Modulhandbuch

Studiengang Master of Science Integrative Technologies and Architectural Design Research

Prüfungsordnung: 2013

Wintersemester 2016/17
Stand: 11. Oktober 2016

Universität Stuttgart
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19 Auflagenmodule des Masters

100 Modules

Zugeordnete Module:

110	Project Modules
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110 Project Modules

Zugeordnete Module:
25990 Integrative Technologies and Architectural Design Research Project 1
26020 Integrative Technologies and Architectural Design Research Project 2

Modul: 25990 Integrative Technologies and Architectural Design Research Project 1

2. Modulkürzel:	011600801	5. Moduldauer:	1 Semester
3. Leistungspunkte:	15.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	10.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Achim Menges
9. Dozenten:	• Jan Knippers • Achim Menges
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Project Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have obtained the competence and related skills for the application of novel integrative technologies in architectural design and building construction.
13. Inhalt:	The modul offers students the opportunity to engage with the possibilities offered by novel integrative technologies for architecture, both for the processes of architectural design and building construction. This comprises either an architectural design project or a scientific thesis, both of which should center on a specific area of technological research.
14. Literatur:	Related Publications of the involved institutes: • Menges, A. (ed.): 2012, Material Computation - Higher Integration in Morphogenetic Design , Architectural Design Vol. 82 No. 1, Wiley, London. • Hensel, M., Menges, A. (eds.): 2008, Versatility and Vicissitude: Performance in Morpho-Ecological Design, Architectural Design Vol. 78 No. 2, Wiley, London. • Hensel, M., Menges, A., Weinstock, M. (eds.): 2006, Techniques and Technologies in Morphogenetic Design, Architectural Design, Vol. 76 No. 2, Wiley, London. • Hensel, M., Menges, A., Weinstock, M. (eds.): 2004, Emergence - Morphogenetic Design Strategies, Architectural Design, Vol. 74 No. 3, Wiley, London. • etc. Additional literature will be announced at the beginning of the course
15. Lehrveranstaltungen und -formen:	259901 Integrative Technologies and Architectural Design Research Project 1
16. Abschätzung Arbeitsaufwand:	450h (140 h Präsenzzeit, 310 h Selbststudium)
17. Prüfungsnummer/n und -name:	25991 Integrative Technologies and Architectural Design Research Project 1 (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	

20. Angeboten von:

Modul: 26020 Integrative Technologies and Architectural Design Research Project 2

2. Modulkürzel:	011300802	5. Moduldauer:	1 Semester
3. Leistungspunkte:	15.0 LP	6. Turnus:	jedes 2. Semester, SoSe
4. SWS:	10.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Jan Knippers
9. Dozenten:	• Jan Knippers • Achim Menges
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Project Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have obtained the competence and related skills for the application of novel integrative technologies in architectural design and building construction.
13. Inhalt:	The modul offers students the opportunity to engage with the possibilities offered by novel integrative technologies for architecture, both for the processes of architectural design and building construction. This comprises either an architectural design project or a scientific thesis, both of which should center on a specific area of technological research.
14. Literatur:	Related Publications of the involved institutes: • Menges, A. (ed.): 2012, Material Computation - Higher Integration in Morphogenetic Design , Architectural Design Vol. 82 No. 1, Wiley, London. • Hensel, M., Menges, A. (eds.): 2008, Versatility and Vicissitude: Performance in Morpho-Ecological Design, Architectural Design Vol. 78 No. 2, Wiley, London. • Hensel, M., Menges, A., Weinstock, M. (eds.): 2006, Techniques and Technologies in Morphogenetic Design, Architectural Design, Vol. 76 No. 2, Wiley, London. • Hensel, M., Menges, A., Weinstock, M. (eds.): 2004, Emergence - Morphogenetic Design Strategies, Architectural Design, Vol. 74 No. 3, Wiley, London. • etc. Additional literature will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	260201 Integrative Technologies and Architectural Design Research Project 1 and 2
16. Abschätzung Arbeitsaufwand:	450h (140 h to be present, 310 h autonomous studies)
17. Prüfungsnummer/n und -name:	
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

