

Texas A&M University

Texas A&M University, the oldest public institution of higher learning in the state, opened its doors in 1876 as a small rural college with a student enrollment of six. Today, Texas A&M houses more than 44,000 students—the fourth largest enrollment in the nation—including 7,300 graduate students and 2,495 faculty. Every state and more than 100 foreign countries are represented in the coeducational student body. Ever expanding, Texas A&M also operates the Santa Chiara Study Center in Castiglion Fiorentino, Italy.

A world leader in teaching and research, Texas A&M currently ranks sixth in the nation in the enrollment of National Merit Scholars. Texas A&M's national and international stature was highlighted by the November 1997 grand opening of the George Bush Presidential Library and Museum, a complex which also houses the Center for Presidential Studies and the Bush School of Government and Public Service as integral parts.

Texas A&M holds an endowment of nearly \$3.7 billion, reflecting its commitment to world class faculty and facilities. Texas A&M is also one of a select few universities in the nation to hold land grant, sea grant, and space grant designations. It is the only university in the nation to be ranked among the top 10 schools in total enrollment, research funding, endowment and enrollment of National Merit Scholars.

Texas A&M's success in accomplishing its trifold mission of teaching, research, and service is clearly reflected in the education of its students. Over the past

10 years, the student body has witnessed a substantial growth in minority enrollment, with African American and Hispanic students now accounting for approximately 11 percent of the student body. Once an all-male military institution, Texas A&M has a student population comprised of 47 percent women.

The College of Architecture is one of nine colleges at Texas A&M. The others are: Agriculture and Life Sciences; Lowry Mays College and Graduate School of Business; Education; Dwight Look College of Engineering; Geosciences; Liberal Arts; Science; and Veterinary Medicine. The University has one of the largest enrollments in the country in Architecture, Business, Engineering, and Veterinary Medicine. Texas A&M currently offers 139 areas of study at the undergraduate level, 148 at the master's level, 96 at the doctoral level, and professional degrees: doctor of veterinary medicine

Accomplished faculty are the bedrock of any great university, and Texas A&M students have the opportunity to interact with many great minds—from Nobel Laureates and Pulitzer Prize winners to Presidential Faculty Fellows. Research efforts in all fields resulted in expenditures totaling \$402.2 million in 1999, more than any other university in Texas and among the top ten universities nationally. At current volumes, research at Texas A&M has increased the state's budget by more than \$1 billion per year. Far more significant, however, is the indirect impact that Texas A&M has in furthering knowledge and technologies that create new business, jobs, and revenue for the State of Texas.



College of Architecture

The first formal architectural education program in the State of Texas began in the Agricultural and Mechanical College of Texas, 1 September 1905, under the auspices of the Engineering Department. The College of Architecture officially separated from engineering in 1963, the same year that Texas A&M received university status.

Today the College of Architecture, with approximately 1,800 students, is one of the largest of its kind in the United States, offering a complete spectrum of programs in the design, planning, construction, and development professions. The three departments in the College—Architecture, Landscape Architecture and Urban Planning, and Construction Science—are each fully accredited. The College is distinctive in that it offers a truly interdisciplinary curriculum, recognizing that no single professional track or narrow specialization can adequately prepare tomorrow's building and planning professionals.

The disciplines within the College, though quite diverse, have one predominant commonality: They are all about the transformation of the human environment. The creativity and sensitivity in which each discipline is practiced determines to a large extent the quality of life in our society. In order to maximize society's benefits, students in the College are challenged to weave aesthetics, safety, function, financial feasibility, and environmental responsibility into the creative process.

The College of Architecture is part of a university community that values excellence in teaching. To that end, the College ensures that students are well-

prepared by course work that includes both the basic fundamentals as well as the more innovative concepts, spawned by research and scholarly debate. The College also belongs to the professional communities of architecture, landscape architecture, urban planning, and construction science, generating knowledge and insight significant to the professional practices and producing a long line of qualified aspirants for the jobs of tomorrow.

J. Thomas Regan is dean of the College. Other administrative officers include Ward V. Wells, executive associate dean; Vivian L. Paul, Ph.D., associate dean for international programs; Rodney C. Hill, AIA, associate dean for student services; James Baker, director of computing and information services; and Larry Zuber, director of development. The Department heads in the College are Thomas L. McKittrick, FAIA, Interim, Architecture; George O. Rogers, Ph.D., Landscape Architecture and Urban Planning; and James C. Smith, Ph.D., Construction Science.



Research Centers

Research Organization

Research within the College is organized through the College Research Council (CRC), whose mission is "to develop broad-based, interdisciplinary cultures in the College which encourage the creation, dissemination and application of knowledge in the planning, design and construction of built and virtual environments." The College Research Council guides and oversees the research programs within the College and provides advice to the Dean and Executive Committee on matters of policy related to research. Additional information about the CRC, including all policies, procedures and programs, is available on the College web site.

Research Activities

A distinctive feature of the College is its commitment to improving the knowledge base of the design and planning professions. The College of Architecture has one of the most active research programs in the country. Awards of externally funded research at the College typically amount to about \$4-5 million per year. The diversity of the College is represented in the wide range of research undertaken by faculty. Research activity in the College is carried out through formally organized research centers and laboratories.

Center for Health Systems and Design

The Center for Health Systems and Design (CHSD) was created by the Colleges of Architecture and Medicine to promote research, innovation, and communication in an interdisciplinary

program that focuses on health facility planning and design. Research interests of faculty associates range from the effects of stress on patients' health and well-being, to the design of healing environments for neonatal patients, children, the elderly, the colonias, and AIDS patients. Director: Dr. Roger S. Ulrich; Associate Director: Dr. Mardelle Shepley.

Center for Housing and Urban Development

The Center for Housing and Urban Development (CHUD) is a research and outreach center dedicated toward improving the quality of life of Texas residents. Major programs in CHUD include the Colonias Program, which is designed to assist residents of low income settlements; Target Cities, which annually selects a city in Texas to receive assistance from graduate students; the Community Planning & Design Program, in which faculty and students work with a community or region within Texas; and the Economic Development & Heritage Marketing Program, which is also directed toward a community or region within Texas. Director: Kermit Black; Director of Research: Dr. Marlynn May.

CRS Center

The CRS Center for Leadership and Management in the Design and Construction Industry was founded by CRSS and Texas A&M University to advance the study of leadership and management in the design and construction industry. The Center contains the business archives, oral history, and architectural and publications libraries of the architecture and engineering firm

of CRS. The Center also manages the Rowlett Lecture Series, sponsors the annual CRS Archive Scholar Award, conducts research in leadership and management, and administers the graduate certificate program in facility management. Current research interests include the impact of information technology on facility management. Director: Dr. Robert Johnson; Associate Director: Dr. Mark Clayton.

Hazard Reduction and Recovery Center (HRRC)

The Hazard Reduction and Recovery Center (HRRC) is one of only two United Nations Office for the Coordination of Humanitarian Affairs Collaborative Centers in the world, and supports other international agencies such as the International Atomic Energy Agency and the Organization of American States. HRRC also is the only university-based institution in the United States to perform statewide hurricane hazard analysis and evacuation planning. HRRC staff support the state Emergency Operations Center by conducting real-time emergency assessments and briefing the Emergency Management Council and the Governor when a hurricane threatens the Texas coast. Director: Dr. Michael Lindell.

Laboratories

The Daylighting Laboratory

The Daylighting Laboratory contains a dome-shaped sky simulator capable of reproducing the various types of clear and overcast sky conditions. Using a "sun machine," researchers are able to calculate a building's potential light patterns, glare, shadows, window shading, and passive solar heating from prototypical models. Director Jeff Haberl.

Environmental Psychophysiology Laboratory

The Environmental Psychophysiology Laboratory measures human physiological responses to computer-simulated visual stimuli. Researchers in the Environmental Psychophysiology Laboratory study the effects of the natural and built environments on perception, cognition, emotion and behavior, seeking a probable linkage to health and well-being. Director: Dr. Louis Tassinary; Assistant Director: Byoung-Suk Kweon.

Historic Resources Imaging Laboratory

The Historic Resources Imaging Laboratory (HRIL) developed from a cross-disciplinary historic preservation teaching mission. The graduate level Certificate in Historic Preservation has a university-wide base. The HRIL trains students, professionals and others in the use and application of traditional and digital documentation processes relative to historic and cultural resources; develops new

techniques for archival documentation, analysis, visualization and interpretation; and applies imaging techniques to the study of historic resources. Director: Professor David Woodcock.

Visualization Laboratory

The Visualization Laboratory supports the research activities of the Visualization Sciences graduate program as well as other related research activities of the college. Activities of the laboratory are centered around the digital computer as a tool for visual communication. Areas of research include 3D modeling, animation, image synthesis, visual effects, visual communication, digital photography and videography, and visualization software. The laboratory houses numerous SGI and NT visual workstations, sophisticated visual software, video production facilities, and specialized devices for data capture, interaction, and image input and output. Director: Fred Parke, <http://www-viz.tamu.edu>.



Certificate Programs

The Certificate in Health Systems and Design

A key function of the Center for Health Systems and Design is to support graduate student education and research opportunities that lead to the Certificate in Health Systems and Design. Approved in July 1998, the program is available to students in any graduate degree program in the College of Architecture. The certificate emphasizes a cross-disciplinary perspective yet also ensures that students develop in-depth understanding and ability with a specific body of knowledge. In the 1999-2000 academic year, seven students enrolled in either the Master of Architecture or Master of Landscape Architecture programs were awarded Certificates in Health Systems and Design upon completion of their degrees. Approximately 15 additional graduate students were affiliated with the CHSD, including seven Ph.D. students from the Departments of Architecture and Landscape Architecture and Urban Planning. Certificate Committee Chair: Roger S. Ulrich

The Certificate in Historic Preservation

The Certificate in Historic Preservation provides students in any graduate degree program in the College of Architecture at Texas A&M University an opportunity to develop a body of knowledge in historic preservation that will further their career goals. Based on a series of graduate courses already being taught in architecture, landscape architecture, and urban planning, the program incorporates preservation-content courses in Anthropology,

Recreation Parks, and Cultural Geography, that are taken as part of the professional and research degrees in the college. The certificate program is designed to ensure that students gain a sense of mutual respect for others in the field, and appropriate awareness, understanding, and ability within a specific body of knowledge. Certificate Committee Chair: David G. Woodcock

The Environmental Hazard Management Certificate

Environmental Hazard Management (EHM) is an interdisciplinary program that has been designed to provide students with an understanding of the interrelationship between the built environment and extreme events in the natural environment. The EHM Program consists of a series of courses that are open to students from any graduate degree program at Texas A&M University. Courses in the EHM Certificate program are taught by faculty fellows of HRRC in the colleges of Architecture, Engineering, Geosciences, and Liberal Arts. The core courses provide a basic understanding of the entire range of issues related to environmental hazards. Specifically, these courses address basic theory, empirical research, and practical application related to both natural and technological hazards. The courses also address the implications of disaster research for policy formulation and implementation at the household, organizational, community, regional, state, federal, and international levels. Certificate Committee Chair: Michael K. Lindell

The Certificate in Facility Management

The interdisciplinary nature of the Facility Management Certificate allows any student admitted to a graduate degree program offered in the College of Architecture the opportunity to add another dimension to their knowledge of buildings, providing them with another possible career option. The certificate curriculum is designed to ensure that students gain knowledge in areas that will prepare them to plan and manage the operations, maintenance and construction activities in facilities throughout the world. Through the certificate, a wide variety of course work is offered, integrating the principles of business administration, architecture and the behavioral and engineering sciences. The certificate is actively supported by industry through the Facility Management Industry Advisory Council. Certificate Committee Chair: Robert E. Johnson

Other Resources

Langford Architecture Center

The Langford Architecture Center, located in the northeast quadrant of the campus, is named in honor of Ernest Langford, a gifted teacher and head of the Department of Architecture from 1929 to 1956. The center includes a four-story facility containing design studios, classrooms, and faculty and administrative offices (Building A); a research-shop building (Building B); and a classroom and studio facility (Building C).

The Gallery, an exhibit room located on the first floor of Building A, is available for students and faculty in the college to showcase work of aesthetic quality and originality.

Computer Facilities

Texas A&M University and the College of Architecture offer as rich a computing environment as can be found anywhere. From a top of the line Supercomputing Facility to individual workstations in the College labs, the student can find the resources to accomplish whatever their vision might require. The hardware supported by the Supercomputing Facility includes a 32 processor SGI Origin 2000, a 24 processor SGI Power Challenge 10000 XL, a 16 processor Cray J90, a 2.5TB EMASS mass storage system hosted on a 4-processor Challenge L, and some SGI workstations. The University maintains 7 computing labs scattered across the campus and open to all students. The largest, the Student Computing Center houses over 600 workstations and is open 24 hours a day, seven days a week.

Additionally, within the College of Architecture there are another 4 student labs for students of the College to use.

All of these labs provide an environment rich in software, and hardware needed to input, process and output text, images, data, video, etc. The college replaces the lab equipment on a 3 to 4 year rotation, and maintains the software versions replacing older ones as new versions become available. The software includes image processing, graphics, CAD, GIS, 3-D visualization, and many others. If you can imagine it, you will have the processing power to compute it at A&M.

The College is also home to the Visualization Laboratory which houses numerous UNIX based workstations, SGI, Sun, PC and Macintosh workstations. Students in the Viz program produce graphic animations and video productions and have won numerous national and international awards for their innovative work. Graduates of the program are sought by all major animation studios.

The Media Center makes still and video cameras available for check out to students to use in their projects. Output devices include black and white and photographic quality color printers, as well as video, CD burners and large format color printers. The rich computational environment in the College of Architecture insures that graduates will be ready for the challenges of tomorrow's professional environments where visualization, 3-D modeling and telecommunications will play a dominant role.

