

ARCHITECTURE



ARCHITECTURE EDUCATION IN USA

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I. HISTORY

In 1814, Thomas Jefferson proposed for a professional curriculum in architecture to be introduced in the School of Mathematics of the University of Virginia. However, as an appropriate architect/mathematician could not be found, it wasn't until 1864 that formal architecture education was introduced at the Massachusetts Institute of Technology. This was followed in 1867 by the University of Illinois at Urbana and in 1871 by Cornell University. The University of Toronto and Montreal in Canada started the first schools of architecture in 1876.

Architecture education was greatly influenced by the European schools of architecture, particularly the prestigious Ecole des Beaux-Arts in Paris, France, which was used as a standard for the ultimate in architectural training. Professors from the Ecole des Beaux-Arts were brought to the United States and students were also encouraged to spend year in Paris, as did over 500 Americans between 1850 and 1968 when the Ecole closed down.

Canada did the same but also had professors from England and Scotland (not having warred with England).

The cornerstone of the Beaux-Arts system was the “design problem” and “project.”

The University of Oregon, School of Architecture, founded in 1914, was the first U.S. school to adopt the two basic elements of the “modern” movement in architecture education by affiliating with all the allied arts (painting, crafts, sculpture, etc.) rather than with engineering, and non-competitive individual approach to learning.

Columbia University made a dramatic shift in 1934 away from the French methods towards those of the modern German movement exemplified by the Bauhaus school and adopted modern concepts of mass production and modern technology which the Beaux-Arts had refused to accept. Instruction was also of practical nature.

In 1936, Harvard integrated into a single school the triangular model of many of today's schools of environmental design that of design architecture, landscape architecture and urban planning.

As architecture education developed, the curriculum beyond the art of rendering to include utilitarian subjects such as mechanical equipment and structural analysis, the standard four-year program began to expand.

The first school to adopt a five-year professional program of study in architecture was Cornell University, which did so in 1922. By 1940, almost all architecture school had a standard course of five years leading to the Bachelor of Architecture degree.

II. UNDERGRADUATE PROGRAMS

The following is a list the undergraduate degrees offered by institutions of higher education in the U.S.

A. Professional Degree (Five Years)

Bachelor of Architecture (B.Arch.)

Highly structured curriculum, nearly all begin immediately with some architecture courses. Some programs are designed in 1+2+3 fashion; the first two years mix “preprofessional” design courses with liberal arts and serve as a common base for several different environmental design disciplines (interior, landscape, graphic design) at the undergraduate level. Often the most expeditious means of obtaining a first professional degree, and in some states of obtaining a license.

B. Non-professional/Academic Degrees (Four years)

Bachelor of Science in Architecture

B.S. program includes similar introductory coursework offered by B.Arch. that examine the history of architecture, architectural design and building construction. Schools offering both program types may allow students enrolled in a B.S. program to transfer into a B.Arch. program after they complete their first two years of study. Students who remain in a B.S. program move on to study courses such as architectural computer graphics, structures and environments and take design studio classes in their remaining two years of enrollment.

Bachelor of Arts in Architecture

The BA in Architecture, for example, provides a liberal arts foundation in the discipline of architecture, which covers spatial reasoning, aesthetics, political and economic structures, socio-cultural influences, urbanism, landscape, ecology, investigating history and theory, materials and making, or sustainable technology. The BA in Architecture prepares students for graduate study in architecture and related fields such as construction management, landscape architecture, real estate, and urban planning.

Bachelor of Science in Architectural Engineering

The BS in Architectural Engineering program covers the fundamentals of engineering, with specialization in structural analysis and design, building energy and environments, building construction, and materials. The program is intended to provide competency in the structural design of resilient buildings, from high-rise office buildings to single-family homes, and from hospitals to schools. The program prepares graduates for careers with consulting engineering firms, general contractors, manufacturers, government agencies, and architecture firms. The curriculum also serves as an excellent springboard to graduate study in the areas of structural engineering, building energy and environments, construction engineering and project management, or infrastructure materials engineering.

Bachelor of Architectural Studies

This is an interdisciplinary program for students whose educational objectives cross departmental boundaries.

Bachelor of Arts in Architectural Design

The Bachelor of Arts in Architectural Design is a pre-professional degree that prepares candidates for admission with advanced standing to professional architectural programs. The BA in Architectural Design is for students who are interested in the architecture profession and who may continue their studies by earning a graduate professional degree in architecture (e.g. Master's degree in architecture, a professional degree, that takes 2 or more years to complete).

(Note on Section B: These programs vary widely with respect to emphasis, electives, requirements, and specific architecture offerings, but are common in one aspect—they cannot be professional accredited. However, they are usually preparatory for advanced architectural or other environmental design fields of study [e.g. landscape architecture, planning, interior design]. Almost without exception, a minimum of two years is required to receive the accredited Master of Architecture degree.)

