseworks and activities developed during the semester)

7. ASSESSMENT COMPONENTS AND CALCULATION OF FINAL GRADE

7.1 Normal assessment (two opportunities)

The module will be assessed by:

- Exercises /courseworks, to be developed during the teaching period. Some of them will be in groups, some of them individuals. Details will be defined at the beginning of the classes by each lecturer.

	Nr	Weigh in the final grade	Minimum grade
Block 1: exercises /courseworks	1-10	20%	-
Block 2: exercises /courseworks	1-10	20%	-
Block 3: exercises /courseworks	1-10	20%	-
Block 4: exercises /courseworks	1-10	20%	-
		100%	5.0 (0-10 UC scale) 10.0 (0-20 UP scale) 50.0 (0-100 THM scale)

7.2. Resit assessment

- No minimum grade is required in each specific exercise/coursework or in each block. If the final grade of the module is FAILED, then the student will choose a certain number of exercises/courseworks with the lowest grades of any block to resubmit them in order to increase the final grade of the module to obtain a PASS. In those cases where the original exercise/workshop was submitted in group or in pairs, the new submission will be carried out individually; in those cases, lecturer will adapt the exercise to accommodate the working effort for an individual submission.
- Deadline of the re-submission will be done, as latest, during the official resit period of the semester at THM.

8. TEACHING STAFF

Name	Position	University / Company	email
Dr. Andreas Koch	Team Leader Quartier and city	Dena	Andreas.Koch@dena.de
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