

# **Architecture, Graduate Master of Architecture, Professional Degree**

## **I. Mission Statement**

Graduate students are asked to pursue architecture as a critical practice. Technical, artistic, theoretical, and historical aspects of the discipline are studied in an inventive and interconnected manner, with an emphasis on developing a cogent and comprehensive body of architectural knowledge that is rooted in critical thinking. Students are expected to learn how to bring their knowledge and critical capacity to bear on the construction of buildings; the evaluation of sites, materials and assemblies; the use of technologies; the analysis of cultural issues implicit in architectural work; universal and sustainable design; and the eventual pursuit of normative or experimental professional practices.

The professional curriculum is based on a seven semester, 100 credit hour model in which students with diverse backgrounds can be commonly grounded in the requisites of a professional education. Students with a non-architectural undergraduate degree take the full course of study that is structured around a continuum of design studios, a thesis in the final year, and an array of required and elective courses. Students who enter with a four year degree in architecture are required to complete two years (60 credit hours) of study and normally are able to take a larger number of electives.

## **II. Assessment Goals, Measures, Results and Changes**

### **A. Goals: Intended learning outcomes**

#### **Design:**

The design studios are the armature of the graduate programs. Each is conceived not only as the setting for building design but also as an application of design as a process of inquiry and an opportunity for experimentation.

#### **Design communications:**

The necessities for developing diverse and effective communication skills are folded into the design studio. As an aspect of design, communication is considered as both a set of skills and as a vehicle for exploration and discovery. Beginning in the first design studios, students are encouraged to use drawing, modeling, and computer-generated images as integrated modes of design and to understand the ways in which these modes both limit and facilitate the design process.

#### **Technologies:**

Graduate students are required to take a full complement of technology courses covering materials and construction, structures, and environmental forces and systems. Electives are available in lighting, acoustics, sustainable design and green architecture, and construction methods.

#### **History and cultural studies:**

The graduate program is conceived as a collective discourse that is based on a mature understanding of culture and society. All graduate students are required to take introductory courses in history and theory that are unique to the graduate program. These courses and other

available electives shape the experimental dimension of the graduate program and, together with the studios, are the foundation for the thesis.

Practice:

Issues of practice are considered specifically in the graduate course in professional practice and upper-level studios emphasize ethics and case studies in practice.

## **B. Measures**

### **Graduate Student Evaluation Procedures**

The University admissions office evaluates the academic record of applicants to the graduate programs, including ranking among cohort graduates of the undergraduate school attended. The director of graduate education assesses remedial and prerequisite needs of admitted students and recommends appropriate courses that may or may not appear on the students Program of Study. Once a Major Professor and an Advisory Committee has been identified by the student, courses appropriate to the research agenda of the student are incorporated in the Program of Study. The Graduate College and the director of graduate education monitor student progress and advise accordingly.

Graduate student progress is monitored by the graduate college as well as by the director of graduate education and the individual student's major professor and advisory committee members once they are identified. As in the undergraduate program, evaluation of student progress is the responsibility of faculty members and grades are based on course objectives that are part of course syllabi.

### **Employment and Registration**

The department receives annual reports from the college's career services office regarding employment as well as reports on pass-rates on the National Council of Architectural Registration Board's (NCARB) professional registration examination.

## **C. Relevant Required Courses**

See table below.

## **D. Results**

### **Student Outcomes Assessment and Educator Response**

There are two primary and very effective means of student outcomes assessment and educator response that are uniquely found in studio-based and graduate education that deserve elaboration.

### **The Architectural Design Studio**

A six-credit architectural design studio is required in each semester of the program, seven in total. There are thirteen contact hours weekly and students have twenty-four hour access to their study/work space. In this setting, problem-based learning operates from the start and students are encouraged to work at the higher end of Bloom's taxonomy of inquiry throughout the studio series. Critical thinking is expected as students deal with "ill-structured" or, better described, indeterminate problems for which there are multiple plausible answers, and the student is asked to

construct and defend reasoned solutions. In the architectural design studio, they are asked to propose and ‘defend’ physical interventions in the socio-physical environment. The challenge to the student is to synthesize what we refer to as a “comprehensive” proposition - in words and constructed action. They are asked to develop formal and constructable propositions inspired and informed by a knowledge of materials, structures and environmental systems, social purposes, humanistic, and aesthetic considerations. They gain facility with a variety of design tools including drawing, modeling, and computers. They learn to integrate numerical, verbal, and visual thinking in their communications. Architectural design is not taught as a single method, but students develop individualized methods through experience with different educators and students over the course of the succession of design studios. The aim of this activity is for each student to develop a level of expertise with an individualized decision process that we call design.

