

SYLLABUSES FOR THE DEGREE OF MASTER OF SCIENCE IN ADVANCED ARCHITECTURAL DESIGN [MSc(AAD)]

(See also General Regulations and Regulations for Taught Postgraduate Curricula)

These syllabuses are applicable to candidates admitted to the Master of Science in Advanced Architectural Design in the 2024-25 academic year and thereafter.

1. CURRICULUM STRUCTURE

Candidates entering the *Master of Science in Advanced Architectural Design* are required to complete a total of 72 credits of courses, consisting of 54 credits of core courses and 18 credits of elective courses.

Candidates are required to follow courses of instruction and satisfy the examiners in each of the following core courses:

- MAAD6101 Design Research Studio I (12 credits)
- MAAD6102 Design Research Studio II (12 credits)
- MAAD6103 Design Research Studio III - *Capstone Experience* (12 credits)
- MAAD6201 Research-based Design: Case Studies (6 credits)
- MAAD6202 Topics in Fabrication: Techniques and Technologies (6 credits)
- MAAD6203 Topics in Contemporary Sustainability (6 credits)

In addition, candidates are also required to select and complete 18 credits of elective courses from the list of courses below. It should be noted that not all elective courses listed in the syllabuses would be offered every year and that new elective course(s) may be introduced from time to time. Candidates' selection of elective courses shall be approved by the Program Director.

- MAAD6301 Fabrication Techniques I (Traditional) (6 credits)
- MAAD6302 New Materials (6 credits)
- MAAD6303 Experiments in Making (6 credits)
- MAAD6304 New Technologies in Design (AR/VR/AI) (6 credits)
- MAAD6305 Fabrication Techniques II (Robotic and Digital) (6 credits)
- MAAD6306 Sustainable Construction (6 credits)
- MAAD6307 Topics in Urbanization (6 credits)
- MAAD6308 Creative Practice 1 (6 credits)
- MAAD6309 Creative Practice 2 (6 credits)

2. ASSESSMENT

Each of the courses is examined by continuous coursework assessment. To complete the curriculum, candidates shall satisfy all the assessments and the relevant requirements prescribed in the Regulations for the Degree of Master of Science in Advanced Architectural Design.

3. COURSE LIST

CORE COURSES

MAAD6101 Design Research Studio I (12 credits)

This course introduces the principles of research-based design and engages students with a given research project and its methodology. Students will follow the lead instructor to contribute to the overall research agenda, while formulating and developing personal research interests within the umbrella topic.

Assessment: 100% continuous coursework assessment

MAAD6102 Design Research Studio II (12 credits)

This course advances the research developed in MAAD6101 Design Research Studio I and provides opportunities for students to develop technical knowledge, experimenting with material processes, building techniques and prototyping.

Assessment: 100% continuous coursework assessment

Pre-requisite: MAAD6101 Design Research Studio I

MAAD6103 Design Research Studio III - *Capstone Experience* (12 credits)

In this course, students integrate knowledge and skill sets gained from previous design studios and begin to work collectively preparing and making a design prototype as a capstone project under the supervision of the studio instructors. Students will organize into teams to make individual and group contributions. A methodology for collaborative working will be developed and employed.

Assessment: 100% continuous coursework assessment

Pre-requisite: MAAD6102 Design Research Studio II

MAAD6201 Research-based Design: Case Studies (6 credits)

This course will introduce students to a) the various canons of research principles and methods in humanities, science and social science and b) different philosophies, ideas and methods of research-based design. Research literacy will be obtained by lectures and readings, covering basic issues of research designs (case studies, correlational, longitudinal, quasi-experimental, experimental); methods (archival, visual observational, ethnographic, survey, statistical, experimental designs etc.); measurement quality, research logic (induction, deduction, abduction). Seminar discussions will use a case study approach where students discuss successful and unsuccessful integrations of research with design and evaluate how research fits into and can shape scholarly design and how design can become a research tool. Case studies will focus on the impact of projects with particular focus on sustainability and inter-disciplinary collaborations.

Assessment: 100% continuous coursework assessment

MAAD6202 Topics in Fabrication: Techniques and Technologies (6 credits)

This course provides a comprehensive introduction to emerging design technologies and fabrication techniques. It introduces students to software and tools. The course will be conducted as a seminar and workshop, with time spent in the computer labs and the fabrication lab. The focus of the course is on the practical application of relevant software packages in conjunction with fabrication equipment for design, analysis, and making.

