## Inhaltsverzeichnis

### 100 Kairo

<table>
<thead>
<tr>
<th>Kategorie</th>
<th>Startseite</th>
<th>Endseite</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 Incoming</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>111 Compulsory Modules</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>51250 Integrated Research and Design Project II</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>51230 Methods and Tools of Planning and Design</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>51240 Research and Design Project I</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>51200 Sustainable Architecture</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>51220 Urban Ecology and Ecosystem Design</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>51210 Urban Policy, Planning and Sustainable Urban Management</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>112 Electives</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>51190 Construction Economics M 1</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>51310 Contemporary Topics of Architecture and Urban Planning</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>51320 Contemporary Topics of Infrastructure Planning and Resource Management</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>51180 Sustainable Architecture II (Design and Construction)</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>51300 Urban Ecology and Ecosystem Design II (Geodesign)</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>51290 Urban Policy, Planning and Sustainable Urban Management II</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>113 Key Qualifications Related to the Subject</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>51270 Research Methods I - Seminar 1</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>51280 Research Methods II - Seminar 2</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>120 Outgoing</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>121 Compulsory Modules</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>51250 Integrated Research and Design Project II</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>51230 Methods and Tools of Planning and Design</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>51240 Research and Design Project I</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>51200 Sustainable Architecture</td>
<td>40</td>
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<tr>
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<td>42</td>
<td></td>
</tr>
<tr>
<td>51210 Urban Policy, Planning and Sustainable Urban Management</td>
<td>44</td>
<td></td>
</tr>
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<td>122 Electives</td>
<td>46</td>
<td></td>
</tr>
<tr>
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<td>49</td>
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</tr>
<tr>
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<td>50</td>
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<tr>
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100 Kairo

Zugeordnete Module:  
110  Incoming  
120  Outgoing
110 Incoming

Zugeordnete Module:  

111 Compulsory Modules  
112 Electives  
113 Key Qualifications Related to the Subject
111 Compulsory Modules

Zugeordnete Module:
- 51200 Sustainable Architecture
- 51210 Urban Policy, Planning and Sustainable Urban Management
- 51220 Urban Ecology and Ecosystem Design
- 51230 Methods and Tools of Planning and Design
- 51240 Research and Design Project I
- 51250 Integrated Research and Design Project II
**Modul: 51250 Integrated Research and Design Project II**

2. Modulkürzel: 011221923  
3. Leistungspunkte: 15.0 LP  
4. SWS: 6.0  
5. Modulrahmen: 1 Semester  
7. Sprache: Englisch


9. Dozenten:

10. Zuordnung zum Curriculum in diesem Studiengang:

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
  ➔ Kairo  
  ➔ Incoming  
  ➔ Compulsory Modules

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
  ➔ Kairo  
  ➔ Outgoing  
  ➔ Compulsory Modules

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
  ➔ In-Depth Modules

11. Empfohlene Voraussetzungen: Research and design project I

12. Lernziele:

This course aims at expanding students’ understanding of the roles and responsibilities of professionals involved in the process of shaping our cities, buildings and urban environment. It links research and design skills in terms of applying ecological knowledge, up to date technologies and shaping built form to research and design skills in terms of collaborative forms of project development and organization. Students are asked to creatively and strategically assemble new alliances and relationships among owners, clients, builders, fabricators, consultants, NGOs etc. that lay the groundwork for innovative environmental, urban and architectural design and research. This course explores how these new models of working can expand the scope and capabilities of architects, urban planners and engineers to embed the role of design and research in the total process of developing and realizing a project. The “Integrated Research and Design Module” is designed to address this new condition and prepare the next generation of professionals to lead in the development of new modes of research and design practice.

13. Inhalt:

Students will apply theoretical and technical knowledge to develop proposals for an integrated development strategy for a specific site. Students will learn to utilize their specific individual skills and interests to form a multi-disciplinary design team working with actual clients and a multitude of stakeholders. Together with external partners, students will develop their own design brief and planning guidelines, undertake baseline research on-site and develop an integrated development strategy which may include proposals on an urban and regional scale, proposals for environmental and infrastructural improvement, concepts for neighbourhood upgrading or architectural interventions. An interdisciplinary team of lecturers and external experts will support students during the entire working period.

14. Literatur:

Beltran del Rio et al. 2010: Improving Informal Areas in Greater Cairo
Read et al.(ed.) 2005: Future City
Loeckx et al. (eds) 2004: Urban Trialogues - visions, projects co-productions

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<th>15. Lehrveranstaltungen und -formen:</th>
<th>512501 Integrated Research and Design Project</th>
</tr>
</thead>
</table>

| 16. Abschätzung Arbeitsaufwand:     | Integrated Research and design project,   |
|                                      | Time of attendance: approx. 84 h          |
|                                      | Private Study: approx. 368 h              |

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<thead>
<tr>
<th>18. Grundlage für ... :</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19. Medienform:</td>
<td></td>
</tr>
<tr>
<td>20. Angeboten von:</td>
<td></td>
</tr>
</tbody>
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## Modul: 51230 Methods and Tools of Planning and Design

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</tr>
</thead>
<tbody>
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<td>6.0 LP</td>
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<tr>
<td>4. SWS:</td>
<td>4.0</td>
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<tr>
<td>5. Modulduer:</td>
<td>1 Semester</td>
</tr>
<tr>
<td>7. Sprache:</td>
<td>Englisch</td>
</tr>
<tr>
<td>8. Modulverantwortlicher:</td>
<td>Dr. Bernd Eisenberg</td>
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<tr>
<td>9. Dozenten:</td>
<td></td>
</tr>
</tbody>
</table>

### 10. Zuordnung zum Curriculum in diesem Studiengang:

- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Incoming
  - Compulsory Modules
- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Outgoing
  - Compulsory Modules
- M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - In-Depth Modules

### 11. Empfohlene Voraussetzungen:

- On completion participants will have :
  - learned to analyze the social, built and natural environment and are able to apply these tools to planning and design tasks.
  - developed the ability of performing the tasks of stake holder analyses, of mapping, visualizing and modifying data as well as managing projects and writing project briefs.
  - critically understood how to differentiate between various approaches for solving planning and design tasks and they have background knowledge of relevant projects for the respective scales.
  - obtained a thorough understanding of research ethics with regard to different integrated research and design approaches.

### 12. Lernziele:

- This module provides the student with the methodological background needed for the Integrated Research and Design Projects. Student get an overview of methods for gathering, analyzing, assessing and evaluating information and of making decisions that go hand-in-hand with the development of a conceptual approach. In the module students will learn how to apply these methods in the development of their own projects.

### 13. Inhalt:

- DeMers, Michael N. 2009: Fundamentals of geographic information systems
- Davis 1996: GIS- A Visual Approach
- Dühr, Stefanie 2007: The visual language of spatial planning : exploring cartographic representations for spatial planning in Europe
- Hillier, J.2007: Stretching beyond the horizon : a multiplanar theory of spatial planning and governance
- Lange Blaschke 2007: Landschaftsanalyse mit GIS
- MacGarigal 2002: Fragstats Metrics
Malden, Mass et al. 2008: The handbook of geographic information science.

Heywood et al. 2006: An introduction to geographical information systems.

