The Department of Architecture offers the following graduate degree programs for eligible students seeking advanced educational opportunities: Master of Architecture as the professional degree accredited by NAAB, Master of Science in Architecture and Doctor of Philosophy. Entry to the MArch is directly from a pre-architectural four-year degree program, or with appropriate prerequisite work (Career Change Program), from other 4-year degree backgrounds.

The Department of Architecture offers specialization certificates in Health Systems & Design, Historic Preservation, Environmental Hazard Management, Facility Management, Sustainable Urbanism and Transportation Planning. These areas of specialization are supported by qualified faculty, research centers and laboratories. Other areas of exploration in which graduate students are engaged include design, architectural computing, history and theory, energy and sustainability, housing, health and interior architecture. The program also offers two dual master's degree program in conjunction with the graduate program in Land and Property Development and Urban Planning that enables students to graduate with a Master of Architecture and Master of Land and Property Development and Master of Architecture and Master of Urban Planning upon completion of the combined 72-credit core curriculum.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Texas A&M University, Department of Architecture offers the following NAAB-accredited degree program:

MArch (pre-professional degree + 52 graduate credits)  
Next accreditation visit for all programs: 2022

Because of the important role of computing the disciplines housed within the College of Architecture, all entering students are required to possess a portable, network-ready personal computer capable of running software appropriate to their academic program. Financial aid is available to assist students in their computer purchases. No student will be denied admission to Texas A&M University based on inability to purchase a computer. Additional information is available on the college website at http://arch.tamu.edu.

Faculty

Abbott, Elton D, Associate Professor of the Practice  
Architecture  
PHD, Texas A&M University, 1983

Aitani, Koichiro, Associate Professor  
Architecture  
MARC, Virginia Polytechnic Institute and State University, 1997

Ali, Ahmed K, Associate Professor  
Architecture  
PHD, Virginia Polytechnic Institute and State University, 2012

Baltazar, Juan Carlos, Associate Professor  
Architecture  
PHD, Texas A&M University, 2006

Beltran, Liliana O, Associate Professor  
Architecture  
PHD, University of California, Berkeley, 1997

Caffey, Stephen M, Instructional Assistant Professor  
Architecture  
PHD, The University of Texas at Austin, 2008

Campagnol Abuabara, Gabriela, Lecturer  
Architecture  
PHD, University of Sao Paulo - USP, 2008

Clayton, Mark J, Professor  
Architecture  
PHD, Stanford University, 1998

Culp, Charles H, Professor  
Architecture  
PHD, Iowa State University, 1976

Deyong, Sarah J, Associate Professor  
Architecture  
PHD, Princeton University, 2008

Ermindy Castillo, Marcel, Associate Professor of the Practice  
Architecture  
PHD, Central University of Venezuela, 1987

Esquivel, Jose G, Associate Professor  
Architecture  
MA, The Ohio State University, 1998

Geva, Anat M, Professor  
Architecture  
PHD, Texas A&M University, 1995

Gibbs, Brian C, Visiting Lecturer  
Architecture  
MARC, Texas A&M University, 2006

Glowacki, Kevin T, Associate Professor  
Architecture  
PHD, Bryn Mawr College, 1991

Haberl, Jeff, Professor  
Architecture  
PHD, University of Colorado, 1986
Haliburton, James T, Lecturer
Architecture
MARC, Texas A&M University, 2014

Hamilton, Daniel K, Professor
Architecture
MS, Pepperdine University, 2003

He, Weiling, Associate Professor
Architecture
PHD, Georgia Institute of Technology, 2005

Hill, Rodney C, Professor
Architecture
MA, University of California, Berkeley, 1969

Holliday, Ray W, Assistant Professor of the Practice
Architecture
MLA, Texas A&M University, 2000
MARC, Texas A&M University, 1992

Holliday, Shelley D, Associate Professor of the Practice
Architecture
MEN, Texas A&M University, 2001