Assessment: 100% continuous coursework assessment

MAAD6203 Topics in Contemporary Sustainability (6 credits)

This course focuses on current research and case studies for sustainable buildings. Topics such as energy efficiency and intelligent buildings are combined with an understanding of sustainable building techniques. Working in parallel in computer modelling and physical prototyping, students study different energy systems and low environmental impact techniques.

Assessment: 100% continuous coursework assessment

ELECTIVE COURSES

MAAD6301 Fabrication Techniques I (Traditional) (6 credits)

This course explores a conceptual framework for traditional crafts and building techniques, based upon a clear understanding of materials and their inherent processes and construction technologies. Traditional building methods will be analyzed and carefully studied with emphasis on their spatial, social, cultural and environmental performance.

Assessment: 100% continuous coursework assessment

MAAD6302 New Materials (6 credits)

This course introduces students to new building materials and explores the potential of integrating material processes in design. With a combination of lectures and workshops, students gain technical knowhow in material processes and experiment with the use and application of bioplastics.

Assessment: 100% continuous coursework assessment

MAAD6303 Experiments in Making (6 credits)

This workshop-based seminar, supported by a series of lectures, will encourage students to explore procedural logics of making that expand on and revisit initial design premises from a series of physical explorations at incrementing scales, with a focus on innovation for making. The core ideology is to influence the process of architectural design in reverse; that is by synthesizing an architectural proposal from the findings emerging out of a succession of well-crafted experiments.

Assessment: 100% continuous coursework assessment

MAAD6304 New Technologies in Design (AR/VR/AI) (6 credits)

This course introduces students to contemporary AR/VR technologies and critically evaluates the experience of extending recent AR and VR tool developments towards applications centered on creative collaborative production. The course develops workflow assessed on its ability to transform a geometrically complex digitally drafted design to its final physically built form, highlighting the necessary strategic integration of variability as an opportunity to relax notions on design precision and exact control.

Assessment: 100% continuous coursework assessment

MAAD6305 Fabrication Techniques II (Robotic and Digital) (6 credits)

This course provides first-hand experience for students to engage with robotic fabrication and develop one to one design prototypes with robotic technologies. Students will engage in both subtractive and additive manufacturing processes and work on a large range of material systems, such as foam, timber and clay. Its main agenda is to explore the implications of robotics in architectural design through research and teaching.

Assessment: 100% continuous coursework assessment

MAAD6306 Sustainable Construction (6 credits)

The course on non-extractive construction focuses on the integration, circularity, reuse, material research, and community building. Through lecture, workshop and seminars, students further develop their understanding on sustainable building techniques with a focus on material supply chains, building economies, and recycled construction components, addressing the environmental crises we face with the reinvention of building and construction techniques.

Assessment: 100% continuous coursework assessment

MAAD6307 Topics in Urbanization (6 credits)

An introduction to concepts and topics in contemporary urban design and development. Special focus will be placed on Architectural Urbanism and particular focus on issues related to East Asian Urban development.

Assessment: 100% continuous coursework assessment

MAAD6308 Creative Practice 1 (6 credits)

This course will introduce visual communication practice method and theory, specifically focus on photography and film making, as a way to enquire, experiment and evaluate ideas and knowledge. The course will be conducted in lectures and workshops, to learn the skills of the media, and concluding in the assigned project to demonstrate the understanding of visual communication as a creative research method. The objective is to broaden the creative practice skills in visual communication, and to equip students with diverse research and practice ability in architecture design.

Assessment: 100% continuous coursework assessment

MAAD6309 Creative Practice 2 (6 credits)

This course will introduce artistic practice method and theory, specifically focus on performance and installation art, as a way to enquire, experiment and evaluate ideas and knowledge. The course will be conducted in lectures and workshops, to learn the skills of the media, and concluding in the assigned project to demonstrate the understanding of artistic practice as a creative research method. The objective is to broaden the creative practice skills in artistic practice, and to equip students with diverse research and practice ability in architecture design.

Assessment: 100% continuous coursework assessment

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