120 Master Thesis Preparation Modules

Zugeordnete Module:

49760	Integrative Technologies and Architectural Design Research - Thesis Preparation Project
49870	Thesis Preparation - Seminar Module

Modul: 49760 Integrative Technologies and Architectural Design Research - Thesis Preparation Project

2. Modulkürzel:	011300805	5. Moduldauer:	1 Semester
3. Leistungspunkte:	15.0 LP	6. Turnus:	jedes Semester
4. SWS:	10.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Jan Knippers
9. Dozenten:	• Jan Knippers • Achim Menges
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Master Thesis Preparation Modules ➞
11. Empfohlene Voraussetzungen:	Successful completion of: - 11600801: Integrative Technologies and Architectural Design Research Project 1 - 011300802: Integrative Technologies and Architectural Design Research Project 2
12. Lernziele:	Students have obtained the competence and related skills for the application of novel integrative technologies in architectural design and building construction. Based on this they are capable of identifying a relevant design research topic for their master thesis and prepare related prerequisite work.
13. Inhalt:	The modul offers students the opportunity to engage with the possibilities offered by novel integrative technologies for architecture, both for the processes of architectural design and building construction, with the particular goal of identifying a relevant design research topic for the master thesis as well as conducting related preparatory work. This comprises either an architectural design project or a scientific thesis, both of which should center on a specific area of technological research.
14. Literatur:	The instructors will compile a list of relevant literature with respect to the requirements of each specific thesis project.
15. Lehrveranstaltungen und -formen:	497601 Integrative Technologies and Architectural Design Research Project 1 and 2
16. Abschätzung Arbeitsaufwand:	450h (140 h to be present, 310 h autonomous studies)
17. Prüfungsnummer/n und -name:	49761 Integrative Technologies and Architectural Design Research - Thesis Preparation Project (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 49870 Thesis Preparation - Seminar Module

2. Modulkürzel:	011600705	5. Moduldauer:	1 Semester
3. Leistungspunkte:	3.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	2.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Achim Menges
9. Dozenten:	• Jan Knippers • Achim Menges
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Master Thesis Preparation Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	The students have acquired knowledge of the state of technology for a particular area of design research to be further investigated within the context of their individual master thesis.
13. Inhalt:	The module offers students the possibility to study a particular field of research in order to get a good understanding of the related state of technology and utilize this knowledge in the development of their master thesis.
14. Literatur:	The instructors will compile a list of relevant literature with respect to the requirements of each specific thesis project.
15. Lehrveranstaltungen und -formen:	498701 Colloquium
16. Abschätzung Arbeitsaufwand:	90 h (28 h to be present, 62 h autonomous studies)
17. Prüfungsnummer/n und -name:	49871 Thesis Preparation - Seminar Module (BSL), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

130 Seminar Modules

Zugeordnete Module:

- 49770 Computational Design
- 49780 Computational Design and Digital Fabrication
- 49790 Form Finding
- 49800 Material and Structure
- 49810 Building Systems
- 49820 Building Envelopes
- 49830 Computational Design and Simulation
- 49840 Architectural Biomimetics

Modul: 49840 Architectural Biomimetics

2. Modulkürzel:	011300605	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Jan Knippers
9. Dozenten:	• Jan Knippers • Achim Menges
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired a basic competence in handling biomimetic architectural design strategies.
13. Inhalt:	The module introduces the fundamental concepts and techniques of biomimetic architectural design strategies.
14. Literatur:	Related literature will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	498401 Seminar Architectural Biomimetics
16. Abschätzung Arbeitsaufwand:	180 h (56 h tob e present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	49841 Architectural Biomimetics (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 49820 Building Envelopes