15. Lehrveranstaltungen und -formen:
   • 512301 Lecture Method Workshop I and II
   • 512302 Seminar Methods and Tools

16. Abschätzung Arbeitsaufwand:
   Workshop I and II
   Time of attendance: approx. 28
   Private Study: approx. 62 h
   Seminar
   Time of attendance: approx. 28
   Private Study: approx. 62 h

17. Prüfungsnummer/n und -name:
   51231 Methods and Tools of Planning and Design (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ... :

19. Medienform:

20. Angeboten von:
Modul: 51240 Research and Design Project I

2. Modulkürzel: 011000922
5. Moduldaauer: 1 Semester

3. Leistungspunkte: 6.0 LP

4. SWS: 4.0
7. Sprache: Englisch

8. Modulverantwortlicher: Univ.-Prof. Antje Stokman
9. Dozenten:

10. Zuordnung zum Curriculum in diesem Studiengang:
    DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
    ➞ Kairo
    ➞ Incoming
    ➞ Compulsory Modules
    DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
    ➞ Kairo
    ➞ Outgoing
    ➞ Compulsory Modules
    M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
    ➞ In-Depth Modules

11. Empfohlene Voraussetzungen:

12. Lernziele: This course aims at expanding students’ understanding of the roles and responsibilities of professionals involved in the process of shaping our cities, buildings and urban environment. It links research and design skills in terms of applying ecological knowledge, up to date technologies and shaping built form to research and design skills regarding collaborative forms of project development and organization. Students are asked to creatively and strategically assemble new alliances and relationships among owners, clients, builders, consultants, NGOs etc. that lay the groundwork for innovative environmental, urban and architectural design and research. This course explores how these new models of working can expand the scope and capabilities of architects, urban planners and engineers to embed the role of design and research in the total process of developing and realizing a project.

13. Inhalt: Students will work individually and in small groups on three, interrelated design projects related to a given region and site. In field trips students will meet a variety of stakeholders including local planning authorities and other public sector officials, representatives of the private sector and local residents. Through the field trip and the study of reports and literature, students will familiarize themselves with the specific ecological, socioeconomic and political contexts and analyze the development challenges. This knowledge will be applied in the preparation of a strategic development concept on a regional scale, a local urban development scheme and a specific design proposal on the scale of a local neighbourhood, building, or related to a specific infrastructure intervention. All three concepts will be developed consecutively and are conceptually linked. Students will apply state-of-the-arts planning and development tools and will work individually or in small groups..

14. Literatur:
<table>
<thead>
<tr>
<th>15. Lehrveranstaltungen und -formen:</th>
<th>512401 Research and design project</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Abschätzung Arbeitsaufwand:</td>
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<td>Time of attendance: approx. 56</td>
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<tr>
<td>18. Grundlage für ... :</td>
<td></td>
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<tr>
<td>19. Medienform:</td>
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<tr>
<td>20. Angeboten von:</td>
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Modul: 51200 Sustainable Architecture

2. Modulkürzel: 010600911  
5. Modulsdauer: 1 Semester

3. Leistungspunkte: 6.0 LP  

4. SWS: 4.0  
7. Sprache: Englisch

8. Modulverantwortlicher: Univ.-Prof. Jose Luis Moro

9. Dozenten:

10. Zuordnung zum Curriculum in diesem Studiengang:

   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Kairo
   → Incoming
   → Compulsory Modules

   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Kairo
   → Outgoing
   → Compulsory Modules

   M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → In-Depth Modules

11. Empfohlene Voraussetzungen:

12. Lernziele:

   On completion participants will have:

   Gained a basic knowledge of the contribution building design and construction can render to the general aim of achieving a sustainable environment, as well as the complex interrelations between the diverse measures at hand. Enhanced their theoretical knowledge on available materials, their characteristics and their environmental impact when used as building materials. A knowledge of the most relevant typologies and functional configurations of buildings aimed at enhancing the environmental conditions within and reducing the resources consumed, especially energy consumed for running the building. A knowledge of the most suitable construction types of building envelopes with high insulation values, both opaque and transparent.

   gained a basic knowledge of the principles of lightweight construction, being a fundamental strategy for significantly lessening the ecological footprint of built structures. Acquired a repertoire of typical detail construction solutions for dealing with the specific problems of highly insulated building envelopes, especially related to avoiding thermal bridges and air leakages.

   recognized the relations between questions of energy efficiency, sustainable building design and urban design, to analyse basic problems and to work out architectural and urban concepts on their own in dialogue with interdisciplinary project partners. Students learn basic principles of sustainable and energy efficient architecture and urban planning.

13. Inhalt:

   At the core of this module stands the question how the basic component of built environments, the single building, can be designed and constructed in a way to serve the general goal of sustaining the ecological and resource-related conditions for the future of humankind. The building, in this context, needs to be understood as a part of an overall biological system in which it is embedded and to whose flows of
material and energy, but also of human mental impulses and emotions, it is supposed to adapt itself. This pertains, on one side, its general impact on the psychology and general living conditions of people dwelling in it, but also of those influenced by its mere presence, either within an urban or rural context; further, the resources required to erect it; then, those necessary for running it during the whole timespan of its usage; finally, those required for dismantling or recycling it. Both the overall design of the building as well as its material implementation play a fundamental role in this context and hence will be at the forefront of the issues dealt with in this module. The course provides an overview of best-practice including technology-driven design approaches and “low-tech” alternatives tested in Europe and the global south. This course teaches basic principles of sustainable and energy-efficient building design. Students will study the principles of environmental architecture, including energy conservation, reduction of embodied energy of buildings and recycling, or the possibilities to integrate the use of solar energy and other renewable energy sources in architecture.

14. Literatur:

Fathy, Hassan, 1986: Natural energy and vernacular architecture

Gevorikan, Peter 2009: Alternative energy systems in building design

Jocher, Loch, Gasser, zur Brügge, Tvrtkovic, Lederer 2009: Raumpilot

Mostafavi, Mohsen 2010: Ecological Urbanism

Moro, Rottner, Weiβbach u.a. 2009: Baukonstruktion - Vom Prinzip zum Detail

Solmes, Leslie 2009: Energy efficiency

Schlaich, Bergermann, Bögle 2010: High Energy - Structural Art

Thompson, D´Arcy 2006 (8. Aufl.): On Growth and Form

15. Lehrveranstaltungen und -formen:

• 512001 Lecture Sustainable architecture
• 512002 Projects lecture Sustainable architecture

16. Abschätzung Arbeitsaufwand:

Time of attendance: approx. 56
Private Study: approx. 124 hours

17. Prüfungsnummer/n und -name:

51201 Sustainable Architecture (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ... :

19. Medienform:

20. Angeboten von:
Modul: 51220 Urban Ecology and Ecosystem Design

2. Modulkürzel: 011000913
3. Leistungspunkte: 6.0 LP
4. SWS: 4.0
5. Modulduauer: 1 Semester
7. Sprache: Englisch
8. Modulverantwortlicher: Univ.-Prof. Antje Stokman
9. Dozenten: DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
10. Zuordnung zum Curriculum in diesem Studiengang:
   - Kairo
   - Incoming
   - Compulsory Modules
   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   - Kairo
   - Outgoing
   - Compulsory Modules
   M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   - In-Depth Modules
11. Empfohlene Voraussetzungen:
12. Lernziele: On completion participants will have:
   - gained a basic knowledge of different concepts and trends of perceiving, planning and implementing urban landscapes.
   - critically understood how these concepts vary by multiple perspectives on the environment and different planning scales.
   - developed the ability to know and apply different design concepts, strategies and methods to design process-based urban landscapes
   - obtained a thorough understanding of selected landscape technologies related to different urban and environmental challenges
13. Inhalt: This module will present the basic principles of urban ecology and ecosystem design theory applied to urban environments. At the core of this module stands the question how we can understand cities as dynamic ecosystems and how we can integrate ecological principles into urban and landscape planning. The module aims to make students reflect critically on how urban landscapes are conceptualized, planned and implemented. The module will give an overview on actual environmental challenges related to the urban environment and explain the effects of infrastructure development on landscape structure and function - drawing on knowledge from the fields of ecology, engineering and landscape architecture. It will introduce different theories that try to re-center landscape planning and design around the goal of designing green infrastructure systems rather than creating beautiful and luxury landscape images. Responding to contemporary urban and infrastructure development challenges, this course brings together a series of innovative concepts and theories to discuss different methods, models and measures of ecological design of combined landscape and infrastructure systems for the 21st century.

