

Master of Science in Architecture

Profile of the Study Program

The **GIU Faculty of Engineering** ensures the graduation of highly qualified architects with an internationally recognized education and provides a vibrant environment for research and teaching. A selected national and international faculty is committed to a curriculum with a broad range of modules, teaching content and research methods in architecture. Aligning with the department of Architecture of the Faculty of Engineering and Materials Science at the German University in Cairo (GUC), an excellent competence centre is to be created to support scientific, technical and economic cooperation with German and international universities, research centres, architects, specialist planners and innovation centres.

The study program **Master of Science in Architecture** contributes to the endeavour of the university's mission in providing an anchor for cooperation with German partners and partner universities abroad through research-oriented professors and contemporary study programs. Thus, opening up new opportunities for knowledge transfer and student exchange in order to make an important contribution to international cooperation between science and business. The Master program branches into the majors Built Environment and Resilient Urban Design and is oriented to include applied research on specific topics in partnership with other universities. The overall study program objectives are:

- Bring together a comprehensive education and networked thinking that make it possible to understand complex situations and analyse them to arrive at independent and individual solutions
- Promote the candidates as the bearer of future buildings and cities cultures in parallel to a specific extensive research process
- Strengthen the ability to reflect, discuss, experiment and venture new ways
- Provoke the reflection, discussion and experimentation on built environments with the possibility of interacting with areas that are indirectly related to the professional field
- Stimulate planners for thinking independently to face and dialogue with the different actors of the city about the ongoing processes and preview the future options in a resilient perspective

The **qualification goals** of the postgraduate program in Architecture are:

- Obtain professional skills to face the transforming challenges and opportunities in accordance with the UN sustainable development goals
- Enhance skills for design practice through a blending of advanced knowledge in architecture and urban design and initiating a lifelong learning process
- Develop an independent and academic attitude, demonstrated by designing their own projects and through frequent excursions, workshops and seminars
- Improve the capability of self-evaluating own works of planning, design, experimentation, and dialogue with the different actors involved
- Apply critical thinking, scientific methodology, and problem-solving research

The **teaching methodology** is based on two pillars: on the one hand, the use of transformative, grounded and reflective pedagogy and, on the other hand, a small number of participants per working group, which enhances the students' learning capacity. The maximum number per group is 25 (theory modules) and 15 (practical seminars). The teaching language is English for the entire curriculum.

With the successful completion of the study program Master of Science in Architecture all doors are open for **obtaining a protected professional title**.

The UIA accreditation foresees a 4-year fulltime academic education along with a 2-year supervised traineeship or, alternatively, a 5-year fulltime education meeting the given criteria (a-k, Art. 46). The requirements for the UIA (International Union of Architects) are fulfilled because the education matches the 5-year fulltime academic formation by meeting the required eleven criteria. The gained ECTS during an architecture-related Bachelor create together with the 90 ECTS from the Master of Science in Architecture the academic fundamentals for the registration in national/international chambers of architects.

The registration in the German Chamber of Architects foresees 240 ECTS and a minimum 4-year academic study of architecture along with a minimum of 2 years of practice experience. Therefore, the academic requirement of 240 ECTS with the successfully accomplished Master of Science in Architecture is given.

These requirements correspond to the EU wide evidence of qualification and may differ slightly in the respective countries/chamber of architects.

Structure of the Study Program

The completion of the Master of Science Architecture at the GIU Berlin in three semesters qualifies the students for professions in architecture in the broader sense of the term. Graduates are able to deal with a complex combination of cultural, social, functional, economic, and ecological requirements in their work. They can synthesize proposed solutions and development processes for the built environment, which has a significant impact on society in its representation, its physical structure, its identity, and its long-life cycle. The students apply design research and spatial analysis methods such as case studies, spatial analysis, simulation, or prototyping to research information, carry out analyses and define problems.

The duration of the **Master of Science in Architecture** Program is 1.5 year or 3 semesters. According with the European Credit Transfer and Accumulation System, the educational program corresponds with the accumulation of 30 credit points per academic semester or 90 ECTS credit points for the entire program. The 3rd semester includes the Master's thesis, which consists of a design project and a theoretical research paper of 30 ECTS.

Students can choose between the majors of:

- **Architecture**
- or
- **Building Technology and Integrated Design.**

The variety of competences and the related number of modules depends on the selected major and the different fields of study (see table): Design Studio / Working Drawings / Advanced Theory of Architecture and Urban Design / Sustainable Urban Development and Building or Renewable Energy Technologies in Buildings / Elective Seminar / Master Thesis. Some of the modules may include two or three consecutive modules.