The Technical Reference Center (TRC)

A specialized architecture library, the Technical Reference Center (TRC) contains collections that cover a wide range of subject areas that support college programs and initiatives. The TRC collection includes approximately 13,000 books and reports, 100 current periodicals, bound periodicals, indexes, plans, maps, catalogs, newsletters, bulletins, video tapes, college catalogs and publications, dissertations, theses, and over 147,000 slides. The TRC has a rare collection of 1500 architectural and design books that are available for in-library use.

International Opportunities

The College of Architecture offers a diverse array of international opportunities for those graduate students who wish to study abroad. Graduate students may work as graduate assistants for the various international undergraduate programs in the College. With the permission of his or her advisory committee, a graduate student from any department within the College may take courses offered in these programs. A student also may take advantage of summer programs that are offered in Australia, Greece and Turkey, France, Italy, Spain, Mexico and Guatemala.

The Department of Architecture offers graduate travel fellowships for independent international study. The Edward J. Romieniec Graduate Traveling Fellowship provides one or two \$7,000 stipends for a semester of travel and study in Japan, China, Southeast Asia, India or Russia for a graduate student studying architecture. The James E. Deininger Traveling Fellowship permits a student to travel abroad on a predetermined architectural study program of his or her own design. Graduate students may also apply for small stipends from the Page Fund to support presentations at international conferences.

There are also various exchange and two-degree programs available with such universities as Queensland University of Technology in Brisbane, Australia; the National University of Singapore; the Monterrey and Estado Mexico campuses of the Instituto Tecnológico y de Estudios Superiores de Monterrey; and the Instituto Tecnológico Autónoma de Mexico and

Universidad La Salle, both in Mexico City. The College also has formal and informal agreements with other universities that would facilitate graduate study in South and Central America, Egypt and Japan.

Research centers and laboratories in the College are often involved in international activities. Opportunities to conduct research overseas are frequently offered by the Hazard Reduction and Recovery Center, which has performed disaster research in Taiwan, Mexico, Puerto Rico, Jamaica and the West Indies, and by the Historic Resources Imaging Laboratory, which has undertaken projects in southern France. Opportunities to work in Japan, Sweden and China are also possible through faculty affiliated with the Center for Health Systems and Design.

Students also have the opportunity to perform fieldwork or research in foreign countries to pursue learning in relation to their thesis or dissertation. The student may register for research hours or independent studies and may either seek departmental support or apply for one of the many scholarships offered through the Study Abroad Office.

An International Education Fee (IEF), which is part of the fees paid each semester by students, makes a number of additional study abroad scholarships available to graduate students through the University's Study Abroad Office. Ninety percent of the fee provides competitive scholarships for U.S. students to study abroad, and ten percent provides competitive student

scholarships and study grants for international students to study abroad.

For more information about international study opportunities, contact the Associate Dean for International Programs in Room A202 of the Langford Architecture Center (979-845-1221) or the Study Abroad Office at 161 Bizzell Hall West (979-845-0544).

Departments

Architecture

Thomas L. McKittrick, FAIA,
Head

The Department of Architecture offers undergraduate instruction to students interested in professional futures in architecture and related fields. At the graduate level, students supplement their core curriculum with emphasis in such areas as architectural computing, architectural design, architectural history and theory, energy optimization, health care architecture, health and environmental systems, historic preservation, facility management and visualization sciences. There are four graduate degree programs within the Architecture Department: the Master of Architecture; the Master of Science in Architecture; the Master of Science in Visualization Sciences; and the Doctor of Philosophy in Architecture.

Landscape Architecture and Urban Planning

George O. Rogers, Ph.D., Head

The Department of Landscape Architecture and Urban Planning currently offers four graduate degrees: the Master of Landscape Architecture; the Master of Urban Planning; the Master of Science in Land Development; and the Doctor of Philosophy in Urban and Regional Science. Areas of focus within the department include: environmental planning, land use and growth management, environmental hazards, health systems, sustainability, historic preservation, transportation and community development.

Construction Science

James C. Smith, D.Eng., P.E.,
Head

The Department of Construction Science provides students interested in entering the construction industry with the expertise necessary for managing the entire construction process. At the graduate level, the department offers the Master of Science in Construction Management degree, and works in cooperation with the Department of Architecture and the Department of Landscape and Urban Planning to offer the Doctor of Philosophy degree. Graduates are heavily recruited by corporations within the construction industry, but may also pursue careers in development or facilities management. Many students, especially graduates from the doctoral program, go into research organizations or academia.

Department of Architecture

The mission of the Department of Architecture is to develop and disseminate knowledge about architecture, a mission that is in keeping with the traditional concept of teaching, research, and service in a land grant university. The department endeavors to nurture and expand synergistic relationships among the faculty, the college, the university, and the profession by perpetuating a climate where scholarship and creativity can flourish.

There is a clear recognition of the relative importance of goals at all levels of academic activity, including the broad educational experience offered in the baccalaureate curriculum, the professional preparation and focused exploration in the professional master's degree, and the rigorous search for knowledge in the M.S. and Ph. D. programs.

In the professional program the faculty believe in a cohesive educational program, with the design studio serving as the major component in the analysis and synthesis of ideas, techniques, and technologies. Committed to developing process and philosophy as well as product, the department endorses a rigorous and disciplined approach, encouraging individual exploration based on well-defined objectives and standards of evaluation.

Finally, the department maintains and promotes an enthusiasm about architecture that is transmitted to its students, members of the college and university community, the profession, and to society at large.

Graduate Degree Programs

The Department of Architecture offers the following graduate degree programs for eligible students seeking advanced educational opportunities:

- Master of Architecture as a first professional degree
- Career Change Program
- Master of Science in Architecture
- Master of Science in Visualization Sciences
- Doctor of Philosophy in Architecture

Converging related qualifications and interests of faculty members and the support of research centers and physical facilities, the Department of Architecture, the college, and the university create opportunities to expand knowledge in an identified area of emphasis within the degree programs.



Master of Architecture

Recipients of a four-year pre-professional architectural degree may apply for admission directly into this program. The degree, which requires 52 credit hours for completion, includes a core of professional course work complemented by elective studies in one of several areas of specialization or exploration topics.

The architecture program at Texas A&M University adopted the "4+2" pattern in 1969, with the first professional degree given at the graduate level. The Master of Architecture degree program is intended to provide its graduates with the requisite educational background to enter the professional practice of architecture and its numerous variants and/or to prepare them for further graduate studies. The Master of Architecture degree is accredited by the National Architectural Accrediting Board (NAAB), qualifying its recipients to take a state

professional licensing examination after a required internship period.

Core Courses

The central thrust of the core curriculum is the design of buildings to satisfy the stated needs of the individual and society, a focus that is related both to contemporary practice and to the requirements established for the legal use of the title "architect." Integral with the core curriculum are an examination of the processes of design; systems of construction; relationships to the environmental, social, historical, and geographical context; and an understanding of the behavior and use of symbols in architecture. In all of these areas, the graduate program builds on the foundation of courses taken at the undergraduate level.

Master of Architecture Curriculum

Core Courses

ARCH 605	Architectural Design I	6 hours
ARCH 606	Architectural Design II	6 hours
ARCH 631	Structural Systems	3 hours
ARCH 633	Environmental Control Systems	3 hours
ARCH 657	Professional Practice	3 hours
	An approved architectural history course	3 hours
		24 hours

Specialization Courses

ARCH 607	Architectural Design III	6 hours
	Specialization Electives	9 hours
	Free Electives	6 hours
ARCH 685	Final Study Proposal	1 hours
ARCH 693	Final Study	6 hours
		28 hours

Total Course Work *52 hours*

Specialization

The balance of 28 credit hours of course work permits the student to structure a program of study related to an established specialization area or a unique exploration topic that has faculty support.

During the first semester of study, the student will, with advice from the faculty, select an advisory committee and develop a degree plan. Based on

this plan, which may include the international opportunities listed on page 6, the student should identify course work that clearly leads to the development of skills and the acquiring of knowledge that will prepare him or her for the final study.

The student and committee should be aware of the importance of the broader educational opportunities available in the university, and include breadth as well as depth in the total preparation

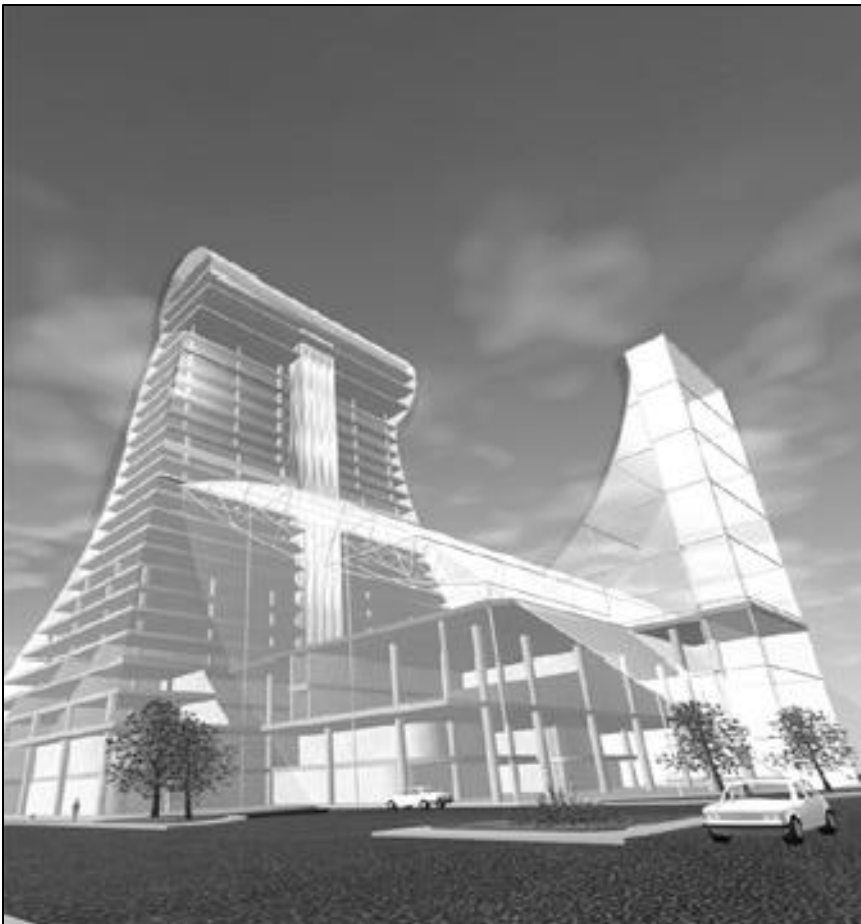
for the Master of Architecture degree. A minimum of 12 credit hours beyond the core, including a final study, must be taken in the Department of Architecture, and a minimum of 6 credit hours should be taken outside of the Department of Architecture.

Admissions

All applicants for admission into the Master of Architecture program must hold a four-year pre-professional architectural degree or its equivalent and, in addition to fulfilling the entrance requirements of the university, must submit a portfolio to the Department of Architecture for review by the admissions committee. The portfolio must include:

- A comprehensive goals statement of 300-500 words;
- A one- or two-page resume listing background information such as education, honors and awards, work experience, and relevant interests; and
- Documentation of a minimum of six projects from the design studio sequence, at least four having a strong building design content. In addition to photos of final project drawings and models, the documentation of each project must include a process description including the course title, program statement, and design goals and objectives. Photos of preliminary sketches and models are encouraged. If the project was performed by a team, the individual's role and work should be identified.

In general, the university application deadlines should be observed, however students wishing to be considered for financial assistance should submit all application materials to the university



and department by **15 January** for admission in the fall. **Applications for spring admission are not accepted.**

Faculty evaluation of each applicant's portfolio is a major element in the admission process. The portfolio must be concise in style, and bound as a single unit (8 1/2 X 11" preferred). If appropriate, additional supporting materials utilizing electronic media may be submitted. The portfolio will be reviewed by the Department of Architecture's Master of Architecture program admissions committee. High quality reproductions must be used for drawings; slides are unacceptable. The portfolio must demonstrate abilities and skills in the following:

- Architectural theory and design
- Analytical and programmatic methods
- Freehand drawing as a design tool
- Orthographic, axonometric, and perspective drawings
- Technical knowledge in drawings
- Computer aided design technology
- English language verbal and writing skills.
- Evidence of knowledge in the humanities and sciences.

Applicants must include postage (stamps or international coupons) sufficient for the return of their portfolios, or arrange to pick them up at the department. Portfolios remaining in the department more than six months after the review will be discarded.

All inquiries to the Master of Architecture program should be directed to:

*Guillermo Vasquez de Velasco, Ph.D.
M. Arch. Coordinator
Department of Architecture
College of Architecture
Texas A&M University
College Station, Texas 77843-3137
(979) 845-5134
vasquez@taz.tamu.edu*



Career Change Program

Recipients of any bachelor's degree, other than a pre-professional architectural degree, may apply for admission to the Career Change program, intended to supplement the general education acquired earlier with the professional education for architecture. The program is a structured, 44-credit hour leveling sequence, comprising courses in design and visual communication, construction and structural systems, environmental control systems, and architectural history. Upon successful completion of the program, the student may proceed with the 52-credit hour Master of Architecture degree program. Completion of both programs normally takes three calendar years.

The Career Change program enables students who hold degrees in fields other than architecture to enter the Master of Architecture program. The basic curriculum is an intensive 4-term sequence (summer, fall, spring, and summer) consisting of the courses listed on the following page, however it may be adjusted to suit the needs of each student based on the background area of the first degree.