15. Lehrveranstaltungen und -formen:
   - 512201 Lecture Introduction urban ecology and design
   - 512202 Seminar Ecosystem Design and ecological engineering

16. Abschätzung Arbeitsaufwand:
   Introduction urban ecology and design, Lecture,
   Time of attendance: approx. 28
   Private Study: approx. 62 h
   Ecosystem Design and ecological engineering, Seminar,
   Time of attendance: approx. 28
   Private Study: approx. 62 h

17. Prüfungsnummer/n und -name:
   51221 Urban Ecology and Ecosystem Design (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ... :

19. Medienform:

20. Angeboten von:
## Modul: 51210 Urban Policy, Planning and Sustainable Urban Management

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<tr>
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### 10. Zuordnung zum Curriculum in diesem Studiengang:
- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Incoming
  - Compulsory Modules
- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Outgoing
  - Compulsory Modules
- M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - In-Depth Modules

### 11. Empfohlene Voraussetzungen:

### 12. Lernziele:
On completion participants will have:

- developed a sound understanding the different ways in which key global and regional trends in urbanism have been conceptualised in planning and policy-making.
- enhanced their theoretical and conceptual knowledge on planning, urban policy and governance.
- reflected on ethical concerns of their practice.
- familiarized themselves with conceptual and operational tools on different scales of planning (regional, master, strategic, community, development and project).
- gained relevant tools to assess planning practices in relation to different thematic issues (environment, housing, international division of production and workforce, urban transformation)
- be prepared to develop strategic interventions.

### 13. Inhalt:
This module will focus on different theoretical approaches to cities, environment, social issues and to the practice of urban and regional planning itself. The module aims to make students reflect critically on urban policy-making, urban and regional planning and urban management. In highlighting how different theoretical approaches inform planning practices (and vice versa) the module demonstrates that theoretical and practical approaches to planning are closely interlinked. Furthermore, the module draws attention to the dangers of uncritically transferring theories or practices to different urban contexts (e.g. global north to global south; or growing city to shrinking city). Practical constraints of relying on best practice methodologies (and mainstream urban theories) are highlighted.

### 14. Literatur:
Hasan, A., S. Patel and D. Satterthwaite (2005): How to Meet the Millennium Development Goals (MDGS) in Urban Areas
15. Lehrveranstaltungen und -formen:
   - 512101 Lecture Urban Planning I
   - 512102 Lecture Urban Planning II

16. Abschätzung Arbeitsaufwand:
   Urban Planning I
   Time of attendance: approx. 28 h
   Private Study: approx. 62 h
   Urban Planning II
   Time of attendance: approx. 28 h
   Private Study: approx. 62 h

17. Prüfungsnummer/n und -name:
   51211 Urban Policy, Planning and Sustainable Urban Management (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ...

19. Medienform:

20. Angeboten von:
112 Electives

Zugeordnete Module:

- 51180 Sustainable Architecture II (Design and Construction)
- 51190 Construction Economics M 1
- 51290 Urban Policy, Planning and Sustainable Urban Management II
- 51300 Urban Ecology and Ecosystem Design II (Geodesign)
- 51310 Contemporary Topics of Architecture and Urban Planning
- 51320 Contemporary Topics of Infrastructure Planning and Resource Management
Modul: 51190 Construction Economics M 1

2. Modulkürzel: 010300001  
3. Leistungspunkte: 6.0 LP  
4. SWS: 4.0  
5. Modulduauer: 1 Semester  
6. Turnus: unregelmäßig  
7. Sprache: Deutsch  
8. Modulverantwortlicher: Univ.-Prof Dr. Christian Stoy  
9. Dozenten:  
• Christian Deplewski  
• Christian Stoy  
• Christopher Hagmann  
10. Zuordnung zum Curriculum in diesem Studiengang:  
DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
➞ Kairo  
➞ Incoming  
➞ Electives  
DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
➞ Kairo  
➞ Outgoing  
➞ Electives  
M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
➞ Specialization Modules  
11. Empfohlene Voraussetzungen:  
12. Lernziele:  
Die Studierenden haben ein allgemeines Verständnis für die Planung, Ausführung und Nutzung von Bauwerken als gestaltende, technische und wirtschaftliche Aufgabe des Architekten erlangt.  
13. Inhalt:  
Die Veranstaltung gibt einen allgemeinen Einblick in die verschiedenen bauökonomischen Themenstellungen und deren Wechselwirkungen. Das Spektrum wird anhand von konkreten Fragestellungen behandelt, die anhand von Projekten und Entwurfsaufgaben geübt werden. Die folgenden Schwerpunkte bilden unter anderem das Repertoire:  
• Projektentwicklung und Investitionsrechnung  
• Projektmanagement (Termin- und Ablaufplanung etc.)  
• Nutzungs- und Lebenszykluskostenplanung (Energieplanung etc.)  
• Gebäudeökonomie  
• Immobilienmanagement  
• Bauen für die Industrie  
14. Literatur:  
Ein veranstaltungsbegleitendes Skript sowie weiterführende Literaturhinweise werden zu Beginn der Veranstaltung verteilt.  
15. Lehrveranstaltungen und -formen: 511901 Seminar  
16. Abschätzung Arbeitsaufwand: 180 h (56 h Präsenzzeit, 124 h Selbststudium)  
17. Prüfungsnummer/n und -name: 51191 Construction Economics M 1 (LBP), schriftliche Prüfung, Gewichtung: 1.0  
18. Grundlage für ... :
19. Medienform:

20. Angeboten von:
### Modul: 51310 Contemporary Topics of Architecture and Urban Planning

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| 8. Modulverantwortlicher: | Univ.-Prof. Antje Stokman |

<table>
<thead>
<tr>
<th>10. Zuordnung zum Curriculum in diesem Studiengang:</th>
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<tr>
<td>DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013</td>
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<td>→ Electives</td>
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<td>→ Specialization Modules</td>
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<table>
<thead>
<tr>
<th>12. Lernziele:</th>
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<tbody>
<tr>
<td>The module aims to Contribute to the knowledge about contemporary topics of architecture and urban planning</td>
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<tr>
<td>The attendees are expected to integrate their current design expertise with contemporary topics of architecture and urban planning.</td>
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<th>13. Inhalt:</th>
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<tr>
<td>Design Principles</td>
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<td>Urbanism and Housing</td>
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<td>Building Economics</td>
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| 18. Grundlage für … : |

| 19. Medienform: |

| 20. Angeboten von: |
Modul: 51320 Contemporary Topics of Infrastructure Planning and Resource Management

2. Modulkürzel:  010300002  
5. Modulauer:  1 Semester  

3. Leistungspunkte:  6.0 LP  
6. Turnus:  jedes Semester  

4. SWS:  4.0  
7. Sprache:  Englisch  

8. Modulverantwortlicher:  Univ.-Prof. Antje Stokman  

9. Dozenten:  

10. Zuordnung zum Curriculum in diesem Studiengang:  
DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Kairo  
→ Incoming  
→ Electives  

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Kairo  
→ Outgoing  
→ Electives  

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Specialization Modules  

11. Empfohlene Voraussetzungen:  

12. Lernziele:  
The module aims to Contribute to the knowledge about contemporary topics of Infrastructure Planning and Resource Management  
The attendees are expected to integrate their current expertise with contemporary topics infrastructure planning and resource management.  

13. Inhalt:  
General Aspects of infrastructure planning  
Special aspects of urban water management  
Methodological Aspects of Infrastructure Planning  

14. Literatur:  

15. Lehrveranstaltungen und -formen:  513201 Contemporary Topics  

16. Abschätzung Arbeitsaufwand:  180 h (56 h Präsenzzeit, 124 h Selbststudium)  

17. Prüfungsnummer/n und -name:  51321 Contemporary Topics of Infrastructure Planning and Resource Management (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0  

18. Grundlage für ... :  

19. Medienform:  

20. Angeboten von:  

Stand: 25. März 2014  
Seite 22 von 59
Modul 51180 Sustainable Architecture II (Design and Construction)

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<td>8. Modulverantwortlicher:</td>
<td>Univ.-Prof. Jose Luis Moro</td>
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10. Zuordnung zum Curriculum in diesem Studiengang:
- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  → Kairo
  → Incoming
  → Electives
- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  → Kairo
  → Outgoing
  → Electives
- M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  → Specialization Modules

11. Empfohlene Voraussetzungen: Grundlegende Kenntnisse in Tragwerkslehre, Technischem Zeichnen, Konstruktion, Planung und Gebäudeentwurf


Zu den Inhalten zählt nicht nur die Analyse der relevanten Entwurfsfaktoren beim Konzipieren eines Gebäudes, sondern darüber hinaus das Verdeutlichen der Wechselbeziehungen und gegenseitigen Abhängigkeiten zwischen ihnen. Zum Seminarprogramm gehören Gebäudeanalysen, Stegreifübungen, Vorträge und Bauwerksbesichtigungen.