2. Modulkürzel:	010220602	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	unregelmäßig
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Peter Seger
9. Dozenten:	• Peter Seger • Jutta Albus • Stefan Robanus
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired profound knowledge of the building envelope and its requirements, and in the design and development of complex building skins.
13. Inhalt:	The module introduces theoretical and practical knowedge (expertise) regarding materials and components, fundamental knowledge of building physics, typologies of facade construction, advanced cladding systems, adaptive systems for building envelopes, as well as systems for energy harvesting and storing. Aesthetical, constructive, and technological aspects should interact with mechanical, sustainable and ecological parameters.
14. Literatur:	• Schittich, Christian (ed): In Detail: Building Skins, 2ndEdition October 2006, Edition Detail, Birkhäuser • Herzog et al: Facade Construction Manual, Juni 2004, Edition Detail, Birkhäuser Additional literature will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	498201 Seminar Building Envelopes
16. Abschätzung Arbeitsaufwand:	180 h (56 h to be present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	Baukonstruktion, Bautechnologie und Entwerfen

Modul: 49810 Building Systems

2. Modulkürzel:	010220601	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	unregelmäßig
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Peter Seger
9. Dozenten:	• Peter Seger • Jutta Albus
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired profound knowledge of strategies and technical principles for sustainable and resource efficient building design and construction. They understand the complex interrelation between building structure, building envelope, and building technology.
13. Inhalt:	The module introduces theoretical and practical knowledge of technological principles for resource efficient building construction and offers an overview of new technologies in energy harvesting, energy storage, and energy usage. Dependencies and interrelations between building structure, building envelope, and building technologies are analysed regarding their relevance of technological and aesthetical integration into building.
14. Literatur:	• Ashby, M. F.: Materials and the Environment: Ecoinformed Material Choice. Amsterdam, Butterworth Heinemann, Elsevier, 2009 • Bauer, M., Mösle, P., Schwarz, M.: Green Building - Concepts for Sustainable Architecture. Callwey, 2007. • Habermann, K., Gonzalo, R.: Energyefficient Architecure: Principles of Planning and Construction. Birkhäuser Verlag, 2006. • Hegger, M., Fuchs, M., Stark, T., Zeumer, M.: Energy Manual - Sustainable Architecture. Edition Detail, 2007. Additional literature will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	498101 Seminar Building Systems
16. Abschätzung Arbeitsaufwand:	180 h (56 h to be present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	Baukonstruktion, Bautechnologie und Entwerfen

Modul: 49770 Computational Design

2. Modulkürzel:	011600601	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Achim Menges
9. Dozenten:	
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired a basic knowledge and competence of computational design and related design strategies.
13. Inhalt:	The module introduces the fundamental concepts and techniques of parametric, computational and generative design in architecture and provides an overview of related design strategies.
14. Literatur:	Related Publications: • Burry, M.: 2011, Scripting Cultures, John Wiley and Sons, London. • de Berg, M.et al: 2008, Computational Geometry - Algorithms and Applications, Springer • Menges, A., Ahlquist, S. (eds.): 2011, Computational Design Thinking, John Wiley and Sons, London. Additional literature will be announced at the beginning of the course
15. Lehrveranstaltungen und -formen:	497701 Seminar Computational Design
16. Abschätzung Arbeitsaufwand:	180 h (56 h to be present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	49771 Computational Design (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 49780 Computational Design and Digital Fabrication