Students who have completed the Career Change program with a minimum GPA of 3.0 and who have submitted a portfolio for review by the admissions committee, will be considered for continuation into the 52-credit hour Master of Architecture program. (Some students might be required to perform additional prerequisite work before entering the professional program.)

Admissions

In addition to fulfilling the entrance requirements to the university, all

applicants for admission into the Career Change program should submit a comprehensive goals statement. A portfolio displaying creative abilities and/or interest in architecture is optional and may include:

- Reproductions of the applicant's drawings, artwork, or other examples of ability in graphic expression;
- Articles, essays, or papers prepared by the applicant on design or environmental topics; and
- Illustrations from the applicant's work experience in architecture or related fields.

In general, the university application deadlines should be observed, however students wishing to be considered for financial assistance should submit all application materials to the university and department by **15 January**. All students who are accepted are expected to enter the program with sufficient preparation in math and physics (basic college-level).

All inquiries to the Career Change program should be directed to:

*Guillermo Vasquez de Velasco, Ph.D.
M. Arch. Coordinator
Department of Architecture
College of Architecture
Texas A&M University
College Station, Texas 77843-3137
(979) 845-5134
vasquez@taz.tamu.edu*

Career Change Program

Summer (second term)

ARCH 689	Introduction to Architecture and Urban Design	5 hours
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Fall

ARCH 601	Design Fundamentals I	6 hours
ARCH 610	Visual Communications	3 hours
ARCH 612	Structural and Environmental Technology Concepts	3 hours
ENDS 149	Survey of Architectural History I	3 hours

15 hours

Spring

ARCH 602	Design Fundamentals II	6 hours
ARCH 614	Elements of Architectural Structures	3 hours
ARCH 615	Elements of Environmental Control Systems	3 hours
ENDS 150	Survey of Architectural History II	3 hours

15 hours

Summer (10 week term)

ARCH 405	Architectural Design IV	6 hours
ARCH 449	History of Modern Architecture	3 hours

9 hours

Total Course Work *44 hours*

Master of Science in Architecture

The Master of Science in Architecture is an advanced, multidisciplinary, 32-credit hour thesis degree program designed to provide highly qualified students with a traditional academic foundation in theoretical concepts and research methods. In this program, students develop support courses and a thesis topic in an emphasis area offered by the department or research centers associated with the college. Students normally outline a specific pattern of study with their graduate advisory committee.

The Master of Science, a 32-credit hour thesis program administered through the Department of Architecture, has been in existence since 1991, evolving from a post-professional degree offering. A non-professional degree at the master's level for those seeking advanced knowledge in preparation for careers in architectural research, university teaching, or specialized practice and consulting, the degree may also act as a milestone toward a Ph.D. in architecture.

The student can focus his or her studies within the emphasis areas and exploration topics formally identified by the Department of Architecture. Applicants are invited to inquire about topics outside of those areas, providing they can identify a core of available faculty and support resources, and submit a clearly defined plan of study.

Curriculum

The Master of Science degree requires the completion of a minimum of 32 credit hours as outlined by the course work listed to the right. Students who lack proficiencies appropriate to their chosen area of study may require course work beyond the basic 32 hours.

Specific deficiencies will be identified by the degree coordinator, the advisory committee chair, and/or the advisory committee.

The degree coordinator, together with the student, will locate a faculty member with expertise in the chosen focus area to chair the student's

advisory committee. The student and the committee chair will locate two or more graduate faculty members to join the committee. The role of the advisory committee is to provide guidance, advice, and critical judgment for the student in matters of degree planning, research methods, and the thesis.

Master of Science in Architecture

Core Courses

CARC 601	Foundation of Research	3 hours
CARC 689	Research Communications	3 hours
		7 hours

Pattern of Study Courses

ELECTIVES	Major area of emphasis	10 hours
ELECTIVES	Minor or supporting area of study	6 hours
ELECTIVES	Free	3 hours
		19 hours

Thesis

ARCH 685	Thesis Proposal Preparations	1 hour
ARCH 691	Thesis Research	6 hours
		7 hours

<i>Total Course Work</i>	<i>32 hours</i>
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Admissions

Applicants to the Master of Science in Architecture program should be persons who, as a result of their academic and professional experiences, have well-defined plans for advanced development in research, education, or practice. Students will be expected to enter the program with a specific plan for a thesis topic, as well as avenues for its implementation. Students will be expected to determine, to a large extent, their own courses of study in accordance with their chosen areas of specialization.

Admission to the Master of Science in Architecture program is offered to those students possessing professional degrees in architecture as well as to those possessing degrees in related disciplines. Applicants must meet general university standards. Persons in other fields who have the qualifications to undertake studies in this program will be considered on an individual basis. These persons may be admitted conditionally and may be required to take additional course work. Admission is also dependent upon the availability of appropriate faculty in emphasis areas identified by applicants. In addition to meeting these requirements, the applicant must also:

- Provide evidence of qualifications for study in the proposed field of emphasis;
- Provide a clear statement of purpose and outline of the proposed study program; and
- Submit to an on-site interview, if deemed appropriate.

In general, the university application deadlines should be observed, however, students wishing to be considered for financial assistance should submit all application materials to the university and department by **15 January** for summer or fall and **15 August** for spring.

All inquiries to the Master of Science in Architecture program should be directed to:

*Frances Downing, Ph. D.
M.S. in Architecture Coordinator
Department of Architecture
Texas A&M University
College Station, Texas 77843-3137
(979) 845-1015*



Master of Science in Visualization Sciences

This 48-credit hour thesis program offers students the unique opportunity to develop the technical, artistic, cognitive, and computer science skills necessary to successfully communicate ideas and information using digital and electronic media.

The development of high technology information, imaging, and media systems has fostered a modern renaissance in visualization. During the European Renaissance, many great painters were not only artists, but also scientists, architects, and engineers. Today's visualizers need skills spanning these traditional disciplines as well as several new ones, such as computer science, video technology, and psychology. The range of skills is so broad that no one person can truly master them all—the solitary genius has been replaced by the collaborative team. Strong participants on such teams have both expertise in a specialty area and the broad background necessary for effective collaboration with other team members.

The Master of Science in Visualization Sciences program helps students develop the focused expertise and broad foundation knowledge needed in the burgeoning field of digital and electronic visualization. The program's core curriculum is designed to give all students a basic grasp of the artistic, scientific, cognitive, and technical foundations of the discipline. Beyond this broad training, the program requires students to develop a strong focus area of advanced expertise, and to complete a research project and thesis in this area.

The program centers around the digital

computer as a primary tool for visualization, with strong offerings in animation, modeling and simulation, image generation and manipulation, and supporting technology. Opportunities for thesis work range across a broad spectrum, from multidisciplinary themes, to those that would fall more directly into such fields as computer science, computer animation, cinematography, art and design, and psychology.

Curriculum

The Master of Science in Visualization Sciences is a 48-credit hour thesis program, outlined by the course work on the next page.

Because the field of visualization is multidisciplinary, it is not unusual for admitted students to lack the necessary scientific, artistic, and technical background to enter directly into the core courses. Foundation courses are offered as a route into that part of the core curriculum where the student is lacking. They are to be taken only as directed by the student's advisor, and in no case may be taken for more than 8 credit hours. Students with deficiencies outside of those addressed by the foundation courses will not be admitted into the program.

Students from a wide variety of backgrounds are invited to apply. Those wishing to enhance their chances for admission or who would like to avoid the need for taking foundation courses, should consider the following guidelines for preparation outside of their major field:

- mathematics — two semesters of calculus and one semester of linear

algebra;

- computer science — through data structures; and
- art and design — two semesters of drawing (or illustration), 2-D design, color, and photography.

The student will be assigned an academic advisor upon admission to the program. The advisor will provide initial direction to the student and help with the choice of courses during the first year of study. During the first year, the student will locate a faculty member with expertise in the student's chosen focus area to chair the student's advisory committee. The student and the committee chair will locate two or more graduate faculty members to join the committee. The role of the advisory committee is to provide guidance, advice, and critical judgment for the student in matters pertaining to degree planning, research methods, and the thesis. The advisory committee should be formed, and the degree plan approved, by the end of the third full semester of study. Students not fulfilling this requirement may be blocked from further enrollment in courses.

Master of Science in Visualization Sciences

Foundation Courses

for students with limited background in art:

VIZA 611	Concepts of Visual Communication I	4 hours
VIZA 612	Concepts of Visual Communication II	4 hours

for students with limited background in computer science:

VIZA 652	Computing for Visualization I	4 hours
VIZA 653	Computing for Visualization II	4 hours

0 - 8 hours

Core Courses

VIZA 613	3-D Modeling and Animation	4 hours
VIZA 622	Design Communication I	3 hours
VIZA 643	Video/Photography	4 hours
VIZA 654	The Digital Image	3 hours
VIZA 656	Visualization Systems	4 hours
CARC 601	Foundations of Research	3 hours

21 hours

Electives

ELECTIVES	Supporting student's major area of focus	11 hours
ELECTIVES	Free	0 - 8 hours

11 - 19 hours

Thesis

VIZA 691	Thesis Research	8 hours
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8 hours

Total Course Work

48 hours

Admissions

Applicants to the Master of Science in Visualization Sciences program should be persons who meet the university admission standards and who, as a result of their academic, professional, and other experiences, have demonstrated a high degree of proficiency in a field related to electronic visualization. Although the program favors students with outstanding ability in one such field, evidence of proclivity in more than one area will greatly strengthen an application.

Students must possess a baccalaureate degree in a field related to their intended course of study. Example majors include, but are not limited to, arts-related fields such as fine art, design, and architecture; technical fields such as computer science or electrical engineering; or a variety of other fields such as psychology and communication. The deadline for completed applications for fall admission is **15 January** of the year in which admission is desired. **Applications for spring admission are not accepted.** In addition to the normal application materials required by the university, students must submit the following materials:

- Resume of academic and/or professional experience;
- A 300-500 word "Statement of Intent," outlining the student's goals for graduate study;
- A brief autobiographical statement (one page) detailing the development of the candidate's interest in electronic visualization; and
- Either or both of the following:

- 1). A portfolio of visual design work in 2-D or 3-D media (work should be presented on 35 mm slides or VHS videotape); and
- 2). A portfolio of computer work. (This should include a hard copy of code, with a 10-page limit. Running applications with a graphical orientation are most helpful; include source code and instructions with submission. We can accommodate most Macintosh, PC, or Unix applications.)

All inquiries to the Master of Science in Visualization Sciences program should be directed to:

*Donald H. House, Ph.D.,
M. S. in Visualization Sciences
Coordinator
Department of Architecture
College of Architecture
Texas A&M University
College Station, Texas 77843-3137
(979) 845-3465*



Doctor of Philosophy

The program leading to the Doctor of Philosophy enables students of exceptional ability to undertake advanced study and original research in one of the emphasis areas or exploration topics. Students entering this program must complete 64 credit hours beyond a master's degree, including an original research dissertation.

The doctoral program in architecture at Texas A&M University began in the late 1960s, and has been administered by the Department of Architecture in its present form since 1985. Originally, the primary focus of the program was to expand knowledge and research capacity in the technological and building science areas. Although its earlier emphasis was technically oriented, the program has been expanded to allow students to focus their studies within a broad range of emphasis areas and exploration topics formally identified by the department. Applicants are invited to inquire about topics outside of those emphasis areas, providing they can identify a core of available faculty and support resources, and submit a clearly defined plan of study.

Curriculum

The Doctor of Philosophy degree requires a minimum of 64 credit hours beyond the master's degree or 96 credit hours beyond the bachelor's degree. Approximately two years of course work and an original research dissertation on a subject approved by the candidate's advisory committee are also required. Credit distribution and required examinations in the program are as listed below. In addition to completing the basic program, each Ph.D. student must demonstrate proficiencies appropriate to the chosen area of study that may require additional course work. Additional courses may include technical writing, language, or courses in other areas of deficiency identified by the graduate committee, the student's initial advisor, and the advisory committee.

In order to enter candidacy, the student must demonstrate to the graduate and advisory committees that he or she has exhibited academic and professional competence to accomplish the dissertation research and that the proposed

Doctor of Philosophy

Core Course Work	Qualifying exam set by department committee	12 hours
Pattern of Study Course Work	Preliminary exam set by advisory committee	30 hours
Research Proposal	Defense arranged by advisory committee	22 hours
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<i>Total Course Work</i>		<i>64 hours</i>

dissertation is academically sound and professionally pertinent. Although acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit credible literary workmanship.

The Students

The program typically has 40 students in residence each year (an additional 5 are not in residence). Although student course work is usually taken in residence at Texas A&M University, some course work may be taken at another university when approved.

Students have come from all over the United States, as well as such countries as Algeria, Australia, China, Columbia, India, Iran, Iraq, Israel, Korea, and Saudi Arabia. Approximately 65% of the students are from foreign countries.

Graduates from the Ph.D. program have accepted positions of responsibility throughout the world in many different disciplines. The majority of our alumni have assumed such positions as consultants, university faculty, and researchers, while others have started their own practices or are working for government agencies.

Admissions

Applicants to the Ph.D. program should be persons who, as a result of their academic and professional experiences, have well-defined plans for advanced development in research, education, or practice. Students will be expected to enter the program with specific plans for a dissertation topic, and avenues identified for its implementation. Students will be expected to determine

Doctor of Philosophy

Core Courses

ARCH 690	Research Ideologies	3 hours
CARC 601	Foundations of Research	3 hours
Inquiry:	A more specific, detailed methods course in keeping with independent research direction. This course may be taken outside the College of Architecture. Examples of courses are: CARC 602, GEOG 671, HIST 630, PHIL 645, PSYC 673, SOCI 624, ANTH 650, etc.	3 hours
Interpretation:	Tailored to the student's specific research needs: quantitative, qualitative, critical, or philosophical, as appropriate to the emphasis area chosen. These courses may be taken outside the college.	3 hours
		12 hours

Pattern of Study Courses

Major area of emphasis		18 hours
Minor or supporting	A student must identify, with the assistance of his/her areas of study: advisory committee, additional course work that supports his/her independent research direction. These courses should demonstrate a thematic connection with the major emphasis area.	10 hours
ARCH 681	Doctoral Seminar	2 hours
		30 hours

Dissertation Program

ARCH 691 or equivalent	See stipulations under degree plan in Graduate Catalog	6 - 9 hours (per semester)
Total Dissertation		22 hours

Total Course Work 64 hours

to a large extent their own courses of study in accordance with their chosen program.