Das Fach wird in fakultätsübergreifender Form für Architektur-, Bauingenieur- und Technikpädagogikstudenten gelehrt

14. Literatur: • Vorlesungsskripte
• Übungsskripte
• Literaturliste

15. Lehrveranstaltungen und -formen:

16. Abschätzung Arbeitsaufwand:
- Präsenzzzeit: 42 h
- Selbststudium / Nacharbeitszeit: 138 h
- Gesamt: 180 h
17. Prüfungsnummer/n und -name:
   - 51181 Sustainable Architecture II (Design and Construction) (PL), schriftlich, eventuell mündlich, Gewichtung: 1.0
   - V Vorleistung (USL-V), schriftlich, eventuell mündlich

18. Grundlage für ... :

19. Medienform:

20. Angeboten von:
Modul: 51300 Urban Ecology and Ecosystem Design II (Geodesign)

2. Modulkürzel: 011000933
5. Modulduer: 1 Semester
3. Leistungspunkte: 6.0 LP
6. Turnus: jedes 2. Semester, SoSe
4. SWS: 2.0
7. Sprache: Englisch

8. Modulverantwortlicher: Dr. Hans-Georg Schwarz-von Raumer

9. Dozenten:

10. Zuordnung zum Curriculum in diesem Studiengang:
    DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
        → Kairo
        → Incoming
        → Electives
    DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
        → Kairo
        → Outgoing
        → Electives
    M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
        → Specialization Modules


12. Lernziele:
    Passing successfully the course the student will have got
    • knowledge and skills with regard to useful models and GIS-techniques
      for sustainable design
    • a deep understanding of geodesign approaches and the problems
      related to their implementation
    • experiences and ideas concerning own work practices and preferred
      workflows

13. Inhalt:
    Geodesign denotes a methodological field which brings together
    creativity and knowledge based constructiveness in a model
    and communication driven design process of meso-scaled planning tasks.
    Both technical and communicational challenges must be tackled and a lot
    of them still are unsolved: How to install a direct man-machine feedback
    loop? What are the restrictions for the designer’s degree of freedom in
    creativity, choice and finality? How to tackle uncertainty and ambiguity
    of model results? Which limits do exist with respect to tool interfaces
    and IT-skills expected? Do we need an optimized collaboration between
    designers/planners and IT-specialists/modellers?
    
    In its first part the module provides lectures which draw the basic lines
    and illustrate solutions of geodesign approaches. The second part
    consists of hands-on exercises and experiments. Our exercises apply
    models and broadly use Geographic Information Systems (GIS).

14. Literatur:

15. Lehrveranstaltungen und -formen:
    • 513001 Seminar Geodesign
    • 513002 Exercise Geodesign Seminar

16. Abschätzung Arbeitsaufwand:
    Attendance time: ca. 56 h
    Self study: ca. 124 h
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<td>20. Angeboten von:</td>
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Modulhandbuch: Double Masters Degrees Integrated Urbanism and Sustainable Design (IUSD)

Modul: 51290 Urban Policy, Planning and Sustainable Urban Management II

2. Modulkürzel: 011221934  
5. Modulduer: 1 Semester

3. Leistungspunkte: 6.0 LP  
6. Turnus: jedes 2. Semester, SoSe

4. SWS: 3.0  
7. Sprache: Englisch


9. Dozenten:

10. Zuordnung zum Curriculum in diesem Studiengang:

   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Kairo
   → Incoming
   → Electives

   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Kairo
   → Outgoing
   → Electives

   M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Specialization Modules

11. Empfohlene Voraussetzungen:

12. Lernziele:

   The aim of the seminar is to approach the broad topic of sustainable urban planning with a holistic view. Issues such as settlement patterns, open space, city climate, energy, water, material flows, life cycle cost, sustainable mobility, project management, integrated planning, quality assurance, are examined and evaluated in relation using the selected pilot projects. Intense discussions of specific topics will be promoted. External speakers and experts are invited to give workshops and presentations in order to achieve the overall goal of the seminar: to study the interactions between different sustainability principles.

13. Inhalt:

   Our ecological footprint currently exceeds the Earth’s ability to regenerate by about 30%. Cities can take a key role in the transformation towards a more sustainable development because of immense possibilities of organising energy, waste and transportation systems more efficiently. The energy consumption per person can be reduced drastically. However, the saving of energy and resources is only one aspect among many. Another aspect is the physical and functional density of cities. It can, for instance, improve the social interaction of residents and allow municipalities to provide a large variety of social and cultural activities, which would fail in less densely populated areas simply because of the financing. The question underlying this seminar is how cities and neighborhoods need to be developed that offer residents a high quality of life, while being energy-efficient and environmentally friendly.

14. Literatur:

15. Lehrveranstaltungen und -formen:

   512901 Seminar Urban Policy, Planning and Sustainable Urban Management II

16. Abschätzung Arbeitsaufwand:

   Attendance time: ca. 56 h
   Self study: ca. 124 h
17. Prüfungsnummer/n und -name: 51291 Urban Policy, Planning and Sustainable Urban Management II (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ...

19. Medienform:

20. Angeboten von:
113 Key Qualifications Related to the Subject

Zugeordnete Module:  
51270  Research Methods I - Seminar 1  
51280  Research Methods II - Seminar 2
Modul: 51270 Research Methods I - Seminar 1

2. Modulkürzel: 011221941  
5. Moduldauer: 1 Semester  
3. Leistungspunkte: 3.0 LP  
6. Turnus: jedes 2. Semester, SoSe  
4. SWS: 2.0  
7. Sprache: Englisch


10. Zuordnung zum Curriculum in diesem Studiengang:  
DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Kairo  
→ Incoming  
→ Key Qualifications Related to the Subject  
DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Kairo  
→ Outgoing  
→ Key Qualifications Related to the Subject  
M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Key Qualifications Related to the Subject

11. Empfohlene Voraussetzungen:  
Students have gained a broad understanding of relevant theoretical concepts and technical tools in the field of integrated and sustainable design. They are able to categorize planning and design task according to various criteria, such as scale, stakeholder involvement, social and ecological impacts.

12. Lernziele:  
Students are capable of

13. Inhalt:  
The module is linked and taught in parallel to the Integrated Case Study. Students will acquire theoretical, analytical and technical skills, which will support the design proposals developed in relation to a specific site. Students will study relevant best practice projects presented by external experts and practitioners and learn to interact with regional and local stakeholders.

14. Literatur:  
Feireiss (ed.): Architecture of Change 2: Sustainability and Humanity in the Built Environment

15. Lehrveranstaltungen und -formen:  
512701 Research Methods I

16. Abschätzung Arbeitsaufwand:  
Attendance time: ca. 20 h  
Self study: ca. 70 h

17. Prüfungsnummer/n und -name:  
51272 Research Methods I - Seminar 1 (USL), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ... :

19. Medienform:  

20. Angeboten von:
Modul: 51280 Research Methods II - Seminar 2

2. Modulkürzel: 011221942
3. Leistungspunkte: 3.0 LP
4. SWS: 2.0

5. Moduldauer: 1 Semester
7. Sprache: Englisch

9. Dozenten:

10. Zuordnung zum Curriculum in diesem Studiengang:

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  ➔ Cairo
  ➔ Incoming
  ➔ Key Qualifications Related to the Subject

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  ➔ Cairo
  ➔ Outgoing
  ➔ Key Qualifications Related to the Subject

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  ➔ Key Qualifications Related to the Subject

11. Empfohlene Voraussetzungen:

12. Lernziele:

Students have gained a broad understanding of relevant theoretical concepts and technical tools in the field of integrated and sustainable design. They are able to categorize planning and design task according to various criteria, such as scale, stakeholder involvement, social and ecological impacts.