Jain, Priya, Assistant Professor
Architecture
MARC, University of Arizona, 2007

Kalantar Mehrjardi, Negar, Assistant Professor
Architecture
PHD, Virginia Polytechnic Institute and State University, 2016

Kim, Jong Bum, Assistant Lecturer
Architecture
PHD, Texas A&M University, 2014

Klein, Nancy L, Associate Professor
Architecture
PHD, Bryn Mawr College, 1991

Lu, Zhipeng, Senior Lecturer
Architecture
PHD, Texas A&M University, 2009

Maffei, Gerald L, Visiting Professor
Architecture
MARC, University of California, Berkeley, 1969

Mann, George J, Professor
Architecture
MS, Columbia University, 1962

Miranda, Valerian, Associate Professor
Architecture
PHD, Texas A&M University, 1988

Nichols, Anne B, Associate Professor of the Practice
Architecture
PHD, University of Illinois at Urbana-Champaign, 2000

Obrien, Michael J, Professor
Architecture
MARC, Virginia Polytechnic Institute and State University, 1982

Pentecost, Aubrey R, Professor of the Practice
Architecture
DPH, The University of Texas School of Public Health, 1982

Rodiek, Susan D, Associate Professor
Architecture
PHD, Cardiff University, 2004

Rogers, Julia S, Senior Lecturer
Architecture
PHD, Texas A&M University, 1996

Tabb, Phillip J, Professor
Architecture
PHD, Architectural Association Graduate School of Architecture, 1990

Vanegas, Jorge A, Professor
Architecture
PHD, Stanford University, 1988

Warden, Robert R, Professor
Architecture
MA, University of New Mexico, 1994
MARC, Texas A&M University, 1986

Wells, Ward V, Professor
Architecture
PHD, University of Oklahoma, 1976

Yan, Wei, Professor
Architecture
MA, University of California, Berkeley, 2004

Zhu, Xuemei, Associate Professor
Architecture
PHD, Texas A&M University, 2008

Masters

- Master of Architecture in Architecture (http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/architecture/architecture/march)
- Master of Science in Architecture (http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/architecture/architecture/ms)

Doctoral

- Doctor of Philosophy in Architecture (http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/architecture/architecture/phd)

Courses

ARCH 600 Introduction to Architecture and Urban Design
Credits 2. 1 Lecture Hour. 1 Lab Hour.
Introductory seminar and studio on architecture and urban design; focus on topical readings, in-class discussions and short writing exercises; provides opportunity to learn or refine hand drawing, rendering, and model building, and to learn to be productive and creative within the studio context.
Prerequisite: Graduate classification in architecture or approval of instructor.
ARCH 601 Design Fundamentals I  
Credits 6. 3 Lecture Hours. 9 Lab Hours.  
Introduction to the development of verbal (design vocabulary), graphic, research and critical thinking skills through the design of small-scale projects, and investigation of typologies and precedents as the basis for architectural design.  
Prerequisites: Graduate classification in architecture or approval of instructor; career change program, ARCH 600 and concurrent enrollment in ARCH 610.

ARCH 602 Design Fundamentals II  
Credits 6. 3 Lecture Hours. 9 Lab Hours.  
Further development of verbal, graphic, research and critical thinking skills through architectural design projects, with emphasis on basic understanding of major philosophical doctrines and their influence on architectural theory; studies of place-making, space, form and order; knowledge of world views, formal spatial manipulations and design vocabulary.  
Prerequisites: ARCH 601, ARCH 610, ARCH 612 or approval of instructor.

ARCH 603 Design Fundamentals III  
Credits 6. 3 Lecture Hours. 9 Lab Hours.  
Theory and practice of architecture; methods and techniques used in the analysis and synthesis of concepts unique to spatial enclosure; developing responses to building systems; objects in a current cultural, physical or social context; complex building programs, site development and design solutions integrating formally expressive visual ideas and functional planning.  
Prerequisite: ARCH 602.