Admission to the doctoral program in architecture is offered to those possessing professional degrees in architecture and those possessing masters' degrees in related disciplines. Applicants must meet general university admission standards. Persons from other disciplines who have the qualifications to undertake doctoral studies will be considered on an individual basis. These persons may be admitted conditionally and may be required to take additional course work at the graduate level. Admission is also dependent upon the availability of appropriate faculty in emphasis areas identified by applicants. In addition to meeting these requirements the applicant must also:

- Provide evidence of qualifications for study in the proposed field of emphasis;
- Provide a clear statement of purpose and outline of the proposed study program; and
- Participate in an on-site interview, if deemed appropriate.

In general, the university application deadlines should be observed. Students wishing to be considered for financial assistance, however, should submit all application materials to the university and department by **15 January** for summer or fall enrollment and **15 August** for spring.

All inquiries to the Doctor of Philosophy degree program in architecture should be directed to:

*Mardelle Shepley, Ph. D.,
Ph.D. Coordinator
Department of Architecture
College of Architecture
Texas A&M University
College Station, Texas 77843-3137
(979) 845-1015
mardelle@archone.tamu.edu*



Patterns of Study

(for Master of Architecture, Master of Science in Architecture, and Doctor of Philosophy)

The field of architecture synthesizes ecological, technological, social, behavioral, and aesthetic contexts and constraints into healthy sustainable human and natural environments. The graduate program provides an opportunity to examine the past, equip for the present, and prepare for future challenges in architecture.

Through substantial course offerings, faculty expertise, an extensive library collection, and up-to-date computer and electronic tools, the department is exceptionally qualified to support directed or independent study in design and research programs in:

- Architectural Computing
- Architectural History and Theory
- Energy/Lighting/Sustainability
- Environment and Behavior
- Housing
- Health Systems and Design
- Historic Preservation
- Facility Management
- Hazards Reduction and Recovery

A student may follow a particular pattern of study or an approved focus of his or her own design that is consistent with what the department is able to support.

Graduate studies in architecture are complemented by programs in other departments in the college offering courses in the fields of construction science, landscape architecture, land development, and urban and regional planning, and supported by College of Architecture research centers.

Courses listed under each area are indicative of the character of that area of study and are not meant to indicate a specific curriculum or to be a complete listing of courses available.

Architectural Computing

Computing is integral to all patterns of study, however the architectural computing pattern offers courses, independent study, and research opportunities in areas of computing particularly relevant to architectural education and practice. Topics of study include: visual/performance simulation for analysis and synthesis, architectural information management, multi-media and interface design, knowledge bases and decision support systems, theoretical topics in automating design, and production processes. This pattern of study draws extensively on faculty, courses, and facilities both within and outside the college. Close contact is maintained with professional societies, manufacturers, and developers.

Courses include:

- ARCH 642 - Data Processing in Environmental Design
- ARCH 643 - Software Development for Building Design
- COSC 640 - Introduction to Construction Visualization
- CPSC 610 - Hypertext/Hypermedia Systems
- CPSC 625 - Artificial Intelligence
- CPSC 671 - Computer-human Interaction
- EDTC 651 - Computer-assisted Instruction
- VIZA 652 - Computing Environments
- VIZA 658 - Experimental Visual Techniques

Architectural Design

The architectural design pattern permits the student to investigate design topics ranging from specific building types to contemporary social/architectural issues. Design is emphasized as professional career preparation for the individual who intends to become either a design specialist or a general practitioner. Focus is on a wide range of methodologies used to develop a cohesive process and philosophy as well as product, with the design studio being the major component in the analysis and synthesis of ideals, techniques, and technologies. Integral with this thrust is an examination of the process of design, systems of construction, relationships to the environment, historical theory, urban design, and human behavior. Students are encouraged to integrate course work from other patterns of study and other disciplines offered in the university.

Courses include:

- ARCH 607 - Architectural Design III
- ARCH 623 - Design Methods I
- ARCH 638 - Architectural Theory (Renaissance through 19th cent.)
- ARCH 639 - Contemporary Architecture
- ARCH 640 - Morphology of Architectural Form

Energy / Lighting / Sustainability

The Energy Optimization and Health and Environmental System patterns offer courses, independent study, and research opportunities in sustainable architectural design, passive and active solar systems, energy analysis, simulation, optimization and management,

lighting and daylighting, ventilation, acoustics, and life cycle systems analysis. Students use computer graphic and non-graphic tools to study, research, and design resource-conserving buildings and interior environmental systems. Close liaison is maintained with national research centers and professional societies.

Courses include:

- ARCH 421 - Energy Conservation in Residential Architecture
- ARCH 422 - Energy and Architecture Design
- ARCH 621 - Energy Optimization in Building Design
- ARCH 633 - Environmental Control Systems
- ARCH 634 - Architectural Lighting
- ARCH 635 - Architectural Acoustics
- ARCH 642 - Data Processing in Environmental Design
- ARCH 643 - Software Development for Building Design

Architectural History and Theory

The history and theory pattern is intended to produce specialists who can work as closely with design professionals as with those in the humanities, studying the history of architecture as a reflection of the culture for which it is created. This pattern provides an understanding and inquiry into the historical, technological, and theoretical contexts upon which architectural design decisions are based.

Courses include:

- ARCH 429 - Early Architecture of Texas
- ARCH 430 - History of Ancient Architecture
- ARCH 434 - The Role of Sculpture and Painting in Ancient Architecture



- ARCH 437 - Great Medieval Cathedrals
- ARCH 439 - History of Medieval Architecture
- ARCH 440 - History of Renaissance Architecture
- ARCH 449 - History of Modern Architecture
- ARCH 638 - Theory of Architecture
- ARCH 639 - Contemporary Architecture
- ARCH 640 - Morphology of Architecture Form

Historic Preservation

A 15 credit hour certificate program

The historic preservation pattern develops knowledge and skills required to address issues relating to the restoration, rehabilitation, and adaptive use of existing buildings. It responds to the national concern for the proper conservation and effective use of our built resources. Interdisciplinary in nature, it draws on a faculty proficient in architecture, construction science, history, and planning, with supporting course work in such disciplines as anthropology, archaeology, geography, and recreation and parks. Courses include:

- ARCH 646 - Historic Building Preservation
- ARCH 647 - Recording Historic Buildings
- ARCH 648 - Preservation Technology for Buildings
- PLAN 650 - Preservation Law
- LAND 660 - Preservation Planning for Historical Landscapes

Health Systems and Design

A 15 credit hour certificate program

The intent of the health care architecture pattern is to develop an understanding of the broad and changing relationships between architecture, the environment, and health-related

facilities. Focusing on the concept of health care systems, students consider how the dimensions of social public health, and medical, economic, and political change affect the delivery of health care services and the design of supporting facilities.

Project topics include full services medical facilities, retirement care for the elderly, and mobile health care units for developing countries, as well as the human behavioral responses to recovery environments.

Courses include:

- ARCH 676 - Survey of Human Behavior and Design
- PLAN 630 - Survey of Health Planning Processes
- PLAN 631 - Planning and Programming Health Systems
- PLAN 632 - Applied Regional Health Planning
- PLAN 636 - Housing and the Elderly
- HLTH 631 - Community and Public Health
- VAPH 632 - Public Health Concepts

Note: *Certificate programs require the completion of 15 credit hours of prescribed courses. New certificate programs in Facility Management and Hazards Reduction and Recovery are being developed.*

Admissions

Graduate students in the College of Architecture are admitted to one of the college's three departments to pursue study in a graduate degree program. These programs are usually accessible by admission into a single department. In some cases an intercollegiate faculty oversees the programs, allowing access through several departments. Each department has a graduate coordinator who can provide information about specific programs within that department.

A student's program of graduate study usually consists of a combination of course work, independent study, and scholarly research resulting in a report, record of study, master's thesis, or doctoral dissertation. In some programs, students may be required to participate in an internship or some other professional activity to satisfy particular degree requirements. Some departments require student participation in teaching as part of their degree program.

The overall objective of graduate study is to provide students with the intellectual depth, breadth, and appropriate training necessary to pursue productive careers in the respective professions or the fields of teaching and research. Such a curriculum allows the student to make a larger contribution to society than would be otherwise possible.

General Information

A formal application is required of all persons seeking admission or readmission to graduate studies. Requests for application forms and inquiries regarding admission may be obtained by writing the Office of Admissions and

Records. Information about enrollment procedures for students from other countries is incorporated into a pamphlet entitled "Information for Prospective International Students," available from the Office of Admissions and Records at the following address:

Office of Admissions and Records
Texas A&M University
College Station, Texas 77843-0100

An application fee is required of all students who are applying or reapplying to graduate studies. The fee for U.S. citizens may be waived *only* in exceptional cases for low-income applicants. In such cases, the applicant should include with the application for admission a letter from his or her financial aid officer or other knowledgeable officer verifying the need for a waiver. Waiver of the international application fee is not available.

Admission to graduate studies normally remains valid for one year from the date of acceptance. An extension may be granted if requested by the applicant in writing.

Departmental admission requirements in addition to those of the Office of Graduate Studies are listed with the designated degree program. In such cases, higher departmental requirements supersede those of the Office of Graduate Studies.

The normal requirement for admission to graduate studies is a scholastic record which, over at least the last two years of full-time academic study in a degree program, gives evidence of the applicant's ability to perform successful graduate level work.

An applicant whose academic record is not satisfactory, or who is changing fields of study, may be required to take prerequisite work in preparation for graduate study. Such work will normally be arranged in conference with the graduate advisor or the head of the student's major department. Before accepting a student for graduate study, a department may require that the student pass a comprehensive examination covering the basic undergraduate work in that field.

To allow time for processing, application forms from U.S. citizens should be filed at least six weeks prior to the opening of the semester. International students must submit an application by **1 March** for the fall semester; **1 August** for the spring semester; and **1 November** for the summer semester. Some programs accept applicants for admission only in the fall semester. Applications will not be processed by the Admissions Office until the application fee and all requested credentials have been received.

Admission to graduate studies may not be approved in instances where the facilities and staff available in the particular field are not adequate to take care of the needs of the student.

Regular

To be admitted to graduate studies an applicant must:

- Hold a four-year baccalaureate degree from a college or university of recognized standing (i.e., a degree recognized as equivalent to a baccalaureate degree awarded in the U.S.);

- Show promise of ability to satisfactorily pursue advanced study and research;
- Have had adequate preparation to enter graduate study in the field chosen; and
- Submit with the application acceptable scores on the general test of the Graduate Record Examination (GRE), except as follows: students applying for the MSLD program may take either the GRE or GMAT; and with the approval of the department concerned, master's degree recipients from Texas A&M University who were unanimously recommended for doctoral study by their master's degree advisory committee will not be required to retake the GRE or GMAT where used. Approximately six weeks are required for scores to be received by the Office of Graduate Studies after the tests are administered. Scores made on the GRE or GMAT more than five calendar years prior to application for admission to graduate studies normally may not be used to satisfy admission requirements.

The GRE and GMAT are offered at various centers throughout the United States, including Texas A&M University, as well as in foreign countries. To determine the most convenient locations to take either the GRE or GMAT, prospective applicants should write to either the appropriate division of the Education Testing Service, Princeton, New Jersey, or to Measurement and Research Services, Texas A&M University, College Station, Texas 77843-4239.

International Students

An applicant from another country seeking admission to graduate studies must meet the same requirements for admission as applicants from the

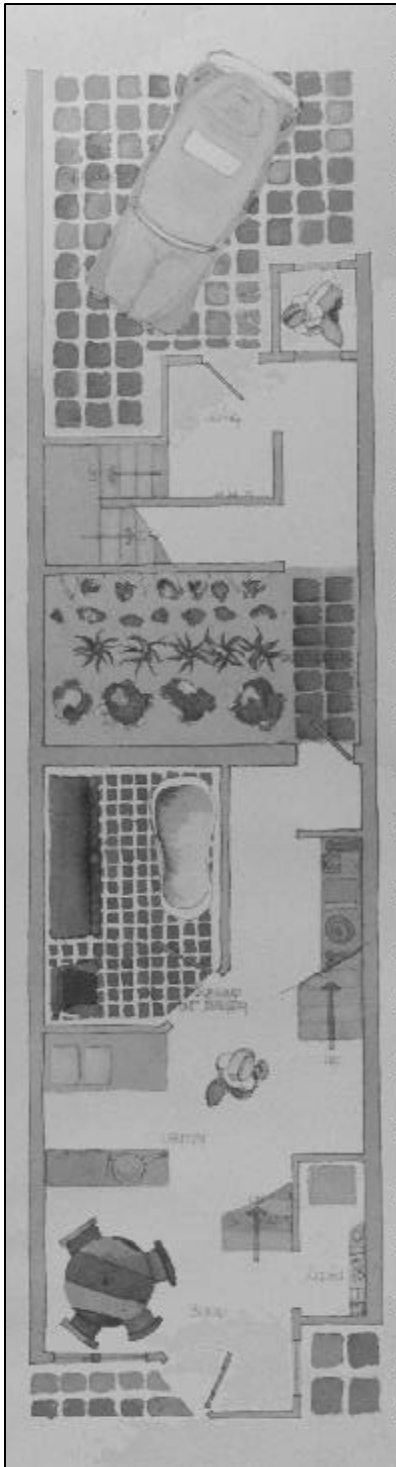
United States. In addition, he or she must demonstrate the ability to speak, write, and understand the English language. Prospective students whose native language is not English must take the Test of English as a Foreign Language (TOEFL), administered by the Educational Testing Service in over 200 centers around the world. A registration form and a "Bulletin of Information for Candidates" may be obtained by writing:

TOEFL Programs and Services
P.O. Box 6155
Princeton, New Jersey 08541-6155

All applicants from non-English speaking countries must achieve a score of at least 550 on the TOEFL in order to be admitted to graduate studies.