Students are capable of

13. Inhalt:

The module is linked and taught in parallel to the Integrated Case Study. Students will acquire theoretical, analytical and technical skills, which will support the design proposals developed in relation to a specific site. Students will study relevant best practice projects presented by external experts and practitioners and learn to interact with regional and local stakeholders.

14. Literatur:

15. Lehrveranstaltungen und -formen: 512801 Research Methods II

16. Abschätzung Arbeitsaufwand:

  Attendance time: ca. 20 h
  Self study: ca. 70 h

17. Prüfungsnummer/n und -name: 51281 Research Methods II - Seminar 2 (USL), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ...

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## 120 Outgoing

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<tr>
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<tr>
<td>122</td>
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121 Compulsory Modules

Zugeordnete Module:  
51200 Sustainable Architecture  
51210 Urban Policy, Planning and Sustainable Urban Management  
51220 Urban Ecology and Ecosystem Design  
51230 Methods and Tools of Planning and Design  
51240 Research and Design Project I  
51250 Integrated Research and Design Project II
## Modul: 51250 Integrated Research and Design Project II

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### 10. Zuordnung zum Curriculum in diesem Studiengang:

- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Incoming
  - Compulsory Modules

- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Outgoing
  - Compulsory Modules

- M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - In-Depth Modules

### 11. Empfohlene Voraussetzungen:

- Research and design project I

### 12. Lernziele:

This course aims at expanding students' understanding of the roles and responsibilities of professionals involved in the process of shaping our cities, buildings and urban environment. It links research and design skills in terms of applying ecological knowledge, up to date technologies and shaping built form to research and design skills in terms of collaborative forms of project development and organization. Students are asked to creatively and strategically assemble new alliances and relationships among owners, clients, builders, fabricators, consultants, NGOs etc. that lay the groundwork for innovative environmental, urban and architectural design and research. This course explores how these new models of working can expand the scope and capabilities of architects, urban planners and engineers to embed the role of design and research in the total process of developing and realizing a project. The "Integrated Research and Design Module" is designed to address this new condition and prepare the next generation of professionals to lead in the development of new modes of research and design practice.

### 13. Inhalt:

Students will apply theoretical and technical knowledge to develop proposals for an integrated development strategy for a specific site. Students will learn to utilize their specific individual skills and interests to form a multi-disciplinary design team working with actual clients and a multitude of stakeholders. Together with external partners, students will develop their own design brief and planning guidelines, undertake baseline research on-site and develop an integrated development strategy which may include proposals on an urban and regional scale, proposals for environmental and infrastructural improvement, concepts for neighbourhood upgrading or architectural interventions. An interdisciplinary team of lecturers and external experts will support students during the entire working period.

### 14. Literatur:

Beltran del Rio et al. 2010: Improving Informal Areas in Greater Cairo
Read et al.(ed.) 2005: Future City
Loeckx et al. (eds) 2004: Urban Trialogues - visions, projects co-productions

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<td>Private Study: approx. 368 h</td>
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Modul: 51230 Methods and Tools of Planning and Design

2. Modulkürzel: 011000921
5. Modulsdauer: 1 Semester

3. Leistungspunkte: 6.0 LP

4. SWS: 4.0
7. Sprache: Englisch

8. Modulverantwortlicher: Dr. Bernd Eisenberg

9. Dozenten: DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Cairo
   → Incoming
   → Compulsory Modules

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Cairo
   → Outgoing
   → Compulsory Modules

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → In-Depth Modules

11. Empfohlene Voraussetzungen:

12. Lernziele:
   On completion participants will have:
   - learned to analyze the social, built and natural environment and are able to apply these tools to planning and design tasks.
   - developed the ability of performing the tasks of stake holder analyses, of mapping, visualizing and modifying data as well as managing projects and writing project briefs.
   - critically understood how to differentiate between various approaches for solving planning and design tasks and they have background knowledge of relevant projects for the respective scales.
   - obtained a thorough understanding of research ethics with regard to different integrated research and design approaches.

13. Inhalt:
   This module provides the student with the methodological background needed for the Integrated Research and Design Projects. Student get an overview of methods for gathering, analyzing, assessing and evaluating information and of making decisions that go hand-in-hand with the development of a conceptual approach. In the module students will learn how to apply these methods in the development of their own projects.

14. Literatur:
   DeMers, Michael N. 2009: Fundamentals of geographic information systems
   Davis 1996: GIS - A Visual Approach
   Dühr, Stefanie 2007: The visual language of spatial planning : exploring cartographic representations for spatial planning in Europe
   Hillier, J.2007: Stretching beyond the horizon : a multiplanar theory of spatial planning and governance
   Lange Blaschke 2007: Landschaftsanalyse mit GIS
   MacGarigal 2002: Fragstats Metrics
Malden, Mass et al. 2008: The handbook of geographic information science.

Heywood et al. 2006: An introduction to geographical information systems.

| 15. Lehrveranstaltungen und -formen: | • 512301 Lecture Method Workshop I and II  
• 512302 Seminar Methods and Tools |
| 16. Abschätzung Arbeitsaufwand: | Workshop I and II  
Time of attendance: approx. 28  
Private Study: approx. 62 h  
Seminar  
Time of attendance: approx. 28  
Private Study: approx. 62 h |
| 17. Prüfungsnummer/n und -name: | 51231 Methods and Tools of Planning and Design (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0 |
| 18. Grundlage für ... : |
| 19. Medienform: |
| 20. Angeboten von: |
# Modul: 51240 Research and Design Project I

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<td>7. Sprache:</td>
<td>Englisch</td>
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<tr>
<td>8. Modulverantwortlicher:</td>
<td>Univ.-Prof. Antje Stokman</td>
</tr>
<tr>
<td>10. Zuordnung zum Curriculum in diesem Studiengang:</td>
<td>This course aims at expanding students' understanding of the roles and responsibilities of professionals involved in the process of shaping our cities, buildings and urban environment. It links research and design skills in terms of applying ecological knowledge, up to date technologies and shaping built form to research and design skills regarding collaborative forms of project development and organization. Students are asked to creatively and strategically assemble new alliances and relationships among owners, clients, builders, consultants, NGOs etc. that lay the groundwork for innovative environmental, urban and architectural design and research. This course explores how these new models of working can expand the scope and capabilities of architects, urban planners and engineers to embed the role of design and research in the total process of developing and realizing a project.</td>
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<tr>
<td>11. Empfohlene Voraussetzungen:</td>
<td>Students will work individually and in small groups on three, interrelated design projects related to a given region and site. In field trips students will meet a variety of stakeholders including local planning authorities and other public sector officials, representatives of the private sector and local residents. Through the field trip and the study of reports and literature, students will familiarize themselves with the specific ecological, socioeconomic and political contexts and analyze the development challenges. This knowledge will be applied in the preparation of a strategic development concept on a regional scale, a local urban development scheme and a specific design proposal on the scale of a local neighbourhood, building, or related to a specific infrastructure intervention. All three concepts will be developed consecutively and are conceptually linked. Students will apply state-of-the-arts planning and development tools and will work individually or in small groups.</td>
</tr>
<tr>
<td>13. Inhalt:</td>
<td></td>
</tr>
</tbody>
</table>
OSA 2010: Human settlements - formulations and (re-)-calibrations. Sun Academia