In a five-year B Arch program and to a lesser extent, the four-year non-professional degrees, the primary concentration is design, in both credit hours and time. In some schools “design” may be a required course very semester. It is almost a studio course, and certain aspects of an actual or hypothetical architectural problem are emphasized. The student, either individually or as a member of a team, finishes the project with a preliminary design solution for the problem, which is graphically presented. For centuries “juries” of faculty and professionals have been used to discuss and evaluate the student solution. The design studio, ideally, is where most of the learning from other courses is applied.

A typical architecture program will recognize the importance of graphic skills, and early instruction will be given in freehand drawing and graphic delineation. Various media will be explored, including pencil, ink, and (but probably to a lesser extent than years ago) color.

Other courses would be in physics, calculus, algebra and trigonometry (usually covered in high school), and descriptive geometry. There may be an additional course on structural materials, particularly in engineering-oriented programs. The actual structures courses may be done in various sequences by reference to the type of structural element (beam, column, etc.) or the structural material itself (timber, steel, reinforced concrete).

Specialists exist for nearly every aspect of professional practice: programming, specifications, contracts, cost estimating, construction supervision, site planning, interiors, acoustics, lighting, hearing and air conditioning, and electrical and structural design, to name a few of the most common.

III. GRADUATE PROGRAMS

A. Professional Degree

Master of Architecture (Two-to-Three-Years)

Offered in three basic forms. The most prevalent form is the Master of Architecture as a first professional degree. This degree is most appropriate for students who have a four-year undergraduate degree in architecture. These programs are designed to round out the professional education of the student as well as to provide the opportunity for independent and creative exploration.

Master of Interior Architecture (One and one-half Years)

This is a professional degree (M. INT. ARCH.) and is accredited by the Council for Interior Design Accreditation. The Master of Interior Architecture program is for individuals with a minimum of a bachelor's degree who want to pursue a rigorous program of part time study that prepares them to enter the field of interior design.

B. Post-professional Degree

Master of Architecture (One-to-Two-Years)

This degree is appropriate for students who have a five-year professional B.Arch. or professional Master of Architecture degree but wish to go on the pursue further in-depth or independent study.

C. Non-professional/Academic Degrees

Master of Science in Architecture

In most instances is heavily oriented toward research and/or building technology and science.

Master of Architecture (Three-to-Four-Years)

This is for those students whose undergraduate degree was in a discipline other than architecture. Many school have three-to-four-year programs that culminate in an M Arch; other schools will admit degree holders into their two-year master's programs "with deficiencies" (ie. Preparatory undergraduate coursework must first be successfully completed). Or, persons with degrees in other fields may elect to pursue the B Arch degree.

D. Doctorate degrees

Only about a dozen programs offer a doctorate or PhD in Architecture, and in all instances, the number of candidates is small. This is usually a research degree for specialized study, e.g. architectural history building technology, or behavioral investigations.

IV. CURRENT STATE OF ARCHITECTURE DEGREE PROGRAMS

In the 2016 rankings of top architecture school programs provided by Design Intelligence, the research arm of the Design Futures Council, women now compose 44 percent of those enrolled in graduate and undergraduate programs. (In 2011, that percentage was 41 percent.)

There is, however, a growing debate about the value of architectural education as evidenced by a 20% drop in enrollment of first-year architecture students over a five-year period ending in 2013. The drop, according to Frank J. Mruk III, associate dean at NY Institute of Technology's School of Architecture and Design (WST op-ed 9/29/13) stems from the "outdated, costly and time-consuming qualification process" and suggests "developing a tiered system where architectural training will be specific to the skills and goals of the students." The executive director of the National Architectural Accrediting Board (NAAB) Andrea Rutledge, credits the decrease to generational swings in student-aged populations. In response to the WST op-ed, Marilys Nepomechie, president of the Association of Collegiate Schools of Architecture, wrote that architecture and design schools are already increasing flexibility in their programs. Students can pursue a number of different options, including working toward registration while in school. The National Council of Architectural Registration Boards (NCARB) is considering proposals from over a dozen accredited architecture schools that want to offer this option.

(Source:

<https://www.architecturalrecord.com/articles/10085-americas-top-architecture-schools-2016>)

LINKS

Cornell University, BArch (curriculum chart)

<https://aap.cornell.edu/academics/architecture/undergraduate/barch-curriculum>

California State Polytechnic University, Pomona (curriculum)

<https://www.cpp.edu/~academic-programs/academic-advising/tools/sheets-roadmaps/2016-2017/ENV.shtml>

University of Texas at Austin

<http://catalog.utexas.edu/undergraduate/engineering/degrees-and-programs/bs-architectural-engineering/>

University of Washington, BArch, BA Arch and BA Architectural Design

<http://www.washington.edu/students/genocat/academic/arch.html>

International Student Blog <https://www.internationalstudent.com/study-architecture-and-design/>

Architectural Record

<https://www.architecturalrecord.com/articles/12966-top-architecture-schools-of-2018?v=preview>