All graduate students whose native language is not English must fulfill an English Language Proficiency requirement. The proficiency requirement should be met early in a student's program and must be completed prior to the scheduling of either the final examination for the master's degree or the preliminary examination for the doctoral degree. The requirement may be met either through English Proficiency Verification or English Proficiency Certification.

Some students may meet English Proficiency Verification requirements by submitting at the time they apply for admission, official TOEFL scores from within the last five years that meet a minimum level specified by the university. Other students may meet English proficiency requirements by



submitting at the time they apply for admission, official TOEFL scores from within the last five years that meet a minimum level specified by the university, and receiving English proficiency counseling prior to registration for courses.

Students who must meet an English proficiency requirement and who do not qualify for English Proficiency Verification must complete English Proficiency Certification requirements. In addition, a graduate student whose native language is not English must complete English Proficiency Certification requirements prior to holding a teaching assistantship. A student can complete English Proficiency Certification requirements in one of the following ways:

- Scoring 80 or higher on each of the six parts of the English Language Proficiency Examination (ELPE);
- Earning a grade of "B" or better in the advanced level of the required course in the English Language Institute (ELI); or
- Earning alternative certification on the basis of credentials or other evidence approved by the director, Office of Graduate Studies.

Financial Assistance

General

Regents Scholarships and University Merit Scholarships are available for students with high GPR and GRE or GMAT scores. University and company-sponsored graduate assistantships are also available.

Departmental

Graduate students who wish to receive financial assistance may apply for the following scholarships, when applicable:

The Kelley Vrooman R.N. Scholarships

Endowed by Professor Emeritus Richard E. (Dik) Vrooman in honor and memory of his wife, Kelley, for undergraduate and graduate students specializing in health care facilities design.

Jonathan King Memorial Student Research Endowment

Endowed by Ms. Cynthia "Toni" King, family, friends and professional colleagues in honor and memory of Jonathan King, for academic research projects in the CRS Center.

Edward J. Romieniec Scholarship

Endowed by Ronald L. Skaggs '65, of HKS in Dallas, and his wife Sondra Skaggs, the scholarship was established in honor of professor and dean emeritus Edward J. Romieniec, Skaggs' final design studio professor, for a student of junior classification or higher, including graduate students.

George L. Bohn Memorial Scholarship

Established in 1993 by J. Paul Bohn '84, Mrs. Esther Bohn, and daughters Brenda E. Trifon and Sandra E.

Sciortino in honor of George L. Bohn, for an environmental design student who demonstrates academic excellence and potential, or an incoming graduate student pursuing an advanced degree in architecture.

The William C. Pahlmann Scholarship

Endowed by Mr. and Mrs. H.C. Heldenfels of Corpus Christi, in memory of William C. Pahlmann, Interior Designer of New York, to benefit a graduate student in the final year of the professional program with interest in interiors.

The Edward J. Romieniec Graduate Traveling Fellowship

Established by Professor and Dean Emeritus Edward J. Romieniec for a first year graduate student in architecture to travel and study in Japan, China, Southeast Asia, or Russia.

The William Wayne Caudill Research Fellowships in Architecture

In memory of William Wayne Caudill, renowned Houston architect, this \$100,000 endowment, along with a matching grant from the university, goes to two outstanding doctoral students.

AIA/AAF (American Architectural Foundation) Scholarships for Professional Degree Candidates

This program assists students in one of the final two years of a professional degree program in architecture and administered with schools accredited by the NAAB.

AIA/AHA Graduate Fellowship in Health Facility Planning and Design

Funded by the AIA and the AHA; awarded to increase the awareness of architecture students in the special

needs and nature of healthcare facilities, to attract young architects and students to this field and to advance the knowledge of planning and design for healthcare environments. Based on research proposal submission.

Gutter W. Koetter '40 Endowed Memorial Scholarship in Architecture

Established by James R. Cole, chairman of the board of Lockwood, Andrews and Newnam Inc. (LAN), and Berry R. Grubbs, president of Terra-Mar in Dallas; awarded to a College of Architecture student in good academic standing.

Harwood K. Smith '35 Endowed Graduate Fellowship in Architecture and a Harwood K. Smith '35 Endowed Scholarship in Architecture

Endowed by Harwood K. Smith in December 1997 with matching funds from the Texas A&M University Scholarship Program. Recipient shall be a graduate student pursuing a professional degree in architecture, or an environmental student in the Corps of Cadets.

Robert L. and Helen Wingler Endowed Scholars Fund

Endowed by Robert L. Wingler '52 and his wife Helen; awarded to students pursuing the pre-professional degree, demonstrating academic excellence and professional potential.

Texas Old Missions and Forts Restoration Association (TOMFRA)/ Raiford L. Stripling Memorial Award for the Advancement of Historic Preservation

Established in December, 1992, by TOMFRA, this award is for an

outstanding undergraduate or graduate student who has chosen to specialize in the preservation and restoration of historic structures or sites, and who has completed a recent paper or project relating to historic preservation.

Texas Architectural Foundation Scholarships:

The Texas Architectural Foundation was established in 1952 to "provide for the support of architectural education in Texas through financial aid, grants, or scholarships to selected schools, programs, and students."

The Jesse H. Jones Scholarships in Architecture

The Houston endowment, in honor of Jesse H. Jones, provides funds to support the final year of study for a student enrolled in the professional degree program in each of the accredited schools.

The Preston M. Geren, Sr. '12, Memorial Scholarship

Endowed by Preston M. Geren, Jr. '45, FAIA in memory of his father, Preston M. Geren, Sr., one of the most distinguished members of the architectural profession in Texas, for a student who has demonstrated ability both in architectural design and technical knowledge of materials and methods.

John Only Greer '55, FAIA, and Wanda Knight Greer Architectural Award

Endowed by John Only Greer, FAIA, and Wanda Knight Greer for the benefit of the architecture programs at Texas A&M University.

Edward J. Romieniec, FAIA Scholarships

Endowed by professor and dean

emeritus Edward J. Romieniec, for a female undergraduate and graduate student.

H. Leo Tucker Scholarship by Tittle Luther

Endowed in honor of Mr. and Mrs. Leo Tucker by the Tittle Luther Partnership of Abilene, for a student in the graduate program.

Texas Architectural Foundation Scholarships:

The following scholarships are endowed through the Texas Architectural Foundation and Awarded on a rotational or competitive basis with the other accredited schools of architecture in Texas:

The Hugh M. Cunningham Grant

Established by Hugh M. Cunningham, Dallas, to assist and reward deserving students in each of the six accredited programs of architectural study.

Other competitive scholarships include:

Abilene Chapter/AIA Scholarship

Association Administrators & Consultants, Inc.

El Paso Chapter/AIA Scholarship

**O'Neil Ford, FAIA, Traveling Fellowship
Grayson Gill Memorial Scholarship**

George Harrell II Scholarship

Horace B. McCord Memorial Scholarship

Northeast Texas Chapter/AIA Scholarship

San Antonio Conservation Society Foundation Honoring Brooks Martin, FAIA

**Southwest Terrazzo Association, Inc.
Scholarships in Architecture**

E. G. Spencer Scholarship

**Fay H. Spencer Memorial Scholarships
in Architecture**

Paul and Katie Stein Scholarships

Waco Chapter/AIA Scholarship

West Texas Chapter/AIA Scholarship

**Wichita Falls Chapter/AIA
Scholarship**



Courses

Listed below are all graduate courses offered through the College of Architecture. Included in the listing are the course number; course title; number of lecture hours-laboratory hours per week; number of credit hours; and course description.

Architecture (ARCH)

ARCH405 Architectural Design IV. (3-9). Credit 6. Theory and practice of architecture as art and science; manual and digital graphic techniques used in the analysis and synthesis of concepts unique to site design and spatial enclosure; understanding specific cultural, social and physical contexts; the application of theory to form and building systems, site analysis and development of design solutions integrating formally expressive visual ideas and functionally adept planning and design concepts. Concurrent enrollment in ARCH 406 and ARCH 463 not allowed. Prerequisites: Upper-level classification in environmental design, construction science or landscape architecture; ARCH 305, 306, 331, 333.*

ARCH406 Architectural Design V. (2-6). Credit 4. Theory and practice of architecture as art and science; in-depth studio experience in the selection and application of structural systems and mechanical systems; building services, building materials and connections; interior space configuration and lighting as appropriate schematic design taken to the level of detail appropriate to design development. Concurrent enrollment in ARCH 405 and ARCH 463 not allowed. Prerequisites: Upper-level classification in environmental design, construction science or landscape architecture; ARCH 405.*

ARCH 601 Design Fundamentals I. (3-9). Credit 6. 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; career change program.

ARCH602 Design Fundamentals II. (3-9). Credit 6. 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, 610, 612 or approval of instructor.

ARCH605 Architectural Design I. (2-12). Credit 6. 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.*

ARCH606 Architectural Design II. (2-12). Credit 6. 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.*

ARCH607 Architectural Design III. (2-12). Credit 6. 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 610 Visual Communications. (2-4). Credit 3. Investigation and practice of various communications 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.

ARCH 612 Structural and Environmental Technology Concepts. (3-0). Credit 3. An introductory course intended to quickly and broadly develop the vocabulary base, visual understanding, and familiarity with technological systems that architects deal with throughout their practice. Prerequisite: MATH 142 and PHYS 201 or equivalents and graduate classification.

ARCH 614 Elements of Architectural Structures. (3-0). Credit 3. 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. (3-0). Credit 3. Design and operational issues and systems related to advanced traffic

systems; advanced studies on traffic management systems, travelers' information systems, public transportation systems, and commercial vehicle operation. Prerequisite: Graduate classification in engineering or approval of instructor.

ARCH 621 Energy Optimization in Building Design. (3-0). Credit 3

Optimum energy use strategies for buildings, energy audit methods, life-cycle cost analysis of building energy systems, solar system applications, building system optimization by computer simulation techniques; case studies in passive energy and solar applications. Prerequisite: ARCH 633 and CPSC 203 or equivalent.*

ARCH 622 Sustainable Building Design Technology. (3-0). Credit 3

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. (3-0).

Credit 3 Importance of intuitive methods in design; meaning, symbolism and creativity in art and architecture; techniques to develop creative approaches to problem-solving.

ARCH 631 Structural Systems. (3-0).

Credit 3 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: Nine hours of structures.

ARCH 633 Environmental Control Systems. (3-0). Credit 3 Building energy consumption patterns and

conservation strategies; natural and mechanical subsystems for environmental control; subsystem design criteria, economic consideration and selection methods. Prerequisite: COSC 336.*

ARCH 638 Architectural Theory—Renaissance Through 19th Century. (3-0). Credit 3

Review of architectural theory and practice from the 15th to 19th centuries with emphasis on the classical tradition; its transformations in France, Great Britain, and Germany; aspects of this evolution. Prerequisite: ARCH 449 or equivalent.

ARCH 639 Contemporary Architecture. (3-0). Credit 3

Twentieth century architecture; development of style, structure, materials, social and economic factors influencing architecture; discussion and criticism of work and writings of architects and architectural theorists. Prerequisite: ARCH 449 or approval of instructor.

ARCH 640 Morphology of Architectural Form. (3-0). Credit 3

Forces influencing structure and form of architecture: climate, culture, site, economics, construction methods. Prerequisite: Graduate classification.

ARCH 642 Data Processing in Environmental Design. (2-3). Credit 3

Application of the computer to architectural problems; the computer as a mapping device for graphical display of spatially-related data; simple and multiple linear regression on sets of data; correlation analyses and practice at running the computer for these applications.

ARCH 646 Historic Building Preservation. (3-0). Credit 3

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.*

ARCH 647 Recording Historic Buildings. (1-5). Credit 3

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 and appropriate background in architectural drawing.*

ARCH 648 Building Preservation Technology. (3-0). Credit 3

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 657 Professional Practice. (3-0). Credit 3

Business and legal environment; design and construction industry; legal forms of practice; office organization, personnel practices, policies and management; basic and expanded professional services; economics of practice, profit planning, and accounting; client selection; standard forms of agreement between design professionals, consultants, and clients; professional ethics; relationships and forms of construction, bidding, and contract documents; standard conditions of construction contracts; selection of contracts; project procedures and administration; professional liability. Prerequisite: MGMT 212 or equivalent and graduate classification.

ARCH 660 Design Programming. (3-0). Credit 3

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.

ARCH 661 Interior Component Selection and Design. (2-4). Credit 3

Standard lines of furniture and accessories; methods of selection; theory and application in designing components; furniture, accessories, and architectural graphics. Prerequisite: Approval of instructor.*

ARCH 663 Interior Architecture I. (2-4). Credit 3

Theory and application of interior architectural programming and design processes using small-scale interior architectural projects as case studies; design as a synthesis of human perception, user's background of behavior, sociological makeup, design tools, and systematic predictions. Prerequisite: Approval of instructor.*

ARCH 676 Survey of Human Behavior and Design. (3-0). Credit 3

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.*

ARCH 681 Seminar. (1-0). Credit 1 each semester.