<table>
<thead>
<tr>
<th>15. Lehrveranstaltungen und -formen:</th>
<th>512401 Research and design project</th>
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<td>16. Abschätzung Arbeitsaufwand:</td>
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<tr>
<td></td>
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<td>Private Study: approx. 124 h</td>
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<td>19. Medienform:</td>
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<td>20. Angeboten von:</td>
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Modul: 51200 Sustainable Architecture

2. Modulkürzel: 010600911
3. Leistungspunkte: 6.0 LP
4. SWS: 4.0
5. Modul: Sustainable Architecture
7. Sprache: Englisch
8. Modulverantwortlicher: Univ.-Prof. Jose Luis Moro
9. Dozenten:
10. Zuordnung zum Curriculum in diesem Studiengang:
   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   ➔ Kairo
   ➔ Incoming
   ➔ Compulsory Modules
   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   ➔ Kairo
   ➔ Outgoing
   ➔ Compulsory Modules
   M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   ➔ In-Depth Modules
11. Empfohlene Voraussetzungen:
12. Lernziele: On completion participants will have:

   Gained a basic knowledge of the contribution building design and construction can render to the general aim of achieving a sustainable environment, as well as the complex interrelations between the diverse measures at hand. Enhanced their theoretical knowledge on available materials, their characteristics and their environmental impact when used as building materials. A knowledge of the most relevant typologies and functional configurations of buildings aimed at enhancing the environmental conditions within and reducing the resources consumed, especially energy consumed for running the building. A knowledge of the most suitable construction types of building envelopes with high insulation values, both opaque and transparent.

   gained a basic knowledge of the principles of lightweight construction, being a fundamental strategy for significantly lessening the ecological footprint of built structures. Acquired a repertoire of typical detail construction solutions for dealing with the specific problems of highly insulated building envelopes, especially related to avoiding thermal bridges and air leakages.

   recognized the relations between questions of energy efficiency, sustainable building design and urban design, to analyse basic problems and to work out architectural and urban concepts on their own in dialogue with interdisciplinary project partners. Students learn basic principles of sustainable and energy efficient architecture and urban planning.

13. Inhalt: At the core of this module stands the question how the basic component of built environments, the single building, can be designed and constructed in a way to serve the general goal of sustaining the ecological and resource-related conditions for the future of humankind. The building, in this context, needs to be understood as a part of an overall biological system in which it is embedded and to whose flows of
material and energy, but also of human mental impulses and emotions, it is supposed to adapt itself. This pertains, on one side, its general impact on the psychology and general living conditions of people dwelling in it, but also of those influenced by its mere presence, either within an urban or rural context; further, the resources required to erect it; then, those necessary for running it during the whole timespan of its usage; finally, those required for dismantling or recycling it. Both the overall design of the building as well as its material implementation play a fundamental role in this context and hence will be at the forefront of the issues dealt with in this module. The course provides an overview of best-practice including technology-driven design approaches and “low-tech” alternatives tested in Europe and the global south. This course teaches basic principles of sustainable and energy-efficient building design. Students will study the principles of environmental architecture, including energy conservation, reduction of embodied energy of buildings and recycling, or the possibilities to integrate the use of solar energy and other renewable energy sources in architecture.

14. Literatur:

Fathy, Hassan, 1986: Natural energy and vernacular architecture
Gevorikan, Peter 2009: Alternative energy systems in building design
Jocher, Loch, Gasser, zur Brügge, Tvrkovic, Lederer 2009: Raumpilot
Mostafavi, Mohsen 2010: Ecological Urbanism
Moro, Rottner, Weiβbach u.a. 2009: Baukonstruktion - Vom Prinzip zum Detail
Solmes, Leslie 2009: Energy efficiency
Schlaich, Bergermann, Bögle 2010: High Energy - Structural Art
Thompson, D´Arcy 2006 (8. Aufl.): On Growth and Form

15. Lehrveranstaltungen und -formen:

• 512001 Lecture Sustainable architecture
• 512002 Projects lecture Sustainable architecture

16. Abschätzung Arbeitsaufwand:

Time of attendance: approx. 56
Private Study: approx. 124 hours

17. Prüfungsnummer/n und -name:

51201 Sustainable Architecture (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ... :

19. Medienform:

20. Angeboten von:
Modul: 51220 Urban Ecology and Ecosystem Design

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<td>8. Modulverantwortlicher:</td>
<td>Univ.-Prof. Antje Stokman</td>
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<td>9. Dozenten:</td>
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</tr>
<tr>
<td>11. Empfohlene Voraussetzungen:</td>
<td></td>
</tr>
<tr>
<td>12. Lernziele:</td>
<td>On completion participants will have:</td>
</tr>
<tr>
<td></td>
<td>• gained a basic knowledge of different concepts and trends of perceiving, planning and implementing urban landscapes.</td>
</tr>
<tr>
<td></td>
<td>• critically understood how these concepts vary by multiple perspectives on the environment and different planning scales.</td>
</tr>
<tr>
<td></td>
<td>• developed the ability to know and apply different design concepts, strategies and methods to design process-based urban landscapes</td>
</tr>
<tr>
<td></td>
<td>• obtained a thorough understanding of selected landscape technologies related to different urban and environmental challenges</td>
</tr>
<tr>
<td>13. Inhalt:</td>
<td>This module will present the basic principles of urban ecology and ecosystem design theory applied to urban environments. At the core of this module stands the question how we can understand cities as dynamic ecosystems and how we can integrate ecological principles into urban and landscape planning. The module aims to make students reflect critically on how urban landscapes are conceptualized, planned and implemented. The module will give an overview on actual environmental challenges related to the urban environment and explain the effects of infrastructure development on landscape structure and function - drawing on knowledge from the fields of ecology, engineering and landscape architecture. It will introduce different theories that try to re-center landscape planning and design around the goal of designing green infrastructure systems rather than creating beautiful and luxury landscape images. Responding to contemporary urban and infrastructure development challenges, this course brings together a series of innovative concepts and theories to discuss different methods, models and measures of ecological design of combined landscape and infrastructure systems for the 21st century.</td>
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<tr>
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<td>• 512201 Lecture Introduction urban ecology and design</td>
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<td>• 512202 Seminar Ecosystem Design and ecological engineering</td>
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<tr>
<td>Ecosystem Design and ecological engineering, Seminar,</td>
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<th>19. Medienform:</th>
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## Modul: 51210 Urban Policy, Planning and Sustainable Urban Management

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<th>1 Semester</th>
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9. Dozenten:

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<th>10. Zuordnung zum Curriculum in diesem Studiengang:</th>
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<tr>
<td>DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013</td>
</tr>
<tr>
<td>→ Kairo</td>
</tr>
<tr>
<td>→ Incoming</td>
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<tr>
<td>→ Compulsory Modules</td>
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<tr>
<td>DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013</td>
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<tr>
<td>→ Kairo</td>
</tr>
<tr>
<td>→ Outgoing</td>
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<tr>
<td>→ Compulsory Modules</td>
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<tr>
<td>M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013</td>
</tr>
<tr>
<td>→ In-Depth Modules</td>
</tr>
</tbody>
</table>

11. Empfohlene Voraussetzungen:

12. Lernziele: On completion participants will have:

- developed a sound understanding the different ways in which key global and regional trends in urbanism have been conceptualised in planning and policy-making.
- enhanced their theoretical and conceptual knowledge on planning, urban policy and governance.
- reflected on ethical concerns of their practice.
- familiarized themselves with conceptual and operational tools on different scales of planning (regional, master, strategic, community, development and project).
- gained relevant tools to assess planning practices in relation to different thematic issues (environment, housing, international division of production and workforce, urban transformation).
- be prepared to develop strategic interventions.

13. Inhalt: This module will focus on different theoretical approaches to cities, environment, social issues and to the practice of urban and regional planning itself. The module aims to make students reflect critically on urban policy-making, urban and regional planning and urban management. In highlighting how different theoretical approaches inform planning practices (and vice versa) the module demonstrates that theoretical and practical approaches to planning are closely interlinked. Furthermore, the module draws attention to the dangers of uncritically transferring theories or practices to different urban contexts (e.g. global north to global south; or growing city to shrinking city). Practical constraints of relying on best practice methodologies (and mainstream urban theories) are highlighted.


