



THE ILLINOIS SCHOOL OF ARCHITECTURE

COLLEGE OF FINE + APPLIED ARTS | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Concentration in High-Performance Building Design

DESCRIPTION

Courses offered by the Building Performance Program address aspects of overall performance through the integrated design of structural, environmental, enclosure, and related systems. This work is grounded in a historical knowledge base of best practices while also promoting experimentation and innovation, focusing on sustainability, environmentally responsible use of energy and materials, human comfort, and constructability.

For graduate students who wish to develop expertise in this area, the School offers a *Concentration in High-Performance Building Design* in the M.Arch. and M.S. in A.S. degree programs. This optional concentration can be completed within the normal timeframe of each degree. This is considered an informal or advisory concentration (it is not a formal concentration and therefore does not appear on students' transcripts) and is intended to provide guidance to students seeking knowledge in the design of high-performance buildings. Students who wish to complete the concentration can do so by signing up in the Graduate Office and enrolling in courses as described below. Questions may be directed to the Chair of the Building Performance Program.

REQUIREMENTS

The completion of this concentration is in addition to (and not in replacement of) any required core courses that exist or that may be established in the M.Arch. or M.S. degree programs. To attain the concentration, students must successfully complete:

- at least one semester of ARCH 573: Technology & Performance Studio taught by Building Performance Program faculty, or other studio as approved by the Building Performance Program Chair; and
- at least 12 credit hours of electives from the list below of approved courses currently offered within the Building Performance Program.

Students may choose from among the following courses in compiling 12 credit hours of electives in the concentration:

ARCH 544:	Building Systems & Design Integration (3 or 4 hrs)
ARCH 576.CLI:	Climate Design (3 hrs)
ARCH 576.CRW:	Curtain Wall Design & Construction (3 hrs)
ARCH 576.EXP:	Experimental Envelopes (3 hrs)
ARCH 576.ISH:	Innovative Solar-Powered Homes (3 hrs)
ARCH 576.PIN:	Performance and Design: Parametric Integration (3 hrs)
ARCH 576.SIM:	Simulation and Design (3 hours)
ARCH 594.BCS:	Building Energy Case Studies (3 hrs)
ARCH 594.DD:	Daylighting Design (3 hrs)
ARCH 594.GDS:	Assessment of Green Design Strategies through Simulation (3 hrs)
ARCH 594.M:	Building Mechanical Systems (3 hrs)
ARCH 594.SIM:	Building Energy Simulation (3 hrs)
ARCH 595.EQ:	Seismic Analysis and Design (3 hours)
ARCH 595.IN:	Integrated Design and Construction of Buildings (4 hrs)

Note: The course list above may be adjusted, edited, or expanded by the Building Performance Program in the future as new courses become available.

BENEFIT TO STUDENTS

The American Institute of Architects (AIA) states: “The only way for architects to build a more sustainable future is to understand how the buildings that will populate it will perform—in terms of water usage, climatic conditions, materials—and perhaps most importantly, in terms of energy.”¹ Because employers in the architecture and construction industries are increasingly and actively seeking employees with knowledge and skills in the area of building performance, it is expected that students who have studied these issues in graduate school will be valued by prospective employers and will be poised to make a greater impact on these issues earlier in their careers. The courses offered within the *Concentration in High-Performance Building Design* give students a strong foundation in the various principles, systems, and technologies that contribute to the design of high-performance buildings: energy, envelopes, materials, and design integration. In this way, we can contribute to the building of “a more sustainable future,” as posited by the AIA.

FACULTY OF THE BUILDING PERFORMANCE PROGRAM

Prof. Abbas Aminmansour, Ph.D.
Prof. Mohamed Boubekri, Ph.D.
Prof. Randy Deutsch, LEED-AP
Prof. Ralph Hammann, Ph.D.
Prof. Michael Kim, Ph.D.

Prof. Sudarshan Krishnan
Prof. Vidar Lerum, Ph.D.
Prof. Scott Murray, RA
Prof. Jeff Poss, FAIA

Prof. Rick Strand, Ph.D.
Prof. Mark Taylor
Prof. Marci Uihlein, P.E.
Prof. Yun Kyu Yi, Ph.D.

SAMPLE SCHEDULE

Below is a sample schedule for the M.Arch. degree with a *Concentration in High-Performance Building Design*.

Please note that Concentration Electives may be taken in any semester and do not need to follow this sample schedule exactly, provided that the requirements noted above are met.

Master of Architecture with a Concentration in High-Performance Building Design

Degree Total Credit Hours: 62 hours Total Core Credit Hours: 46 Total Elective Credit Hours: 16

First Semester

- ARCH 57X: Architectural Design Studio (6 hours)*
- ARCH 577: Theory of Architecture (4 hours)
- ARCH 536: Planning and Design of Structural Systems (4 hours)
- Electives or requirements for focused area of study (variable)**

Second Semester

- ARCH 57X: Architectural Design Studio (6 hours)*
- ARCH 537: Environmental Control Systems (4 hours)
- ARCH 517: Modern Architectural History and Contemporary Architecture (3 hours)
- Electives or requirements for focused area of study (variable)**

Third Semester

- ARCH 575 or 57X: Integrative Architectural Design Studio or Elective Architectural Design Studio (6 hours)*
- Electives or requirements for focused area of study (variable)**

Fourth Semester

- ARCH 575 or 57X: Integrative Architectural Design Studio or Elective Architectural Design Studio (6 hours)*
- ARCH 501: Professional Practice (3 hours)
- ARCH 538: Design and Construction Futures (4 hours)
- Electives or requirements for focused area of study (variable)**

* For this Concentration, at least one of the three required 57X studio courses must be ARCH 573: *Technology & Performance*. In addition, one semester of ARCH 575: *Integrative Architectural Design Studio* is required for all M.Arch. students.

** For this Concentration, at least 12 of the available 16 elective credit hours must be in approved Building Performance courses listed on the previous page.

¹ <http://www.aia.org/practicing/AIAB095959>