Fields and competences of the study program	No of Modules	ECTS
<p>Design Studio DS <u>Competences in Architecture major:</u> - can apply interdisciplinary knowledge from architecture in an urban setting - develop spatial strategies for the conversion of the city, landscape and infrastructure</p> <p><u>Competences in Building Technology and Integrated Design major:</u> - in-depth engineering knowledge in the areas of: - energy efficiency - building technology, construction, building materials - digitalisation and production methods</p>	2	24
<p>Design Studio - Working Drawings <u>competences of graduates of both majors:</u> - acquired in-depth knowledge and skills in the representation of architecture in all scales - testing different drawing techniques and tools - far-reaching knowledge of using computer-aided design and planning tools is acquired - can apply digital modelling practices and use digital tools efficiently in the design</p>	2	16
<p>Advanced Theory of Architecture and Urban Design <u>competences of graduates of both majors:</u> - strong empirical and theoretical knowledge of historical and humanities knowledge of the construction industry - ability to carry out contemporary interventions to preserve and remodel the built cultural heritage with respect and precision - critically reflecting on their discipline and their role in society</p>	1	5
<p>Sustainable Urban Development and Building <u>competences in Architecture major:</u> - apply conceptual foundations for the transfer of basic knowledge from the fields of urban planning and sustainable spatial development to self-selected thematic and spatial contexts and problems - understand the concept of sustainability in an integrative way and the classical sustainability dimensions of ecology, economy, social, cultural and societal aspects - understand the basics of the contexts and contents of sustainability immediately</p> <p>Renewable Energy Technologies in Buildings <u>competences in Building Technology and Integrated Design major:</u> - acquire the engineering tools for the development and evaluation of building services engineering building services systems - the competence to professionally evaluate the influence of the energy consumption of the individual systems on a building - as well as the design, technical, process-oriented and site-specific factors</p>	1	5
<p>Elective Seminar Students can choose from a range of subjects that explore the broad spectrum of the built environment, space, the environment and aesthetics in building practice and theoretical research. This interdisciplinary and research-oriented training enables to independently develop new solutions and thus to distinguish oneself as a co-designer of future urban planning and architectural methods.</p>	2	10
<p>Master Thesis The Master Thesis qualifies students to work independently on complex architectural tasks. The already existing knowledge of facts and methods is expanded, deepened and systematised through individual focal points.</p>	1	30

Total of 90 ECTS

Curriculum

L = Lecture, E = Exercise/Tutorials (all in contact hours)

1 st Semester					
Architecture					
Code	No	Module	L	E	ECTS
ARCH	M101	Design Studio DS1- Urban Design and Landscaping	1	6	12
ARCH	M102	Design Studio DS1- Working Drawings	1	4	8
ARCH	M103	Sustainable Urban Development	1	2	5
ARCH	M100	Elective Seminar I	1	2	5
Total			4	14	30
1 st Semester					
Building Technology and Integrated Design					
Code	No	Module	L	E	ECTS
BTECH	M101	Design Studio DS1 - Architecture	1	6	12
BTECH	M102	Design Studio DS1 - Working Drawings	1	4	8
BTECH	M103	Sustainable Building	1	2	5
BTECH	M100	Elective Seminar I	1	2	5
Total			4	14	30

2nd Semester					
Architecture					
Code	No	Module	L	E	ECTS
ARCH	M201	Design Studio DS2 - International Urban Design and Landscaping Project	1	6	12
ARCH	M202	Design Studio DS2 - Working Drawings	1	4	8
ARCH	M203	Advanced Theory of Architecture and Urban Design	1	2	5
OR					
ARCH	M204	Theory of Architecture and Urban Design in Arid Zones	1	2	5
ARCH	M200	Elective Seminar II	1	2	5
Total			4	14	30
2nd Semester					
Building Technology and Integrated Design					
Code	No	Module	L	E	ECTS
BTECH	M201	Design Studio DS2 - Architecture	1	6	12
BTECH	M202	Design Studio DS2 - Working Drawings	1	4	8
BTECH	M203	Renewable Energy Technologies in Buildings	1	2	5
BTECH	M200	Elective Seminar II	1	2	5
Total			4	14	30
3rd Semester					
Code	No	Module	ECTS		
ARCH	M300	Master Thesis	30		