15. Lehrveranstaltungen und -formen:
   • 512101 Lecture Urban Planning I
   • 512102 Lecture Urban Planning II

16. Abschätzung Arbeitsaufwand:

   Urban Planning I
   Time of attendance: approx. 28 h
   Private Study: approx. 62 h

   Urban Planning II
   Time of attendance: approx. 28 h
   Private Study: approx. 62 h

17. Prüfungsnummer/n und -name:
   51211 Urban Policy, Planning and Sustainable Urban Management (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ... :

19. Medienform:

20. Angeboten von:
122 Electives

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<tr>
<td>51180</td>
<td>Sustainable Architecture II (Design and Construction)</td>
</tr>
<tr>
<td>51190</td>
<td>Construction Economics M 1</td>
</tr>
<tr>
<td>51290</td>
<td>Urban Policy, Planning and Sustainable Urban Management II</td>
</tr>
<tr>
<td>51300</td>
<td>Urban Ecology and Ecosystem Design II (Geodesign)</td>
</tr>
<tr>
<td>51310</td>
<td>Contemporary Topics of Architecture and Urban Planning</td>
</tr>
<tr>
<td>51320</td>
<td>Contemporary Topics of Infrastructure Planning and Resource Management</td>
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</table>
Modul: 51190 Construction Economics M 1

2. Modulkürzel: 010300001  
5. Modulduer: 1 Semester  

3. Leistungspunkte: 6.0 LP  
6. Turnus: unregelmäßig  

4. SWS: 4.0  
7. Sprache: Deutsch  

8. Modulverantwortlicher: Univ.-Prof. Dr. Christian Stoy  

9. Dozenten:  
• Christian Deplewski  
• Christian Stoy  
• Christopher Hagmann  

10. Zuordnung zum Curriculum in diesem Studiengang:  
Double M.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
➡ Kairo  
➡ Incoming  
➡ Electives  

Double M.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
➡ Kairo  
➡ Outgoing  
➡ Electives  

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
➡ Specialization Modules  

11. Empfohlene Voraussetzungen:  

12. Lernziele:  
Die Studierenden haben ein allgemeines Verständnis für die Planung, Ausführung und Nutzung von Bauwerken als gestaltende, technische und wirtschaftliche Aufgabe des Architekten erlangt.  

13. Inhalt:  
Die Veranstaltung gibt einen allgemeinen Einblick in die verschiedenen bauökonomischen Themenstellungen und deren Wechselwirkungen. Das Spektrum wird anhand von konkreten Fragestellungen behandelt, die anhand von Projekten und Entwurfsaufgaben geübt werden. Die folgenden Schwerpunkte bilden unter anderem das Repertoire:  
• Projektentwicklung und Investitionsrechnung  
• Projektmanagement (Termin- und Ablaufplanung etc.)  
• Nutzungs- und Lebenszykluskostenplanung (Energieplanung etc.)  
• Gebäudeökonomie  
• Immobilienmanagement  
• Bauen für die Industrie  

14. Literatur:  

Ein veranstaltungsbegleitendes Skript sowie weiterführende Literaturhinweise werden zu Beginn der Veranstaltung verteilt.  

15. Lehrveranstaltungen und -formen:  
511901 Seminar  

16. Abschätzung Arbeitsaufwand:  
180 h (56 h Präsenzzeit, 124 h Selbststudium)  

17. Prüfungsnummer/n und -name:  
51191 Construction Economics M 1 (LBP), schriftliche Prüfung, Gewichtung: 1.0  

18. Grundlage für ... :
19. Medienform:

20. Angeboten von:
## Modul: 51310 Contemporary Topics of Architecture and Urban Planning

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<td>6. Turnus:</td>
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<td>7. Sprache:</td>
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<td>8. Modulverantwortlicher:</td>
<td>Univ.-Prof. Antje Stokman</td>
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</tbody>
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### 10. Zuordnung zum Curriculum in diesem Studiengang:

- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Incoming
  - Electives
- DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Kairo
  - Outgoing
  - Electives
- M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  - Specialization Modules

### 12. Lernziele:

The module aims to contribute to the knowledge about contemporary topics of architecture and urban planning.

The attendees are expected to integrate their current design expertise with contemporary topics of architecture and urban planning.

### 13. Inhalt:

- Design Principles
- Urbanism and Housing
- Construction and Design
- Building Economics
- ...

### 15. Lehrveranstaltungen und -formen:

| Lehrveranstaltung | 513101 | Contemporary Topics |

### 16. Abschätzung Arbeitsaufwand:

180 h (56 h Präsenzzeit, 124 h Selbststudium)

### 17. Prüfungsnummer/n und -name:

| Prüfungsnummer/n | 51311 | Contemporary Topics of Architecture and Urban Planning (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0 |

### 18. Grundlage für ...:

### 19. Medienform:

### 20. Angeboten von:
Modul: 51320 Contemporary Topics of Infrastructure Planning and Resource Management

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<td>Univ.-Prof. Antje Stokman</td>
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<td>9. Dozenten:</td>
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| 10. Zuordnung zum Curriculum in diesem Studiengang: | DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Kairo  
→ Incoming  
→ Electives  

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Kairo  
→ Outgoing  
→ Electives  

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013  
→ Specialization Modules |
| 11. Empfohlene Voraussetzungen: | |
| 12. Lernziele: | The module aims to Contribute to the knowledge about contemporary topics of Infrastructure Planning and Resource Management  
The attendees are expected to integrate their current expertise with contemporary topics infrastructure planning and resource management. |
| 13. Inhalt: | General Aspects of infrastructure planning  
Special aspects of urban water management  
Methodological Aspects of Infrastructure Planning  
... |
| 14. Literatur: | |
| 15. Lehrveranstaltungen und -formen: | 513201 Contemporary Topics |
| 16. Abschätzung Arbeitsaufwand: | 180 h (56 h Präsenzzeit, 124 h Selbststudium) |
| 17. Prüfungsnummer/n und -name: | 51321 Contemporary Topics of Infrastructure Planning and Resource Management (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0 |
| 18. Grundlage für ... : | |
| 19. Medienform: | |
| 20. Angeboten von: | |
Modul: 51180 Sustainable Architecture II (Design and Construction)

2. Modulkürzel: 010600420
5. Moduldauer: 1 Semester

3. Leistungspunkte: 6.0 LP

4. SWS: 4.0
7. Sprache: Deutsch

8. Modulverantwortlicher: Univ.-Prof. Jose Luis Moro

10. Zuordnung zum Curriculum in diesem Studiengang:

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  → Kairo
  → Incoming
  → Electives

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  → Kairo
  → Outgoing
  → Electives

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  → Specialization Modules

11. Empfohlene Voraussetzungen: Grundlegende Kenntnisse in Tragwerkslehre, Technischem Zeichnen, Konstruktion, Planung und Gebäudeentwurf


Zu den Inhalten zählt nicht nur die Analyse der relevanten Entwurfsfaktoren beim Konzipieren eines Gebäudes, sondern darüber hinaus das Verdeutlichen der Wechselbeziehungen und gegenseitigen Abhängigkeiten zwischen ihnen. Zum Seminarprogramm gehören Gebäudeanalysen, Stegreifübungen, Vorträge und Bauwerksbesichtigungen.