Discussion and review of current practice in architecture and environmental design.

ARCH 684 Professional Internship. Credit 1 to 8.

Professional practice under approved arrangement with public or private agencies or in residence to complement academic course work and to provide the basis for, and allow the preparation of, an appropriate report. Prerequisite: Approval of department head.

ARCH 685 Problems. Credit 1 to 6 each semester.

Individual problems involving application of theory and practice in design and construction of buildings and groups of buildings. Prerequisite: Approval of instructor and department head.

ARCH 689 Special Topics in... Credit 1 to 4.

Selected topics in architecture and environmental design. May be repeated for credit. Prerequisite: Approval of instructor.

ARCH 690 Theory of Research in Architecture. (3-0). Credit 3

Design of research in various subfields of architecture, evaluation of research results using examples from current research literature. May be repeated for credit. Prerequisite: Graduate major in architecture or related field.

ARCH 691 Research. Credit 1 or more each semester.

Research for and preparation of dissertation.

ARCH 693 Professional Study. Credit 1 to 23 each semester.

Approved professional study or project undertaken as the terminal requirement for the Master of Architecture. May be taken more than once but not to exceed 6 hours of credit toward a degree. Prerequisite: Approved proposal.

*Field trips may be required for which departmental fees may be assessed to cover costs.

College of Architecture (CARC)

CARC 601 Foundations of Research in Planning and Design. (3-0). Credit 3

Introduction to the research process and its application to problems in planning and design; presentation of philosophy and logic underlying the scientific method; critical analysis of planning and design literature according to each step of the research process: problem definition, hypothesis development, study design, analysis, and interpretation of the findings.

CARC 602 Research Methods in Planning and Design. (3-0). Credit 3

Basic empirical research methods used in planning and design research:

experimental, survey, and case study designs; comparisons of the various methods; application of techniques in sample selection, data collection, and analytic approaches. Prerequisite: STAT 651 or equivalent.

CARC 685 Problems. (0-0). Credit 1-6.

Individual problems involving application of theory and practice in architecture, construction science, landscape architecture, and urban and regional planning in an international setting. Variable credit, 1-6 hours. Prerequisite: Approval of instructor and department head.

CARC 689 Special Topics in... Credit 1 to 4.

Selected Topics in an identified field. May be repeated for credit.

Construction Science (COSC)

COSC 601 Construction Practices. (3-0). Credit 3

Construction materials and processes from inception to completion; alternative construction delivery processes; code standards and safety aspects related to buildings; various contemporary/innovative building systems. Prerequisite: graduate classification.

COSC 602 Construction Planning. (3-0) Credit 3

An overview of skills and techniques used to estimate project costs, plan, schedule and monitor projects. Prerequisites: COSC 601 or equivalent and graduate classification.

COSC 606 Mechanical and Electrical Construction. (3-0). Credit 3

Selection of mechanical and electrical equipment to support construction operations; design, construction and costs of building mechanical/electrical sub-systems; energy operating and maintenance costs. Prerequisite: Graduate classification.

COSC608 Structural Principles and Practices. (3-0). Credit 3. Investigations into practical applications of structural design; survey and studies of various structural systems. Prerequisites: COSC 321 or equivalent and graduate classification.

COSC621 Advanced Topics in Construction Project Scheduling and Project Management. (3-0). Credit 3. Advanced techniques used in scheduling and evaluating progress in construction project control; development of strategies for overcoming overruns; resources allocations; case studies. Prerequisites: COSC 602, STAT 651.

COSC624 Project Acquisition and Control (3-0). Credit 3. Acquisition of new work in the construction industry. An overview of organizational theory, strategic planning and business planning in the construction industry. Acquisition procedures including response techniques for complex requests for proposals. Understanding the final concepts of sales and marketing, backlog, and business development budgeting in construction.

COSC627 Construction Dispute Resolution Alternatives. (3-0). Credit 3. Introduce students to theories used to resolve claims and disputes arising during the construction process, including negotiation, mediation, arbitration and litigation. Course will emphasize alternatives to litigation and principles of negotiation useful in construction management.

COSC628 Applications of Construction Law. (3-0). Credit 3. Review of most common areas of law applied to the industry; application of this law to case studies; introduction to analytical processes needed to argue legal issues and claims; review of dispute resolution methods; and ethics in the construction industry. Prerequisites: COSC 463 or approval of instructor and graduate

classification.

COSC642 Web-based Construction Data Management. (3-0). Credit 3. A comprehensive introduction to the principles and techniques of information systems and data communication within the construction industry; the content is directed toward the construction management student who desires a technical overview of the concepts of information systems, data transmissions and network-based technologies employed in the design and management of construction communication networks. Prerequisite: Graduate classification. (3-0). Credit 3.

COSC644 Systems Approach to Construction Management. (3-0). Credit 3. Concepts, relationships and techniques of decision analysis; application of methodology and techniques to major decisions faced by construction managers. Prerequisite: Graduate classification.

COSC648 Design-Build Project Delivery. (3-0). Credit 3. Overview and analysis of the design-build project delivery process utilizing case studies. Emphasis on understanding alternative project delivery systems evolving in the design and construction industries. Prerequisite: Graduate classification or approval of instructor.

COSC650 Introduction to Construction Visualization. (2-2) Credit 3. Introduction to the theory and application of 3-D computer models in the design/build construction process; creation, position in 3-D space, and linking of building components to a database record; creation of wide range of construction related information useful in controlling project quality. Prerequisite: Approval of instructor.

COSC662 Contemporary Housing Production: Theory and Practice. (3-0). Credit 3. Introduction to the contempo-

rary housing production system and to the social and economic forces upon which it must rely to be successful; Consumer preference, technological innovation, and quality control are also covered. Prerequisite: Graduate classification.

COSC664 Construction Safety Management. (3-0). Credit 3. Safety management process and the development of a comprehensive safety program to include hazard recognition, field safety meetings, OSHA documentation requirements, accident investigation and analysis, coordination of the contractor and subcontractor relationship, and the development of OSHA teaching modules for field use; opportunities to obtain a OSHA 30 Hour Certification, a CPR Certification, and a First Aid Certification. Prerequisite: Graduate classification.

COSC670 Facilities Management. (3-0). Credit 3. Fundamentals of facilities management including: concepts, theories, and principles of construction, architecture, design, accounting, finance, management and the behavioral sciences of facilities management. Prerequisite: Graduate classification.

COSC672 (Currently COSC 689) Facilities Planning, Design, and Construction. Overview of planning, design, and construction of projects by a construction facilities (in house/owner) department. The overview includes: determination of needs, design of facilities, interior design, real estate issues, construction project management, utilizing the bidding process (public and private sector issues), role of the construction facilities department as the construction manager, and financial considerations of a construction facilities department within an organization.

COSC674 Facility Energy Management. (3-0) Credit 3. Introduce major technologies, including human comfort, heating, ventilating and air conditioning (HVAC), and piping systems; describe system terminology, engineering design characteristics, components, and materials; stress constructions and installation methods and procedures; discuss contractual relationships and coordination requirements during project execution between owners, design firms, and general as well as specialty contractors; assess operation and maintenance criteria for facility energy systems; and evaluate operating and life-cycle cost of facility energy systems. Prerequisite: COSC 606 or equivalent undergraduate course work.

COSC681 Seminar. (1-0). Credit 1 each semester. Discussion and review of degree requirements and current practices in construction management.

COSC690 Theory of Research in Construction Management. (3-0). Credit 3. Introduction to research, research tools, proposal writing, and research reports. Emphasis placed on research planning and design. Topics to be covered range from the review of literature through qualitative and quantitative research methodologies. Special attention will be devoted to defining research problems in construction science and the development of research proposals.

COSC691 Research. Credit 1 or more each semester. Research for thesis.

COSC693 Professional Study. Credit 1 to 6. Approved professional study of project undertaken as terminal requirement for Master of Science, non-thesis option. Preparation of a record of study summarizing the rationale, procedure and results of the completed study. Prerequisite: Approval of major advisor. May be repeated for credit.

Landscape Architecture (LAND)

LAND601 Landscape Architectural Design Theory. (2-9). Credit 5. Principles and application of landscape architectural design theory, relationships of two- and three-dimensional space as they relate to the natural and built environment, and illustrative communication. Prerequisite: Graduate classification and approval of instructor.

LAND602 Landscape Architectural Design Application. (2-9). Credit 5. Application of design concepts to site planning and site-specific contemporary issues including natural systems, social, political, economic, technological, energy, and resource-efficiency influences on design. Prerequisite: LAND 601.

LAND603 Principles and Techniques of Land Development. (2-12). Credit 6. A continuation of the LAND 601-602 design sequence for career change students; organized to develop an understanding of the various systems that must be integrated through land design; applies this understanding through planning and design of a project, including project programming, site selection, master planning, site design, and working drawings. Prerequisite: LAND 602.

LAND612 Landscape Architectural Site Development. (2-6). Credit 4. Concepts, theories and techniques of site development; creative land form modification, landscape construction materials and structures, drainage principles, site circulation, and utilization of materials. Prerequisite: LAND 601 or approval of instructor.

LAND614 Landscape Architecture Construction. (2-4). Credit 3. An introduction to the basic elements of landscape construction; course stresses

materials and applications of the basic principles of statics and mechanics of simple structures in the use of wood, concrete, and masonry, plus the design of irrigation and lighting systems. Prerequisite: LAND 612.

LAND620 Open Space Development I. (2-9). Credit 5. Solution of comprehensive open space design problems. Subjects may be diversified as to scale and complexity. Prerequisite: Graduate classification in landscape architecture or approval of instructor.

LAND621 Open Space Development II. (3-0). Credit 5. Continuation of LAND 620; production of plans and reports. Prerequisite: LAND 620.

LAND630 Development of Landscape Architecture. (3-0). Credit 3. Overview of the history of human settlement, land use, and landscape architecture outside of North America. Prerequisite: Graduate classification.

LAND640 Research Methods in Landscape Architecture. (3-0). Credit 3. Research methods including theory, hypothesis formulation, design, data collection, measurement, and report writing; equates research activity to landscape architecture and the interaction between people and their physical environment. Prerequisite: Graduate standing.

LAND645 Practice Diversity in Landscape Architecture. (3-0). Credit 3. An exploration of the diversity or practice opportunities within the profession of landscape architecture; individual roles within those areas of practice and the skills required to function successfully within them. Prerequisite: Graduate classification and approval of instructor.

LAND646 Professional Practice. (3-0). Credit 3. Introduction to the

procedures, project management and ethical framework in which professional landscape architectural practice occurs. Topics include proposal preparation, fee structures, forms of practice, project management and contract documents. Prerequisite: Graduate classification and approval of instructor.

LAND655 Landscape Architectural Communication. (2-4). Credit 3

Graphic communication techniques required to expand landscape architectural concepts and designs including plan graphics, analysis and inventory graphics, perspective drawings, sketch composition, rendering media, color scanning, use of software and desktop.

LAND661 Visual Quality for Design and Planning. (3-0). Credit 3

Emphasis on social science perspectives for analyzing visual quality in built and natural and effects of visual surroundings on human well-being and health; the content reflects a balance of theory, scientific research evidence and practical applications in areas of landscape architecture, architecture, urban planning, and park design. Prerequisite: Graduate classification.

LAND681 Seminar. Credit 1 each semester.

Analysis and criticism of selected landscape architectural projects, lectures, reports, and discussions. Prerequisite: Graduate classification in landscape architecture.

LAND684 Professional Internship. Credit 4.

Professional practice under approved arrangement with public or private agencies.

LAND685 Problems. Credit 1 to 6.

Individual problems involving application of theory and practice in planning and design of the environment.

LAND689 Special Topics In ...

Credit 1 to 4. Selected topics in an

identified area of landscape architecture. May be repeated for credit.

Prerequisite: Approval of instructor.

LAND691 Research. Credit 1 or more each semester. Research for and preparation of dissertation. Prerequisite: Doctoral classification.

LAND693 Professional Study. Credit 1 to 6 each semester (maximum of 8 credits).

Approved professional study project undertaken as the terminal requirement for the Master of Landscape Architecture degree. Preparation of a record of study summarizing rationale, procedure, and results of the completed activity. Prerequisite: Approval of committee chair.

Land Development (LDEV)

LDEV 661 Development and Environment. (3-0). Credit 3 Land development in the context of environmental sustainability, human well-being and business profitability to foster a restorative economy; environmental assessment and site analysis; state, federal and international regulatory issues; and human ecology and the future of land development.

LDEV 662 Land Development Law. (3-0). Credit 3 Survey of real estate law with emphasis on Texas law; review of constitutional issues and basic legal concepts, including estates in land, contracts; private and public sector land use controls.

LDEV 663 Introduction to Project Management. (3-0). Credit 3 Project management processes for planning, scheduling, cost estimating, resource leveling, cost control and post-completion evaluation; issues in project organizational environments, documentation, quality control and safety.

Prerequisite: Graduate classification.

LDEV 664 Market Analysis for Development. (3-0). Credit 3 Techniques and data sources for market analysis for development; analysis for housing development; trade area analysis and market analysis for retail development; analysis for office, industrial parks and for specialized development. Prerequisite: Graduate classification.

LDEV 665 Land Development Trends. (3-0). Credit 3 Exploration of a variety of specialized topics associated with emerging trends in the land development industry.

LDEV 667 Design and Development Economy. (3-0). Credit 3

The interface between the physical and financial dimensions in the design and development process to achieve building and project economics; creating a physical product and a financial venture that responds to social and environmental concerns and to market economy and feasibility analyses. Prerequisite: Graduate classification.