*Studio Outcomes Assessment* With student/educator ratios of 6-12 to 1, frequent one-on-one conversations between students and educators take place and the design studio is where reflection in action occurs. There is daily or moment-by-moment adjustment in teaching methods by the educator in response to these conversations with students. Educators adjust the conversation to draw relations between the problem at hand and the students’ experience as well as to challenge the student to inquire at deeper or higher levels of questioning - thus enhancing learning and helping students to higher developmental levels. In addition to the studio workplace tutorial, a variety of project review settings are used including postings and presenting projects, roundtable consulting sessions, and peer review. Performance criteria are clearly spelled out in the syllabus and grading is without quota. With these conditions, students do not exhibit the protective behavior of competition, and student cohort groups report that they continue to critique each other within and beyond studio hours both when working on collaborative projects and on individual work. The studio model for project-based learning has gained recognition as an effective learning environment.

### The Major Professor and POS Advisory Committee

As is typical of graduate programs, each student identifies with a major professor who is the primary advisor and mentor for the individual thesis work. Typically two additional faculty members, with relevant expertise, join to form the POS Advisory Committee. The close working relationship between the student and these educators is an even more intense exercise in outcomes assessment as they often partner in joint inquiries into the issues and problems of the profession and the built environment. It is in this relationship that the student is initiated into the social inquiry that is central to the discipline and profession, and they participate as near equals in the conversation about indeterminate and often leading issues. For example, currently, students and educators are exploring architectural parameters from perspectives of sustainability of planetary resources and energy, environmental quality and effect on human performance, and human values and cultural change.

*Thesis Outcomes Assessment* Outcomes assessment and educator strategy changes occur through frequent one-on-one working sessions with the major professor and committee members, and periodic posting and presentation of work that is group or mutually critiqued. The nature and direction of the thesis inquiry adjusts at each of these events corresponding to the emerging knowledge about the subject matter and as the student is gradually inculturated into the values and methods of the discipline. The learning experience culminates in both the preparation and submittal of a thesis document that is assessed by university criteria and defended in the final oral examination. Ideally the latter event is a conversation in which student and educators are equals.

**Summary of Outcomes Assessment, M.Arch.**

<b>Intended Outcomes</b>	<b>Measures</b>	<b>Relevant Req. Arch Courses</b>	<b>Results<sup>1</sup></b>	<b>Changes Based Upon Results</b>
<b>1)</b> That our students develop the skills with which to critically assess and research architectural questions and to invent architectural designs to address those questions.	a. Accreditation b. Comp. project c. Thesis	698, 682 683 699 option + studios at all levels	a. Iowa exam pass rates 30-50% above Nat'l average	1. New research seminar 2. Integration of course work/faculty 3. New discussion seminars
<b>2)</b> That students develop a working method for designing and that they have the communication, graphic, modeling and computational skills to support designing and to represent their design ideas to others	a. Accreditation b. POS Committee c. Comp project d. Thesis e. Licensing examination	Studios at all levels, esp. 504, 505, 506	a. Iowa exam pass rates 30-50% above Nat'l average	1. Enriched electives in media 2. Enhanced computer facilities
<b>3)</b> That students master basic knowledge of architectural technologies that give buildings form, affect how and where they are constructed, and how are environmentally tempered	a. Accreditation b. Comp project c. Licensing examination	541, 542, 543, 641, 682, 683 + studio integration	a. Iowa exam pass rates 30-50% above Nat'l average	1. Enhanced 'design-build' studio options 2. Revised technology courses 3. Integration of course work/faculty 4. New discussion seminars
<b>4)</b> That students thoroughly understand architectural history, that they understand the theoretical and diverse cultural underpinnings of the discipline of architecture, that they are able to reference architectural precedents and know how to utilize all of these in the development of their ideas	a. Accreditation b. Comp project c. Thesis option	595, 596, 597, 682, 683 699 option + studio integration	a. Iowa exam pass rates 30-50% above Nat'l average	1. Revised history & theory courses 2. Integration of course work/faculty 3. New discussion seminars
<b>5)</b> That students have grounding in the ethical and practical aspects of the architectural profession in society	a. Accreditation b. Licensing examination	592 682, 683 + studios at all levels	a. Iowa exam pass rates 30-50% above Nat'l average	1. New discussion seminars

1. The new integrated graduate curriculum is only in it's second year of implementation.
2. Because changes in curriculum emerge over time, are evaluated and refined, changes the past five years have been included here. All are the direct result of student outcomes assessment.