2. Modulkürzel:	011600602	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	jedes 2. Semester, SoSe
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Achim Menges
9. Dozenten:	
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired knowledge of digital fabrication, computer aided manufacturing and computer-numerically controlled production processes in architecture and have obtained a fundamental understanding of related computational design strategies.
13. Inhalt:	The module introduces the fundamental theoretical concepts and applied knowledge of digital fabrication, computer aided manufacturing and computer-numerically controlled production processes in architecture. It also provides an understanding of the related computational design strategies.
14. Literatur:	Related Publications: • Menges, A. (ed.): 2012, Material Computation , Architectural Design Vol. 82 No. 1, Wiley, London. • Hensel, M., Menges, A. (eds.): 2008, Form Follows Performance: Zur Wechselwirkung von Material, Struktur, Umwelt, ArchPlus No. 188, ArchPlus Verlag, Aachen. • etc. Additional literature will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	497801 Seminar Computational Design and Digital Fabrication
16. Abschätzung Arbeitsaufwand:	180 h (56 h to be present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	49781 Computational Design and Digital Fabrication (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 49830 Computational Design and Simulation

2. Modulkürzel:	011600603	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Achim Menges
9. Dozenten:	
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired a profound understanding of the concepts of generative design computation and a basic knowledge of the application of Finite Element Methods and their integration in computational optimization and design processes.
13. Inhalt:	The modul introduces a more advanced understanding of the underlying theoretical concepts of generative design computation and a basic knowledge of the fundamentals of linear Finite Element Methods and related optimisation algorithms. Possible modes of integration of design computation and engineering simulation will be presented and techniques of automated form optimisation will be trained.
14. Literatur:	Related Publications: • Bathe,K.J.: Finite Element Procedures, Prentice Hall, 1996 • de Jong, K.A.: Evolutionary Computation: A Unified Approach. MIT Press, Cambridge, MA 2006 More detailed references will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	498301 Seminar Computational Design and Simulation
16. Abschätzung Arbeitsaufwand:	180 h (56 h to be present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	49831 Computational Design and Simulation (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 49790 Form Finding

2. Modulkürzel:	011300601	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Jan Knippers
9. Dozenten:	
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have a basic competence in the design and calculation of form-active and surface-active structures.
13. Inhalt:	The module covers the basics of physical and computer-based form-finding methods for lightweight structures under tension and compression. In addition, the basic principles for analysis, design and installation of such systems will be taught.
14. Literatur:	Related Publications: • Knippers, J.; Cremers, J.; Gabler, M.; Lienhard, J.: Construction Manual for Polymers and Membranes, Edition Detail. 2011 • Engel, H.: Structure Systems. Ostfildern Ruit 1999 • Otto, F. and Rasch, B.: finding form - towards an architecture oft he minimal. Stuttgart 1995 More detailed references will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	497901 Seminar Form and Structure
16. Abschätzung Arbeitsaufwand:	180 h (56 h to be present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	49791 Form Finding (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 49800 Material and Structure

2. Modulkürzel:	011300602	5. Moduldauer:	1 Semester
3. Leistungspunkte:	6.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	4.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Jan Knippers
9. Dozenten:	
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Seminar Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students will acquire basic skills for the characterisation and testing of materials.
13. Inhalt:	In the module methods of material testing are discussed in theory and practical tests are conducted. The basic categorising of mechanical, energetical and ecological properties of materials are discussed. As well as classic materials like glass, steel, wood and concrete, anisotropic composite materials and its architectural and structural possibilities are an important theme.
14. Literatur:	Related Publications: • Knippers, J.; Cremers, J.; Gabler, M.; Lienhard, J.: Construction Manual for Polymers and Membranes, Edition Detail. 2011 • Hegger, M.; Auch-Schwelk,V.; Fuchs, M.; Rosenkranz. T.: Construction Materials Manual Edition Detail. 2006 More detailed references will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	498001 Seminar Form and Structure
16. Abschätzung Arbeitsaufwand:	180 h (56 h to be present, 124 h autonomous studies)
17. Prüfungsnummer/n und -name:	49801 Material and Structure (LBP), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