LDEV 668 Land Development Practice. (2-2). Credit 3

Strategies, methods and techniques of land development including: site selection criteria, urban infrastructure, market evaluation; conceptual arrangement of land uses and structures; conceptual design and regulatory considerations; lending institutions; location theory; value theories; regulatory agencies. Prerequisite: LDEV 667.

LDEV 671 Sustainable Development. (3-0). Credit 3

Sustainability perspectives about values, rights, property, and what constitutes an optimum human environment; sustainability principles and case studies emphasizing on-the-ground, incentive-based land development that balances economic growth with

environmental quality. Prerequisite: Graduate classification.

LDEV673 International Development Planning. (3-0). Credit 3. International variations in urban growth and land development strategies; Savings, aid and trade policy options for cities and regions; international co-development programs; application of planning and urban land development professions in contemporary global context. Prerequisite: Graduate classification.

LDEV681 Seminar. (1-0). Credit 1. College of Architecture research activities pertaining to land and real estate development; preparation and presentation of required final written MSLD examination. Prerequisite: Graduate classification in land development.

LDEV682 Communications Perspectives. (1-0). Credit 1. Applications of advanced communications technologies to planning and development decision-making; organizational re-engineering; computer presentations and hypermedia; public hearings and dialogues with citizens. Prerequisite: Graduate classification.

LDEV683 International Development Perspectives. (1-0). Credit 1. Recent international conceptual frontiers in development and redevelopment; land and real estate development activities in the Far East, South America, Mexico and Eastern Europe; assessment of the future of global development. Prerequisite: Graduate classification.

LDEV684 Professional Internship. (12-0). Credit 1-12. Professional practice under approved arrangement with public or private land or real estate development agencies in the United States or abroad. Variable credit, 1-12 hours. Prerequisite: Approval of committee chair or

program coordinator.

LDEV685 Problems. (12-0). Credit 1-12. Individual and group problems dealing with application of strategic plan development theory in practice; opportunities to select international or domestic development projects of special interest. Variable credit, 1-12 hours. Prerequisite: Approval of instructor.

LDEV687 Development Feasibility and Design I. (3-9). Credit 6. Selected residential and nonresidential development projects of varying size analyzed by student teams with respect to the following: economic feasibility and cash flow; site analysis; and design concept. Prerequisite: Approval of instructor.

LDEV688 Development Feasibility and Design II. (1-6). Credit 3. Plans and venture structures for selected residential and nonresidential development projects of varying size analyzed by student multidisciplinary teams with respect to the following: economic feasibility and cash flow, and site and design plans and costs. Prerequisite: LDEV 687 or approval of instructor.

LDEV689 Special Topics in ... (4-0). Credit 1-4. Selected topics in an identified area of land development. May be repeated for credit. Variable credit, 1-4 hours. Prerequisite: Approval of instructor.

LDEV691 Research. (23-0). Credit 23. Ph.D. research and preparation of dissertation. One or more credit hours each semester. Prerequisite: Doctoral classification.

LDEV693 Professional Study. (6-0). Credit 1-6. Approved professional case study of projector organization in the United States or abroad. Undertaken as terminal requirement for the master of science in land development degree, non-thesis option. Variable credit, 1-6 hours. Prerequisite: Approval of

committee chair and program coordinator.

Urban Planning (PLAN)

PLAN610 Structure and Function of Urban Settlements. (3-0). Credit 3. The study of urbanization and how geographic, economic, sociologic and political factors give rise to changes in the structure and functions of cities; the movement of people, products, services and capital create unique urban patterns of land use and infrastructure with implications for long-term livability and sustainability. Prerequisites: Graduate classification and approval of instructors.

PLAN612 Transportation in City Planning. (2-3). Credit 3. Influence of transportation in shaping urban form; relationships between land use and transportation; conceptual layout of street systems; trends in urban development; site development circulation and relationships to the street system; and guidelines for the redevelopment of existing streets and the adjacent land. Cross-listed with CVEN 612.

PLAN613 Planning Methods and Techniques. (3-0). Credit 3. Methods and techniques of research, data collection, and analysis; coordination of planning process with public policy; and plan implementation.

PLAN614 Planning and Technological Change. (3-0). Credit 3. Examines the general relationship between technology and social change; examine a historical development of the technological roots of change; focus on the futurists and the analysis of the social impact of technology; focus on planning in conjunction with technological development.

PLAN615 Contemporary Urban Affairs. (3-0). Credit 3. Contemporary

problems of urban and metropolitan areas: housing, employment, education, health, government, and others.

PLAN616 Analyzing Risk / Hazard and Public Policy. (3-0). Credit 3

Evaluation and development of risk analysis, including risk assessment, perception of risk, risk communication, and risk analysis in public policy, participation, emergency preparedness, hazard mitigation, and the management of risk. Prerequisite: Graduate classification.

PLAN620 Dispute Resolution and Participation in Planning. (3-0). Credit 3

Theory and practice of public policy-oriented alternative dispute resolution (ADR), especially in environmental and land planning and regulation; practical skills of facilitation/mediation as aids to conventional public participation; voluntary negotiation as a supplement to regulation; relevant theoretical perspectives from decision and game theory and compensation literatures. Prerequisite: Graduate classification.

PLAN623 Development Planning in Third World Countries. (3-0).

Credit 3 Lectures and research projects of "Third World" development problems; application of planning methods and techniques towards long-term solutions in the context of unfolding contemporary world events. Role of international lending institutions, technical assistance, and funding requirements.

PLAN625 Geographical Information Systems in Landscape and Urban Planning. (2-3). Credit 3

Provides students an understanding of GIS fundamentals; basic concepts, principles and functions; essential skills for applying GIS in various fields such as urban planning, landscape architecture, land development, environment studies, transportation, and hazard management one learned through

course projects. Prerequisite: Graduate classification.

PLAN630 Survey of Health Planning Processes. (3-0). Credit 3

Application of planning process to health systems development. Historical and legal basis, principal agencies and institutions, role of health planner, citizen participation.

PLAN631 Planning and Programming Health Systems. (3-0). Credit 3

Specific health planning issues; distribution of manpower and facilities, financial resources, local/federal partnership, system's organization and governance.

PLAN633 Planning for Healthy Communities. (3-0). Credit 3

An introduction to issues involved in planning healthy cities/communities; by exploring experiences initiated by the World Health Organization and subsequent international experiences, attention is given to the healthy cities/communities movement in the United States and the case studies of programs at local, state, and national levels.

PLAN634 Environmental Health Policy and Planning. (3-0). Credit 3

Interdisciplinary perspectives of environmental risk analysis methods policy implications; federal and state agencies and programs involved in developing and implementing environmental health policies and monitoring environmental health hazards; historical and economic context of environmental health legislation; framework for policymaking process and criteria to determine effectiveness and outcomes. Prerequisite: Graduate classification.

PLAN640 Law and Legislation Related to Planning. (3-0). Credit 3

Legislative process and planning legislation. Enabling legislation and legal tools of planner: zoning, subdivision ordinances, eminent domain,

extraterritorial jurisdiction, and other related planning instruments.

PLAN641 Problems of Environmental Planning Administration. (3-0).

Credit 3 State and federal legislation pertaining to environmental and consumer protection aspects of urban planning; review of administrative procedures; major judicial decisions.

PLAN642 Land Development Law. (3-0). Credit 3

Survey of real estate law with emphasis on Texas law; review of constitutional issues and basic legal concepts, including estates in land, contracts; private and public sector land use controls.

PLAN643 Preservation Law. (3-0).

Credit 3 Theory and practice of historic preservation in the legal context; the constitutional and statutory foundations of historic resources planning and plan implementation; review of case studies and municipal ordinances.

PLAN649 Organizational and Community Response to Crises and Disasters. (3-0). Credit 3

Introduction to the study of organized and community planning and response to natural and technological disasters and social crisis; focus upon emergency preparedness and response; practical issues, planning for emergency management, and existing research literature of basic disaster at the organization and community levels. Prerequisite: Graduate classification.

PLAN650 Disaster Response Planning. (3-0). Credit 3

Mitigation, preparedness, response, and recovery strategies; roles of the Federal Emergency Management Agency, the Governor's Division of Emergency Management, the National Weather Service, and the American Red Cross. Prerequisite: Approval of Instructor.

PLAN 654 Planning Administration and Management. (1-0). Credit 1.

Issues of professional practice in public and private sectors.

PLAN 656 Housing and Community Facilities. (3-0). Credit 3.

Housing: its development, planning, marketing, designing, financing, and production. Student problems dealing with urban renewal, neighborhood structure, and community facilities.

PLAN 658 Plan Implementation. (3-0). Credit 3.

Techniques of implementing major urban development programs and plans; capital improvements programming and budgeting; overview of regulatory measures; public involvement process; fiscal planning; federal financial assistance and application procedures.

PLAN 661 Information and Communication in Planning. (2-2). Credit 3.

Types and sources of planning-related information; use of verbal, printed, and electronic media in communicating planning information and formulating alternative solutions to community development problems.

PLAN 662 Applied Planning I. (1-6). Credit 3.

Acquisition, analysis, and management of information pertaining to urban and regional planning in a case-specific scenario, including: issue analysis; formulation of goals, objectives, and policies; consensus-building; and all tasks leading up to the preparation of an urban, regional, or strategic plan. Prerequisite: PLAN 665 or approval of department head.

PLAN 663 Applied Planning II. (1-6). Credit 3.

Preparation of a major plan or planning document for a specific subject associated with the field of urban and regional planning. Subjects may include the environment; land use; urban image; and other topics.

Prerequisite: PLAN 662 or approval of department head.

PLAN 664 Planning Theory and History. (3-0). Credit 3.

A critical examination of the justifications for and major alternative approaches to planning in the public domain, beginning with the fundamental historical intentions of and projects in city planning within industrial societies and tracing the subsequent development of planning as political reform, political analysis, social mobilization and other modern variants.

PLAN 665 Plan Making. (3-0). Credit 3.

Introduction to a wide variety of styles and methodologies employed by the urban and regional planner. Planning styles reviewed include: comprehensive land use planning; policies planning; strategic planning; regional planning; and private sector corporate planning. Emphasis is given to the actual review and content analysis of plans.

PLAN 667 Development Feasibility and Design. (3-9). Credit 6.

Selected residential and nonresidential development projects of varying size analyzed by student teams with respect to the following: economic feasibility and cash flow; site analysis; and design concept. Prerequisite: Approval of instructor. Cross-listed with ARCH 667 and LAND 667.

PLAN 668 Land Development Practice. (2-2). Credit 3.

Strategies, methods, and techniques of land development including: site selection criteria; urban infrastructure; market evaluation; conceptual arrangement of land uses and structures; conceptual design and regulatory considerations; lending institutions; location theory; value theories; regulatory agencies.

PLAN 669 Urban Infrastructure Planning. (2-2). Credit 3.

Identification

of urban infrastructure requirements; criteria for utility location and design; projection of the conversion of land to urban uses; estimating demand for urban services; anticipating the effect of urbanization on storm run-off; and municipal practice in financing infrastructure extensions.

PLAN 670 Urban Public Transportation Planning. (2-3). Credit 3.

Planning, operational, fiscal, management, and legal aspects of urban, rural, and regional public transportation modes. Preparation of transportation systems program elements. Cross-listed with CVEN 670.

PLAN 672 Urban Transportation Study. (3-3). Credit 4.

Procedures and techniques of traditional urban transportation studies. Study design, data collection and processing, trip generation, trip distribution, traffic assignment and mode choice. Data reliability; sketch planning and abbreviated study techniques. Cross-listed with CVEN 672.

PLAN 674 Transportation System Analysis. (3-0). Credit 3.

Introduces basic concepts and techniques of modeling, analyzing, and solving problems in transportation systems planning, operations, management, and design within a unified framework for transportation systems analysis. Includes disaggregate demand theory and application; activity analysis and land use forecasting; network optimization stochastic processes; queuing models; and simulation. Prerequisite: CVEN 672, PLAN 672, or approval of instructor.

PLAN 675 Theory of Planning and Urbanism. (2-0). Credit 2.

Theories of planning and urbanization in world literature; physical community design as expression of ideology and cultural value systems.

PLAN681 Seminar. (1-0). Credit 1. Reports and discussions of current research and selected topics in urban and regional planning. Prerequisite: Approval of instructor.

PLAN684 Professional Internship. Credit 1 to 8. Professional practice under approved arrangement with public or private agencies.

PLAN685 Directed Studies. Credit 1 to 6 each semester. Individual and group problems dealing with application of planning theory and practice. Opportunities to select foreign and domestic planning project of special interest.

PLAN689 Special Topics in ... Credit 1 to 4. Selected topics in an identified field of urban and regional planning. May be repeated for credit.

PLAN690 Theory of Research in Urban and Regional Science. (3-0). Credit 3. Survey of research methodology; consideration of research strategy and design; preparation of proposals and reports; review/evaluation of current research in relevant subfields of urban and regional science.

PLAN691 Research. Credit 1 or more each semester. Ph.D. research and dissertation.

PLAN693 Professional Study. Credit 1 to 6. Approved professional project undertaken as the terminal requirement for the Master of Urban Planning degree; preparation of a record of study summarizing rationale, procedure and results of the completed activity. Prerequisite: Approval of committee chair.

Visualization
(VIZA)

VIZA 611 Concepts of Visual Communication I. (2-4). Credit 4.

Theory and practice of visual communication using a variety of media to explore perception, form-making, color, and historic and personal sources of creativity. Prerequisite: Graduate classification in visualization or approval of instructor.

VIZA 612 Concepts of Visual Communication II. (2-4). Credit 4. Further exploration of perception, vision and self-expression for communication through visual images; image-making processes include conventional and digital media. Prerequisite: VIZA 611 or approval of instructor.