Das Fach wird in fakultätsübergreifender Form für Architektur-, Bauingenieur- und Technikpädagogikstudenten gelehrt

14. Literatur: • Vorlesungsskripte
• Übungsskripte
• Literaturliste

15. Lehrveranstaltungen und -formen:

16. Abschätzung Arbeitsaufwand: Präsenzzzeit: 42 h
Selbststudium / Nacharbeitszeit: 138 h
Gesamt: 180 h
17. Prüfungsnummer/n und -name:  
• 51181 Sustainable Architecture II (Design and Construction) (PL), schriftlich, eventuell mündlich, Gewichtung: 1.0  
• V Vorleistung (USL-V), schriftlich, eventuell mündlich

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### Modul: 51300 Urban Ecology and Ecosystem Design II (Geodesign)

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<td>8. Modulverantwortlicher:</td>
<td>Dr. Hans-Georg Schwarz-von Raumer</td>
</tr>
<tr>
<td>11. Empfohlene Voraussetzungen:</td>
<td>Passing successfully the course the student will have got • knowledge and skills with regard to useful models and GIS-techniques for sustainable design • a deep understanding of geodesign approaches and the problems related to their implementation • experiences and ideas concerning own work practices and preferred workflows</td>
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<tr>
<td>12. Lernziele:</td>
<td>Geodesign denotes a methodological field which brings together creativity and knowledge based constructiveness in a model and communication driven design process of meso-scaled planning tasks. Both technical and communicational challenges must be tackled and a lot of them still are unsolved: How to install a direct man-machine feedback loop? What are the restrictions for the designer’s degree of freedom in creativity, choice and finality? How to tackle uncertainty and ambiguity of model results? Which limits do exist with respect to tool interfaces and IT-skills expected? Do we need an optimized collaboration between designers/planners and IT-specialists/modellers? In its first part the module provides lectures which draw the basic lines and illustrate solutions of geodesign approaches. The second part consists of hands-on exercises and experiments. Our exercises apply models and broadly use Geographic Information Systems (GIS).</td>
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<td>13. Inhalt:</td>
<td>Attendance time: ca. 56 h Self study: ca. 124 h</td>
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<tr>
<td>14. Literatur:</td>
<td>• 513001 Seminar Geodesign • 513002 Exercise Geodesign Seminar</td>
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</table>
Modul: 51290 Urban Policy, Planning and Sustainable Urban Management II

2. Modulkürzel: 011221934 5. Modulduauer: 1 Semester
4. SWS: 3.0 7. Sprache: Englisch


10. Zuordnung zum Curriculum in diesem Studiengang:
   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Kairo
   → Incoming
   → Electives
   DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Kairo
   → Outgoing
   → Electives
   M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
   → Specialization Modules

11. Empfohlene Voraussetzungen:

12. Lernziele: The aim of the seminar is to approach the broad topic of sustainable urban planning with a holistic view. Issues such as settlement patterns, open space, city climate, energy, water, material flows, life cycle cost, sustainable mobility, project management, integrated planning, quality assurance, are examined and evaluated in relation using the selected pilot projects. Intense discussions of specific topics will be promoted. External speakers and experts are invited to give workshops and presentations in order to achieve the overall goal of the seminar: to study the interactions between different sustainability principles.

13. Inhalt: Our ecological footprint currently exceeds the Earth’s ability to regenerate by about 30%. Cities can take a key role in the transformation towards a more sustainable development because of immense possibilities of organising energy, waste and transportation systems more efficiently. The energy consumption per person can be reduced drastically. However, the saving of energy and resources is only one aspect among many. Another aspect is the physical and functional density of cities. It can, for instance, improve the social interaction of residents and allow municipalities to provide a large variety of social and cultural activities, which would fail in less densely populated areas simply because of the financing. The question underlying this seminar is how cities and neighborhoods need to be developed that offer residents a high quality of life, while being energy-efficient and environmentally friendly.

14. Literatur:

15. Lehrveranstaltungen und -formen: 512901 Seminar Urban Policy, Planning and Sustainable Urban Management II

16. Abschätzung Arbeitsaufwand: Attendance time: ca. 56 h
   Self study: ca. 124 h
<table>
<thead>
<tr>
<th>17. Prüfungsnummer/n und -name:</th>
<th>51291 Urban Policy, Planning and Sustainable Urban Management II (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0</th>
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</thead>
<tbody>
<tr>
<td>18. Grundlage für ...                :</td>
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<td>19. Medienform:                      :</td>
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<td>20. Angeboten von:                   :</td>
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123 Key Qualifications Related to the Subject

Zugeordnete Module:  51270  Research Methods I - Seminar 1
                        51280  Research Methods II - Seminar 2
## Modul: 51270 Research Methods I - Seminar 1

<table>
<thead>
<tr>
<th>2. Modulkürzel:</th>
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<td>3. Leistungspunkte:</td>
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<td>4. SWS:</td>
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<td>5. Moduldauer:</td>
<td>1 Semester</td>
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<td>6. Turnus:</td>
<td>jedes 2. Semester, SoSe</td>
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<td>7. Sprache:</td>
<td>Englisch</td>
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<td>9. Dozenten:</td>
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<td>10. Zuordnung zum Curriculum in diesem Studiengang:</td>
<td>DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013 → Kairo → Incoming → Key Qualifications Related to the Subject DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013 → Kairo → Outgoing → Key Qualifications Related to the Subject M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013 → Key Qualifications Related to the Subject</td>
</tr>
</tbody>
</table>
| 11. Empfohlene Voraussetzungen: | Students have gained a broad understanding of relevant theoretical concepts and technical tools in the field of integrated and sustainable design. They are able to categorize planning and design task according to various criteria, such as scale, stakeholder involvement, social and ecological impacts.

Students are capable of |
| 12. Lernziele: | Students have gained a broad understanding of relevant theoretical concepts and technical tools in the field of integrated and sustainable design. They are able to categorize planning and design task according to various criteria, such as scale, stakeholder involvement, social and ecological impacts.

Students are capable of |
| 13. Inhalt: | The module is linked and taught in parallel to the Integrated Case Study. Students will acquire theoretical, analytical and technical skills, which will support the design proposals developed in relation to a specific site. Students will study relevant best practice projects presented by external experts and practitioners and learn to interact with regional and local stakeholders. |
| 14. Literatur: | Feireiss (ed.): Architecture of Change 2: Sustainability and Humanity in the Built Environment |
| 15. Lehrveranstaltungen und -formen: | 512701 Research Methods I |
| 16. Abschätzung Arbeitsaufwand: | Attendance time: ca. 20 h

Self study: ca. 70 h |
| 17. Prüfungsnummer/n und -name: | 51272 Research Methods I - Seminar 1 (USL), schriftlich, eventuell mündlich, Gewichtung: 1.0 |
| 18. Grundlage für ... : | |
| 19. Medienform: | |
| 20. Angeboten von: | |
Modul: 51280 Research Methods II - Seminar 2

2. Modulkürzel: 011221942
5. Moduldauer: 1 Semester

3. Leistungspunkte: 3.0 LP

4. SWS: 2.0
7. Sprache: Englisch


9. Dozenten:

10. Zuordnung zum Curriculum in diesem Studiengang:
DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  ➞ Kairo
  ➞ Incoming
  ➞ Key Qualifications Related to the Subject

DoubleM.D. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  ➞ Kairo
  ➞ Outgoing
  ➞ Key Qualifications Related to the Subject

M.Sc. Integrated Urbanism and Sustainable Design (IUSD), PO 2013
  ➞ Key Qualifications Related to the Subject

11. Empfohlene Voraussetzungen:

12. Lernziele: Students have gained a broad understanding of relevant theoretical concepts and technical tools in the field of integrated and sustainable design. They are able to categorize planning and design task according to various criteria, such as scale, stakeholder involvement, social and ecological impacts.

13. Inhalt: Students are capable of

The module is linked and taught in parallel to the Integrated Case Study. Students will acquire theoretical, analytical and technical skills, which will support the design proposals developed in relation to a specific site. Students will study relevant best practice projects presented by external experts and practitioners and learn to interact with regional and local stakeholders.

14. Literatur:

15. Lehrveranstaltungen und -formen: 512801 Research Methods II

16. Abschätzung Arbeitsaufwand:
  Attendance time: ca. 20 h
  Self study: ca. 70 h

17. Prüfungsnummer/n und -name: 51281 Research Methods II - Seminar 2 (USL), schriftlich, eventuell mündlich, Gewichtung: 1.0

18. Grundlage für ...

19. Medienform:

20. Angeboten von: