ARCH5431B  
Topical Studies in Building Technology – Climatic-Spatial Planning  
2015-16 Term II  

Instructor: Chao REN  
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DESCRIPTION

This course introduces the basic concepts of Urban Climatology and principles of urban climatic application in urban planning and design so as to meet citizen’s thermal comfort requirement and optimize livable condition of urban environment. The concept of urban climatic-spatial planning and its key design strategies will also be introduced. Numerous examples and case studies will be illustrated during the course.

The first part of course focuses on the impact of built-up areas on urban climatic condition, especially on the thermal and wind aspects. The second part of course focuses on the introduction of various climatic design measures to improve urban climate, i.e. urban morphology, urban density, landscape, open space and etc. The last part of course focuses on the discussion of possible and effective urban climatic planning and design strategies under different climatic zones/regions to improve bioclimatic and livable condition of urban environment.

OBJECTIVES

- To understand the physics and basic concepts of urban climatology;
- To gain the knowledge of climatic-spatial planning and design strategies;
- To be able to conduct the field measurement;
- To be able to make an initial assessment and evaluation on collected urban climatic-environmental data and information;

LEARNING OUTCOME

During the course, students will learn how to conduct field measurement, how to collect urban climatic-environmental data and information, how to carry out an initial evaluation on urban climatic condition and climatic-spatial design.

ASSESSMENT SCHEME

Assignment 1 *, Group Work (40%), As advised by the course instructor

Assignment 2*, Individual Study (30%), As advised by the course instructor

(Please indicate which part for external assessment by putting an "**")

Attendance: 10%
IMPORTANT NOTE TO STUDENTS:

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at http://www.cuhk.edu.hk/policy/academichonesty/ . With each assignment, students may be required to submit a statement that they are aware of these policies, regulations, guidelines and procedures.

COURSE FORMAT
Lectures, group discussions, field measurement, presentations.

The course meeting time is Thursday, 9:30 – 12:15 in Rm 105 of FYB.

PRE-COURSE READING
Students MUST read and familiarize with (book, paper, notes, text, website the following before coming to class.


REFERENCE BOOK
- www.staedtebauliche-klimafibel.de
- www.stadtentwicklung-berlin.de

**SCHEDULE**

**Time:** Thursday, 9:30 – 12:15  
**Venue:** RM105, FYB

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<tr>
<th>Date</th>
<th>Time</th>
<th>Event</th>
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| 14 Jan 2015   | 09:30am- 12:15pm | Lecture 1  
Introduction to Urban Climatology and Climatic Spatial Planning  
Video                      |
| 16-17 Jan 2015 | 09:30am- 12:15pm | Guest Lecture  
Low Carbon City towards Climate Change  
Lecturer: Dr. Stanley YIP |
| 4 Feb 2015    | 09:30am- 12:15pm | Lecture 2  
Wind Environment and Thermal Environment  
Field measurement and data collection |
| 18 Feb 2015   | 09:30am- 12:15pm | Lecture 3  
Urban climatic Application in European Cities |
| 25 Feb 2015   | 09:30am- 12:15pm | Mid-term Quiz  
Tutorial  
Student Group Work on Site Selection and Preparation  
Field Measurement conducted by students |
<p>| 3 Mar 2015    |             | Visit HKO |</p>
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<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>10 Mar 2015</td>
<td>09:30am-12:15pm</td>
<td>Meet at 9:30am at the front gate of HKO</td>
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<td>10 Mar 2015</td>
<td>09:30am-12:15pm</td>
<td>Lecture 4</td>
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<td>Climatic information tool: UCMap, LCZ</td>
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<td>Case Studies</td>
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<td>17 Mar 2015</td>
<td>09:30am-12:15pm</td>
<td>Lecture 5</td>
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<td>Human-biometeorology: Outdoor thermal comfort</td>
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<td>Greenery</td>
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<td>24 Mar 2015</td>
<td>09:30am-12:15pm</td>
<td>Lecture 6</td>
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<td>Integrated Design Strategy for Climatic Spatial Planning</td>
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<td>31 Mar 2015</td>
<td>09:30am-12:15pm</td>
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<td>Climate Change and Adaption Strategies</td>
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<td>7 Apr 2015</td>
<td>09:30am-12:15pm</td>
<td>Tutorial</td>
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<td>14 Apr 2015</td>
<td>09:30am-12:15pm</td>
<td>Final Presentation</td>
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<td>Student Presentation on their group design project</td>
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