VIZA 613 3-D Modeling and Animation. (3-2). Credit 4. Principles of 3-D computer animation with an emphasis in aesthetics and techniques for 3-D modeling, color, texture, lighting, motion control and rendering. Prerequisite: Graduate classification in visualization or approval of instructor.

VIZA 614 Form/Installation/Environment. (2-4). Credit 3. Aesthetic and functional concerns involving public spaces; interdisciplinary investigation of audible, visual, and form potential of environmental space utilizing models and electronic imaging technology; ethical responsibilities regarding the environment and its use. Prerequisite: Approval of instructor.

VIZA 615 Computer Animation. (3-2). Credit 4. Intermediate level computer animation - focusing on production of sync-sound, three-dimensional, computer-generated animation, which may or may not integrate video and photographic elements. Prerequisite: VIZA 613 or approval of instructor.

VIZA 616 Rendering and Shading. (2-2). Credit 3. Exploration of advanced rendering and shading techniques for the attainment of a desired visual effect; topics may include shading languages, attainment of visual realism, integration

of rendering and modeling tools, and non-photorealistic rendering. Prerequisites: VIZA 613 and 653 or approval of instructor.

VIZA 617 Advanced Animation. (2-4). Credit 4. Development of advanced three-dimensional computer animation with emphasis on successful storytelling and visual communication; may include story development, expressive character design, motivation, acting, speech animation, choreography, stage lighting, storyboards, soundtracks, story reels, production, efficiency, and successive refinement. May be taken twice. Prerequisite: VIZA 615; approval of instructor.

VIZA 622 Design Communication I. (2-4). Credit 4. Theory and practice in visual communication employing a variety of digital and conventional media; emphasis on creating effective, self-expressive images employing the combined use of a variety of media. Prerequisite: VIZA 612 or approval of instructor.

VIZA 623 Design Communication II. (1-4). Credit 3. Development of concepts and forms in visual communications; organization of complex problems in production; synthesis of skills, information tools, and methodology. Prerequisite: VIZA 622 or approval of instructor.

VIZA 627 Design Communication III. (2-2). Credit 3. Advanced methods in video, photography, and/or animation production; application of image strategies used in contemporary media. May be taken twice. Prerequisite: VIZA 622 or VIZA 643 or approval of instructor.

VIZA 643 Videography. (2-4). Credit 4. Vision and perception represented through use of video presentation methods and techniques; theory and practice of staging, sound,

camera, editing, script generation, special effects in production and post-production video practices. Prerequisite: VIZA 612 or approval of instructor.

VIZA 644 Advanced Video. (2-4). Credit 3. Advanced theory and practice of video production; emphasis on special effects and post-production methods; interactive video; integration with other graphic media. Prerequisite: VIZA 643 or approval of instructor.

VIZA 647 Color Photography. (1-4). Credit 3. Theory and practice of still color photography; appropriate uses of color processes related to digital photography and other graphic media; exploration of vision through the photographic image as a medium of self expression. May be taken twice. Prerequisite: Approval of instructor.

VIZA 652 Computing for Visualization I. (3-2). Credit 4. Introduction to digital computing environments as used in visualization practice and research; human-computer interface, operating system tools, and programming for graphics. Prerequisite: CPSC 110 or equivalent; approval of instructor.

VIZA 653 Computing for Visualization II. (3-2). Credit 4. Techniques of design and problem solving for the construction of visualization software systems; advanced operating system tools for system maintenance; fundamentals of 2-D computer graphics including user interface design and programming, mathematical elements, image and file structure, and software development techniques. Prerequisite: VIZA 652 or approval of instructor.

VIZA 654 The Digital Image. (3-2). Credit 4. Tools and techniques for the generation, handling and analysis of two-dimensional digital images; image representation and storage, display, media conversion, painting and

drawing; warping; color space operations, enhancement, filtering and manipulation. Prerequisite: VIZA 653 or approval of instructor.

VIZA 656 Image Synthesis. (3-2). Credit 4. Principles of image synthesis from 3-D scene descriptions; topics may include local and global illumination, shading, shadow determination, hidden surface elimination, texturing, raster graphics algorithms, transformations and projections. Prerequisite: VIZA 653 or approval of instructor.

VIZA 657 Computer Aided Sculpture. (2-2). Credit 3. Mathematical and artistic principles of 3-D modeling and sculpting. Topics include: Proportion, skeletal foundation, expression and posture, line of action, curves, surfaces and volumes, interpolation and approximation, parametric and rational parametric polynomials, constructive solid geometry, and implicit representations. Prerequisite: Approval of instructor.

VIZA 658 Experimental Visual Techniques. (2-2). Credit 3. Theory and experimental techniques for computer graphics, animation, video, and other forms of electronic visualization. Topics may include innovative hardware and software systems, artificial life, virtual reality, volume methods, and hypermedia. Prerequisite: VIZA 654 or VIZA 656 or approval of instructor. May be repeated for a total of 6 credit hours.

VIZA 659 Physically-Based Modeling. (2-2). Credit 3. Physical simulation as used in choreography, geometric modeling, and the creation of special effects in computer graphics; a variety of problems and techniques are explored which may include particle - methods, modeling and simulation of flexible materials, kinematics, and constraint systems. Prerequisite: Approval of instructor.

VIZA 685 Problems in Visualization. Credit 1-6. Individual problems involving application of theory and practice in Visualization. May be repeated for credit. Prerequisites: Approval of instructor and department head.

VIZA 689 Special Topics in Visualization. Credit 1-4. Selected topics in an identified field of design communication and/or electronic media. May be repeated for credit.

VIZA 691 Research. (0-23). Credit 23. Research for and preparation of thesis. Prerequisite: Approval of instructor.

Faculty

Robin Abrams, AIA, Ph.D. (The University of Sheffield, England) — Assistant Professor.

Urban design, housing, site design, neighborhood preservation, participatory planning process, sustainable community design.

Ergun Akleman, Ph.D. (Georgia Institute of Technology) — Assistant Professor.

Computer graphics, computer-aided geometric design, visualization, animation, three-dimensional graphics and realism, simulation and modeling, mathematics and computing.

Richard R. Davison, Jr., M.F.A. (Washington University) — Associate Professor.

Design communication, drawing, painting.

Frances E. Downing, Ph.D. (University of Wisconsin) — Associate Professor.

Architectural design, design process, design theory, design pedagogy, epistemology.

David C. Ekroth, AIA, M. Arch. (University of Pennsylvania) — Associate Professor.

Architectural and urban design, design theory, housing.

John G. Fairey, M.F.A. (University of Pennsylvania) — Professor.

Design foundations, plant explorer.

John O. Greer, FAIA, M. Arch. (Texas A&M University) — Professor, Holder of the Wallie E. Scott, Jr. Professorship in Architectural Practice and Management.

Architectural practice in the business, legal, and political environment.

Jeff S. Haberl, Ph.D., P.E. (University of Colorado) — Associate Professor.

HVAC lighting design, energy conservation savings measurement techniques, metering and monitoring equipment, calibrated building energy simulations, building energy data visualization, on-line diagnostics for HVAC equipment, solar energy heating and cooling systems, solar energy measurements.

Augustus C. Hamblett, M. Hist. Arch. (University of Virginia) — Associate Professor.

Architectural design, Greek revival architecture, the American house.

Rodney C. Hill, AIA, M. Arch. (University of California, Berkeley) — Professor, Associate Dean for Student Services.

Architectural design, design methodology, design psychology-creativity, sculpture, future studies.

Karen E. Hillier-Woodfin, M.F.A. (University of Illinois) — Professor.

Photography, video, digital imaging, experimental media.

Donald H. House, Ph.D. (University of Massachusetts) — Associate Professor.

Science of computer graphics, physically-based modeling, particle systems, computational vision.

Joseph M. Hutchinson, M.A. (University of Denver) — Professor.

Modern architectural and art history, painting, design theory, the avant-garde in Europe and America.

Robert E. Johnson, M. Arch. (Syracuse University) — Professor, CRS Center Director.

Professional Practice and Management (with a special focus on information technology, facility management,

project delivery, design management and building economics).

Susan M. Kirchman, M.F.A. (University of Iowa) — Associate Professor.

Photography, computer graphics, interactive electronic environments and systems.

Carol La Fayette, M.F.A., (SUNY Buffalo) — Assistant Professor. Conceptual and technical paradigm shifts in the visual arts relative to critical theory and digital production.

Terry R. Larsen, M.S. (Cornell University) — Associate Professor.

Visualization, programming, computer-aided design systems, architectural design.

Gerald L. Maffei, AIA, M. Arch. (University of California, Berkeley) — Professor.

Architectural and urban design, design methodology, design pedagogy, building construction, industrialized construction, furniture design and construction, vernacular building design.

George J. Mann, AIA, M.S. Arch. (Columbia University) — Professor, Holder of the Ronald L. Skaggs Endowed Professorship in Health Facilities Design.

Architectural design, health care facilities planning, programming.

Thomas L. McKittrick, FAIA, M. Arch. (Texas A&M University) — Professor, Interim Department Head.

Architectural design, educational facilities design, programming, interior architecture, architectural practice.

Valerian Miranda, Ph.D. (Texas A&M University) — Assistant Professor.

Architectural design, architectural computing, imaging, design process, energy optimization.

Frederic I. Parke, Ph.D. (University of Utah) — Visualization Lab Director, Professor.

Computer based systems, computer graphics, and visualization.

Vivian L. Paul, Ph.D. (University of California, Berkeley) — Professor, Associate Dean for International Programs.

Architectural history, gothic and medieval architecture, history of construction technology, computer applications to the study of historic architecture.

Dale C. Perry, Ph.D. (University of California, Berkeley) — Professor, Holder of the Rodney L. Dockery Professorship in Housing and the Homeless.

Structural design, wind engineering, structural safety and reliability, affordable housing.

Duszan Poniz, D. Tech. Sc. (University of Warsaw) — Associate Professor.

Design foundations, building systems, structural concepts, design communication.

Malcolm W. F. Quantrill, KCLF, RIBA, Doc. Ing. Arch. (Technical University of Wroclaw) — Distinguished Professor.

Architectural history and theory, architectural and urban design, design diagnostics.

J. Thomas Regan, B.Arch. (Auburn University) — Dean, Professor.

Grad. Dip., The Architectural Association Graduate School of Architecture Association Graduate School of Architecture, London Design education, visual languages, and design methodology.

Robert J. Schiffhauer, M.F.A. (Yale University) — Associate Professor.
Design communication, painting, sculpture.

Andrew D. Seidel, Ph.D. (University of Michigan) — Professor.

Environmental design, planning methods and techniques, computer applications, the relationship between public policy and physical design.

Mardelle M. Shepley, D. Arch. (University of Michigan) — Assistant Professor.

Architectural design, social architecture, health care facility design, applied research, environmental psychology.

Louis G. Tassinary, Ph.D. (Dartmouth College) — Professor.

Psychophysiology of emotion, non-invasive physiological recording techniques, history of psychology, perception and cognition, social and environmental psychophysiology.

Roger S. Ulrich, Ph.D. (University of Michigan) — Professor, Associate Dean for Research.

Psychophysiology of emotion, non-invasive physiological recording techniques, the application of behavioral science research to planning and urban design.

Guillermo Vasquez de Valasco, Ph. D. (Technische Universiteit Delft, The Netherlands) — Associate Professor,

Coordinator, March Program.

Computer-aided architectural design, interactive multimedia, computer-based instructional materials.

Robert Warden, M.Arch. (Texas A&M University) — Associate Professor, Interim Assistant Department Head.
Aesthetic theory, construction documents, computer-aided design.

Ward V. Wells, M. Arch. (University of Oklahoma) — Associate Professor, Executive Associate Dean.

Architectural design, adaptive use, interior architecture, human factors, furniture design.

Charles W. White, Ph.D. (University of Chicago) — Associate Professor.
Architectural history, classical and near-eastern architecture and archaeology.

David G. Woodcock, FAIA, Dip. T.P. (University of Manchester-England) — Professor.

Historic preservation, preservation technology, urban design and planning, architectural pedagogy, interdisciplinary learning.

Bryan/College Station, Texas

Rich in tradition and history, Bryan-College Station truly is smack in the heart of Texas. The twin cities are nestled in the lush Brazos Valley, conveniently located at the heart of the Dallas/Fort Worth, Houston and Austin/San Antonio triangle and easily accessible from all parts of the state. Residents boast of big-city conveniences with small-town warmth and hospitality.

The George Bush Presidential Library Center on the Texas A&M campus in College Station is now open. The library and museum contains archives and artifacts from Bush's political career. Also included in the center are the Bush School of Government and Public Leadership Studies and the International Center.

Bryan was established in 1859 in honor of William Joel Bryan, nephew of Texas pioneer Stephen F. Austin. Incorporated

in 1871, Bryan prospered with its robust agricultural resources and a railway system completed in 1876. That same year, the State of Texas established the Agricultural and Mechanical College of Texas just south of Bryan. Bryan is home to the Carnegie Library, donated by philanthropist Andrew Carnegie. Only 12 of the 34 original library buildings still exist today.

College Station, Bryan's sister city, was planned as a model community by college professors when the college could no longer accommodate their living needs on campus. College Station, named as a railway stop by the Postal Service in 1877, burgeoned in the 1960s when the college opened its doors to women and became Texas A&M University.

The cities' contrasting styles and variety of attractions have created a harmoni-

ous neighborly balance for visitors.

Bryan has an impressive collection of beautiful homes and business sites with historical and architectural significance in its East Side Historical District and its revitalized downtown area, alongside fine restaurants and community theaters. College Station is an energetic and progressive city with 924 acres of parks and a statewide reputation for quality athletic events. It has grown up alongside Texas A&M University, a major education and research institution.

Today the twin cities form a delightful community to visit and a business and tourism destination with a unique blend of cultural opportunities and warm hospitality.