ARCH 604 Architectural Design I  
Credits 6. 2 Lecture Hours. 12 Lab Hours.  
Application of verbal, graphic, research, critical thinking and fundamental design skills to architectural projects that emphasize design theory, systems of ordering in architecture and urban design, use of precedents, site and contextual issues; includes program development and concerns for public health, safety and welfare. Core design studio for professional degree candidates.  
Prerequisite: Graduate classification in architecture or approval of instructor.

ARCH 606 Architectural Design II  
Credits 6. 2 Lecture Hours. 12 Lab Hours.  
Application of verbal, graphic, research, critical thinking and fundamental design skills to architectural projects that emphasize the integration of structural, environmental, life safety, building envelope systems, and building service systems; includes code compliance, resource conservation, cost control and economic analysis. Core design studio for professional degree candidates.  
Prerequisite: ARCH 605.

ARCH 607 Architectural Design III  
Credits 6. 2 Lecture Hours. 12 Lab Hours.  
Application of verbal, graphic, research, critical thinking and comprehensive design skills to advanced architectural projects or design competitions that address cultural traditions, human behavior and diversity, the context of architecture, collaborative skills, ethics and professional judgement. Core design studio.  
Prerequisite: ARCH 606.

ARCH 608 Architectural Design IV  
Credits 6. 2 Lecture Hours. 12 Lab Hours.  
Individually selected design project of major architectural significance and complexity; professional documentation required; project requires approval of instructor.  
Prerequisite: ARCH 607 or equivalent.

ARCH 610 Visual Communications  
Credits 3. 2 Lecture Hours. 4 Lab Hours.  
Investigation and practice of various communication techniques used to explore, verify and present design decisions in architecture; freehand drawing principles; graphic theory and mechanical drawing techniques; architectural presentation and rendering methods in different media and their application.  
Prerequisite: Graduate classification or approval of instructor; concurrent enrollment in ARCH 601.

ARCH 612 Structural and Environmental Technology Concepts  
Credits 3. 3 Lecture Hours.  
An introductory course which is intended to quickly and broadly develop the vocabulary base, visual understanding and familiarity with technological systems that architects deal with throughout their practice.  
Prerequisites: Graduate classification or approval of instructor; MATH 142 and PHYS 201 or equivalents.

ARCH 614 Elements of Architectural Structures  
Credits 3. 2 Lecture Hours. 2 Lab Hours.  
Investigation of the structural factors that influence the development of architectural space and form; introduction of the physical principles that govern statics and strength of materials through design of timber and steel components of architectural structures.  
Prerequisite: ARCH 612 or approval of instructor.

ARCH 615 Elements of Environmental Control Systems  
Credits 3. 3 Lecture Hours.  
Theory and applications of building energy use, envelope design, shading analysis, heating and cooling systems, lighting design, building water supply plumbing and drainage systems, electrical, acoustical, fire and lightning protection, transportation systems and construction materials; design opportunities, calculations, equipment selection, and component sizing as they relate to design.  
Prerequisite: ARCH 612 or approval of instructor.

ARCH 619 Applied Solar Energy  
Credits 3. 3 Lecture Hours.  
Technology behind applied solar energy design, including: calculating solar radiation, heat transfer related to solar design; active systems; FCHART and economics.  
Prerequisite: Graduate classification or approval of instructor.

ARCH 620 Building Performance Measurement  
Credits 3. 3 Lecture Hours.  
Performance measurement strategies for buildings, including: instrumentation and sensors, data collection and data management, weather data requirements, regression or inverse data analysis methods, calibrated whole-building energy simulation, calibrated simplified HVAC system simulation; measurement and analysis of indoor environmental conditions and building water use; baseline strategies; state and federal standards; case studies of commercial building applications.  
Prerequisite: Graduate classification or approval of instructor.
ARCH 621 Energy Optimization in Building Design
Credits 3.3 Lecture Hours.
Optimum energy use strategies for commercial buildings, hourly energy simulation methods, building envelope and HVAC system energy optimization by computer simulation techniques; life-cycle cost analysis of building energy systems; case studies in commercial building applications.
Prerequisite: Graduate classification or approval of instructor.

ARCH 622 Sustainable Building Design Technology
Credits 3.3 Lecture Hours.
Fundamentals of sustainability in building, including social, political and economic issues—focusing particularly on conservation of natural resources; design and construction of earth integrated solar buildings, including cooling, heating, lighting and habitability assessments.
Prerequisite: Graduate classification or approval of instructor.

ARCH 623 Design Methods I
Credits 3.3 Lecture Hours.
Importance of intuitive methods in design; meaning, symbolism and creativity in art and architecture; techniques to develop creative approaches to problem-solving.
Prerequisite: Graduate classification or approval of instructor.

ARCH 624 Theory of Placemaking
Credits 3.3 Lecture Hours.
An introduction to and an exploration of the sources, principles, theories, and physical expressions of the phenomenon of place creation and its relationship to sustainable urbanism; investigates the origin of place theory and its meaning as expressed in the various forms, functions and scales of places applicable to architecture and planning.
Prerequisite: Graduate classification or approval of instructor.

ARCH 628 Tools for Green Building Design
Credits 3.3 Lecture Hours.
Modeling tools and techniques to explore and support sustainable design; develop a deeper understanding of the relationship between architectural design and the environmental forces of sun, wind, and light; design-centered course; helps test the students architectural designs through the use of available modeling tools.
Prerequisite: Graduate classification or approval of instructor.

ARCH 631 Applied Architectural Structures
Credits 3.3 Lecture Hours.
Structural analysis of building structural systems: components, frames, shapes; selection and economics of structural systems; survey of current structural design codes; supervision practices in structural construction.
Prerequisite: Graduate classification or approval of instructor.

ARCH 633 Applied Architectural Systems
Credits 3.3 Lecture Hours.
Building energy consumption patterns and conservation strategies; natural and mechanical subsystems for environmental control; subsystem design criteria, economic considerations and selection methods.
Prerequisite: Graduate classification or approval of instructor.

ARCH 634 Architectural Lighting
Credits 3.3 Lecture Hours.
Attributes of the lighting environment, lighting and energy issues, daylight availability, building design for daylighting, heat loss control, solar shading, daylighting models, graphical analytical and computer methods of analysis, visual and lighting comfort evaluation, integration of daylight and electric light, energy analysis.

ARCH 637 Seminar in Japanese Architecture History and Theory
Credits 3.3 Lecture Hours.
Background and exploration of traditional, modern, and contemporary Japanese architecture, including consideration of region, materials, structure and style, as well as the social and economic factors that include architectural form and contents; discussion of the works and writings and building models of case study of Japanese architects’ design.
Prerequisite: Graduate classification or approval of instructor.

ARCH 638 Architectural Theory—Renaissance Through 19th Century
Credits 3.3 Lecture Hours.
Architectural Theory—Renaissance Through 19th Century. Review of architectural theory and practice from the 15th to 19th centuries with emphasis on the classical tradition, its transformations in France and in Great Britain and Germany; aspects of this evolution.
Prerequisite: Graduate classification or approval of instructor.

ARCH 639 Twentieth Century Architecture: Theory and Practice
Credits 3.3 Lecture Hours.
Background and exploration of Modern Architecture, including consideration of region, materials, structure and style, as well as the social and economic factors that influence architectural form and content; discussion of the work and writings of 20th century architects and architectural theorists.
Prerequisite: Graduate classification or approval of instructor.

ARCH 640 Morphology of Architectural Form
Credits 3.3 Lecture Hours.
Forces influencing structure and form of architecture: climate, culture, site, economics, construction methods.
Prerequisite: Graduate classification or approval of instructor.

ARCH 643 Software Analysis for HVAC Systems in Low Energy Buildings
Credits 3.2 Lecture Hours. 3 Lab Hours.
Energy analysis (using Energy Plus software) with an emphasis on developing strategies for low energy use; simulation of various heating and cooling systems in low energy buildings; analysis of the mechanical equipment (including air handling systems, chiller and boilers), the building envelope, energy management control systems and indoor air quality.
Prerequisite: Graduate classification or approval of instructor.

ARCH 644 Seminar in Art and Architectural History
Credits 3.3 Lecture Hours.
Advanced topics in art and architectural history emphasizing methods of analysis and development of theory, including case studies from both western and non-western traditions; topics vary each semester.
Prerequisite: Graduate classification or approval of instructor.

ARCH 646 Historic Preservation Theory and Practice
Credits 3.3 Lecture Hours.
History of the preservation movement in the U.S. Architectural and regulatory techniques employed in building preservation; case study of selected examples.
Prerequisite: Graduate classification or approval of instructor.

ARCH 647 Recording Historic Buildings
Credits 5.2 Lecture Hours. 9 Lab Hours.
Techniques for recording historic buildings; measuring and drawing to Historic American Building Survey Standards; field experience in photography, field notes and record drawing preparation.
Prerequisites: Graduate classification or approval of instructor.
ARCH 648 Building Preservation Technology  
Credits 3. 3 Lecture Hours.  
Preservation technology related to the diagnosis and treatment of defects in buildings; case studies of significant historic structures. Field study may be required for which departmental fees may be assessed to cover costs.  
**Prerequisite:** ARCH 646 or approval of instructor.

ARCH 649 Advanced History of Building Technology  
Credits 3. 3 Lecture Hours.  
Readings and discussion of current topics in history of building technology; development of understanding the importance of materials of construction to the creation of historical forms of sacred architecture across faith and around the world.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 650 Building Information Modeling in Architecture  
Credits 3. 3 Lecture Hours.  
Building Information Modeling (BIM); principles, methods and applications in the building lifecycle with a focus on the design process; includes computer-aided design, parametric modeling, databases, web technologies, design performance simulation and visualization.  
**Prerequisites:** Graduate classification or approval of instructor.

ARCH 655 Parametric Modeling in Design  
Credits 3. 3 Lecture Hours.  
Parametric modeling principles, methods and applications in environmental design and research; architectural geometry at basic and advanced levels; parametric equations and models; visual programming method; scripting method; constraints, rules and algorithms; elements and patterns of parametric design; parametric simulation; modeling tools.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 656 Advanced Professional Practice and Ethics  
Credits 3. 3 Lecture Hours.  
Issues and relationships within the business, legal and political environment; legal forms of practice; office organization, personnel practices, policies and management; expanded services; economics of practice, profit planning and accounting; client selection; standard form agreements with consultants and for specialized services, risk management.  
**Prerequisites:** Graduate classification or approval of instructor.

ARCH 660 Design Programming  
Credits 3. 3 Lecture Hours.  
Study of successful programming approaches to meet user needs in design projects; history and definition of programming, programming techniques, documentation and case studies; applications to buildings, landscape projects and urban design.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 663 Interior Architecture  
Credits 3. 3 Lecture Hours.  
Theory and application of design processes incorporating programming, space planning, analysis and communication of interior requirements for various building types with emphasis on spatial organization, selection of components and materials to satisfy user needs; emphasis on design of the workplace as the synthesis of human factors, organizational theory, systems technology and communication.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 664 Urban Design for Architects  
Credits 3. 3 Lecture Hours.  
Investigation of the creative role in architectural ideas in the design process and their manifestation in successful urban design; identification and evaluation of urban design examples that are at the leading edge of architectural practice and anticipate the future; consideration of neighboring, local, regional levels, social and economic factors that influence urban form and fabric; discussion of the works and writings and the case study of livable urban design.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 669 Foundations of Research in Architecture  
Credits 3. 3 Lecture Hours.  
Introduction to the research process and its application to problems in architecture; survey of current literature on research design methods relevant to diverse architectural problems; qualitative and quantitative research strategies and techniques; communicating research results. May be taken two times for credit.  
**Prerequisites:** Graduate classification; concurrent enrollment in ARCH 681 and ARCH 690.