140 Colloquia Modules

Zugeordnete Module:
49850 Expert Colloquium 1
49860 Expert Colloquium 2

Modul: 49850 Expert Colloquium 1

2. Modulkürzel:	011300701	5. Moduldauer:	1 Semester
3. Leistungspunkte:	3.0 LP	6. Turnus:	jedes 2. Semester, WiSe
4. SWS:	2.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Achim Menges
9. Dozenten:	
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Colloquia Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired knowledge of the possibilities offered by novel integrative technologies for architectural design and building construction in both scientific research and design practice. They are capable of discussing their own concepts and work with external experts coming from academia or practice as a base for further development.
13. Inhalt:	The modul introduces knowledge about the current state of integrative technologie in practice and research, presenting the work of experts ranging from design architects, engineering consultants to manufacturers and scientists. It offers students the possibility to discuss their own work with external experts as a base for further development.
14. Literatur:	Related literature will be announced at the beginning of the course.
15. Lehrveranstaltungen und -formen:	498501 Expert Colloquium 1
16. Abschätzung Arbeitsaufwand:	90 h (28 h to be present, 62 h autonomous studies)
17. Prüfungsnummer/n und -name:	49851 Expert Colloquium 1 (USL), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 49860 Expert Colloquium 2

2. Modulkürzel:	011600701	5. Moduldauer:	1 Semester
3. Leistungspunkte:	3.0 LP	6. Turnus:	jedes 2. Semester, SoSe
4. SWS:	2.0	7. Sprache:	Englisch

8. Modulverantwortlicher:	Univ.-Prof. Jan Knippers
9. Dozenten:	
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013 ➞ Modules -->Colloquia Modules ➞
11. Empfohlene Voraussetzungen:	
12. Lernziele:	Students have acquired knowledge of the possibilities offered by novel integrative technologies for architectural design and building construction in both scientific research and design practice. They are capable of discussing their own concepts and work with external experts coming from academia or practice as a base for further development.
13. Inhalt:	The modul introduces knowledge about the current state of integrative technologie in practice and research, presenting the work of experts ranging from design architects, engineering consultants to manufacturers and scientists. It offers students the possibility to discuss their own work with external experts as a base for further development.
14. Literatur:	Related literature will be announced at the beginning of the course
15. Lehrveranstaltungen und -formen:	498601 Expert Colloquium 2
16. Abschätzung Arbeitsaufwand:	90 h (28 h to be present, 62 h autonomous studies)
17. Prüfungsnummer/n und -name:	49861 Expert Colloquium 2 (USL), schriftlich, eventuell mündlich, Gewichtung: 1.0
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	

Modul: 80970 Master`s Thesis Integrative Technologies and Architectural Design Research

2. Modulkürzel:	011600900	5. Moduldauer:	1 Semester
3. Leistungspunkte:	30.0 LP	6. Turnus:	jedes Semester
4. SWS:	0.0	7. Sprache:	Nach Ankuendigung

8. Modulverantwortlicher:	Univ.-Prof. Achim Menges
9. Dozenten:	• Jan Knippers • Achim Menges
10. Zuordnung zum Curriculum in diesem Studiengang:	M.Sc. Integrative Technologies and Architectural Design Research, PO 2013
11. Empfohlene Voraussetzungen:	- Integrative Technologies and Architectural Design Research Project 1 or 2 - Integrative Technologies and Architectural Design Research Thesis Preparation Project
12. Lernziele:	Students have obtained design competence and related skills that prepare them for an architectural practice based on novel integrative technologies. Scientifically oriented students have aquired the knowledge necessary for further scientific studies as for example in the context of pursuing doctoral research.
13. Inhalt:	The Master Thesis consist either of an architectural design project or a scientific thesis. It comprises a profound understanding of integrative technologies in architecture and related design strategies.
14. Literatur:	The instructors will compile a list of relevant literature with respect to the requirements of each specific thesis project.
15. Lehrveranstaltungen und -formen:	
16. Abschätzung Arbeitsaufwand:	
17. Prüfungsnummer/n und -name:	
18. Grundlage für ... :	
19. Medienform:	
20. Angeboten von:	