**III. Assessment Processes**

Assessment of student learning and educator response take several forms in the graduate programs in architecture.

## National Oversight

The M.Arch. program is accredited by the National Architectural Accrediting Board (NAAB) that reviews an Architecture Program Report (APR) against thirty-seven performance criteria. This occurs every three to six years and includes a four-day site visit where a national panel reviews student work in terms of course objectives and national professional assessment standards.

## Professional Advisory Group

The department supports an Architecture Advisory Council (AAC) of volunteer educators and practitioners many of whom are alumni from throughout the country. The group meets three times per year to informally interact with students and faculty as well as participate in project reviews. In this way they provide an assessment of student outcomes in terms of readiness to enter professional practice. In addition, their informal discussions with departmental staff provide us with an outcomes assessment from the five to twenty-five-year-out perspective of our graduates.

## Departmental Administration

The departmental director of graduate education and the graduate committee meet bi-weekly to review courses of study and faculty assignments in order to optimize student progress. Electronic recruiting has allowed us to have extensive conversations with prospective students in order to confirm that there is a good match between their educational goals and our resources - in that way a predictor of outcomes. With modest enrollment numbers, the director of graduate education is able to maintain on-going, informal contacts with educators and students to assess outcomes and maintain positive relationships among them including the identification of POS Advisory Committee members.

## Course Evaluations

In addition to the university-mandated end-of-term quantitative summative evaluation sheets, educators are encouraged to undertake a formative assessment of the course through a directed inquiry of students regarding the learning task, strategy, and setting. We have learned that students are willing and articulate participants in these course assessments and that educators, who loath the bubble sheets and blank comment page, are pleased with the student reflections on the learning environment.

## Adult Learning

Educators who teach graduate courses in the department are encouraged to adopt principles of adult learning as outlined in Malcolm Knowles' concepts for andragogy. By this means, faculty and students work together to manage the learning process including establishing learning goals and criteria, selecting venues to explore, assessing progress, and evaluating products and learning outcomes. Most graduate students are awarded teaching assistantships that give them the opportunity to strengthen their learning experience by extending the experience to undergraduate students.

Program Review

Table of assessment processes, M.Arch.

<b>Assessment Activity</b>	<b>Period or Cycle of Activity</b>	<b>Record of Activity</b>
Selective Admission to the Professional Program	Annual	Scores are recorded and kept on file in the Advising Office
Graduate Program Committee	Meets monthly	Written minutes are kept. Key topics, particularly student performance issues and curricular changes are well covered.
In-Studio Reviews of student design work	The studio process involves regular daily and weekly contact in a critical teaching feedback pedagogy.	Many professors keep daily logs; written results are sometimes provided when students are having difficulty. These practices are irregular from a formal recording perspective.
Public Reviews of student design work	Usually 2-4 per semester for all studios	Students are often asked to keep notes or journals; professors usually keep written notes; some record results in writing at the end of public reviews. Again, these practices are irregular from a formal recording perspective.
Major Professor and POS Advisory Committee	Ongoing	Faculty team approves each student's project proposal; faculty team collectively reviews the work several times each semester. Final written report is provided.
Collective faculty End of Semester Reviews	Usually happens about once a year rather than once a semester	There is active discussion; minutes are not typically kept; notes regarding major issues that come to the fore are distributed to the Undergraduate Program Committee
Awards	Annual cycle for two dozen or so awards and scholarships	Faculty are invited to nominate students for various awards. The Advising Office tracks all grade point averages which are the basis for a number of awards. There is a published awards program.
Specialized Accreditation	Every 6 years	A report is issued that becomes a public document. There are direct actions taken to remedy problem areas noted in the report, and the faculty takes suggestions for opportunities under advisement.