ARCH 673/LAND 632 Design for Active Living  
Credits 3. 3 Lecture Hours.  
Understanding the forms and characteristics of the built environment and the influence on human behaviors, lifestyles and health; theoretical and empirical insights into the issues of physical activity, obesity and automobile dependency; focus on how changes in the built environment help address these issues.  
**Prerequisite:** Graduate classification or approval of instructor.  
**Cross Listing:** LAND 632/PLAN 632.

ARCH 674 Typologies of Contemporary Hospital Design  
Credits 3. 3 Lecture Hours.  
Introduction to the contemporary planning of hospitals; comparisons of hospital design by contemporary practitioners; best practice models, repetitive patterns, and innovative designs.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 675 Health Design and Research  
Credits 3. 3 Lecture Hours.  
Examination of health environments to include buildings, healthcare gardens and restorative landscapes, and urban design for home-based care and independent living; emphasis on research-informed approaches for patient-centered design that reduce stress and promote improved health outcomes.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 676 Survey of Human Behavior and Design  
Credits 3. 3 Lecture Hours.  
Examination of human behavior and attitudes that influence spatial decision making; includes sections on environment and behavior, real estate finance, urban design decision making.  
**Prerequisite:** Graduate classification or approval of instructor.

ARCH 678 Foundations of Healthcare Design  
Credits 3. 3 Lecture Hours.  
Introduction to the theory of healthcare design over the course of time; exploration of the relationship of the medicine, science, art, and culture of each period with the design of buildings and environments for healthcare; emphasis on historic periods and the contemporary.  
**Prerequisite:** Graduate classification or approval of instructor.
ARCH 681 Seminar
Credit 1. 1 Lecture Hour.
Discussion and review of current practice in architecture and environmental design.
Prerequisite: Graduate classification or approval of instructor.

ARCH 684 Professional Internship
Credits 1 to 8. 1 to 8 Other Hours.
Professional practice under approved arrangement with public or private agencies or in residence to complement academic coursework and to provide the basis for, and allow the preparation of, an appropriate report.
Prerequisite: Graduate classification or approval of instructor and department head.

ARCH 685 Directed Studies
Credits 1 to 6. 1 to 6 Other Hours.
Individual problems involving application of theory and practice in design and construction of buildings and groups of buildings.
Prerequisite: Graduate classification or approval of instructor and department head.

ARCH 689 Special Topics in...
Credits 1 to 6. 1 to 6 Lecture Hours. 0 to 4 Lab Hours.
Selected topics in an identified field of architecture. May be repeated for credit.
Prerequisite: Graduate classification or approval of instructor or department head.

ARCH 690 Research Ideologies for Architecture
Credits 3. 3 Lecture Hours.
Design of research in architecture; evaluation of research methodologies from current research literature.
Prerequisite: Graduate classification or approval of instructor and department head.

ARCH 691 Research
Credits 1 to 23. 1 to 23 Other Hours.
Research for and preparation of dissertation.
Prerequisite: Graduate classification or approval of instructor and department head.

ARCH 693 Professional Study
Credits 1 to 23. 1 to 23 Other Hours.
Application of verbal, graphic, research and critical thinking skills to an approved, individually selected architectural issue or design project that will advance the broad understanding of architecture and its impact on people. The terminal requirement for the Master of Architecture degree. May be taken more than once but not more than 6 hours used toward a degree.
Prerequisites: ARCH 605, ARCH 606, ARCH 607; proposal approval.