College of Architecture and Environmental Design

John Meunier, M.Arch.
Dean

PURPOSE

The practice of architecture and environmental design is the culturally responsible shaping of our environment—from the scale of the cities in which we live to the buildings and interiors we inhabit and the artifacts and products we use. What we design must be durable, useful, beautiful, appropriate to its context, and not a waste of resources, energy, or materials. Designing our environment is an art, a technology, and a social science that has a history as long as human culture. The goals of the faculty include offering students an education that becomes the basis for life-long growth and improvement as professionals, advancing the discipline in both theory and practice, and improving the quality of the environment by making the expertise and knowledge of the faculty available to other professionals and to the public.

ORGANIZATION

Academic Organization. The college is composed of three academic units:

School of Architecture
School of Design
School of Planning and Landscape Architecture

Administration of the college is the responsibility of the dean, who in turn is responsible to the president of the university through the senior vice president and provost.

College Facilities. All the college's programs are housed in a single complex. Facilities include the Architecture and Environmental Design Library; computer laboratories; design studios; the Gallery of Design; lecture and seminar rooms; the Media Center; offices for faculty, the administration, and student organizations; the shop; the slide collection; and technology laboratories. The bridge between the original building and the expansion places the college's review and display space at the heart of the complex.

Architecture and Environmental Design Library. As a branch of the university libraries, the Architecture and Environmental Design Library provides easy access to books, periodicals, and reference materials for students, faculty, and the professional community. The collection includes the Architecture Library, with approximately 35,000 volumes, and special research collections on the work of Blaine Drake, Victor Olgyay, Paolo Soleri, Calvin Straub, and Frank Lloyd Wright.

Gallery of Design. The Gallery of Design is one of eight university galleries and museums. It provides space for traveling exhibitions and exhibitions of student and faculty work.

Special Facilities. College programs are supplemented by several kinds of special laboratories. New spaces include the computer-aided design and graphics lab, the high-bay research lab, the lighting lab, the solar research lab, the solar roofdeck work area, an extensive shop equipped to handle wood, plastic, and metal, the Materials Resource Facility, space for the college's community outreach activities and programs of the Herberger Center for Design Excellence, and the Joint Urban Design Program, which also has a studio at the ASU Downtown Center. The college's photographic lab and darkroom provide high-quality equipment and space for research projects. The Media Center includes traditional graphics and audiovisual equipment as well as portable gear. The slide collection, with more than 100,000 images, is available for instructional use, and the college maintains an array of materials testing equipment. The college is also home to a computer site managed by Computing and Network Consulting Services.

ADMISSION

Lower-Division Programs. A new or transfer student who has been admitted to the university and has selected a college major is admitted to the lower-division program of his or her choice. A separate application procedure is required for entry to upper-division programs and graduate programs. Acceptance into lower-division programs does not guarantee acceptance to upper-division programs. Acceptance into lower-division programs requires a TOEFL score of 500 or higher for international students whose native language is not English.

Transfer Credits. While the university accepts credits transferred from other accredited institutions, transfer credits are not applied to specific degree programs until reviewed and accepted by the appropriate academic

units. Transfer course work must be equivalent in both content and level of offering. In addition, a review of samples of work (portfolio format) from previous studio classes is required. Change of major transfers into the College of Architecture and Environmental Design, or one of its program areas, requires a minimum 2.50 cumulative GPA.

Upper-Division Programs. Admission to upper-division programs is competitive. Consult requirements of each major for details. Students applying to more than one program must make a separate application to each and must submit separate portfolios. Students not enrolled at ASU when they apply to upper-division programs must also make a separate application to the university. Students not admitted to the upper division are not dismissed from the university and may reapply or may transfer to other programs. Students who plan to reapply should contact a college academic advisor. Transfers into upper-division programs are considered only if vacancies occur, and such transfers are limited to students with equivalent course work who are competitive with continuing students. Acceptance into some upper-division programs requires a TOEFL score of 550 or higher for international students whose native language is not English.

Graduate Programs. For admission to the graduate programs in the College of Architecture and Environmental Design, see requirements and procedures under the respective academic units in this catalog and in the *Graduate Catalog.* Students must make separate applications and be admitted by both the Graduate College and the academic unit administering the degree program selected.

ADVISING

While the college and its academic units provide academic advising, *it is ultimately the responsibility of each student to fulfill academic and program requirements*. Advising and record keeping for lower-division programs are the responsibility of a college academic advisor (located in ARCH 141). Records for upper-division program students are kept in the appropriate academic units, and advising is by the faculty and the head of the academic unit. General career advising is available from all faculty members. Administration of program requirements is the responsibility of the head of the academic unit and the dean.

Appeals Procedures. Academic appeals and requests for variances are typically made first to the student's advisor and then, if necessary, to the head of the appropriate academic unit, the Governance and Grievance Committee, and, finally, the dean. A student who feels unjustly treated in academic or other matters relating to his or her career as a student may contact a college academic advisor or may take the grievance to the college ombudsperson.

DEGREES

Undergraduate. The college offers curricula for four- or five-year degree programs: the Bachelor of Science in Design degree, the Bachelor of Science degree in Environmental Resources, the Bachelor of Science in Landscape Architecture degree, and the Bachelor of Science in Planning degree. A student selects one of the majors within the respective academic units shown in the "College of Architecture and Environmental Design Degrees, Majors, and Concentrations" table, page 199.

Each undergraduate program is divided into a lower-division and an upper-division program. Completion of a lower-division program does not guarantee advancement to an upper-division program.

Graduate. The Graduate College awards the master's degree to candidates who have successfully completed graduate programs offered in this college. Five degrees are offered:

1. National Architectural Accrediting Board (NAAB)-accredited professional degree Master of Architecture (M.Arch.);
2. Planning Accreditation Board (PAB)-accredited professional degree Master of Environmental Planning (M.E.P.);
3. Master of Science (M.S.) degree with a major in Environmental Resources;
4. Master of Science (M.S.) degree with a major in Building Design; and
5. Master of Science in Design (M.S.D.) degree with majors in Industrial Design and Interior Design.

DEGREE REQUIREMENTS

Students seeking the Bachelor of Science in Design degree must satisfactorily complete a curriculum of a minimum of 120 to 150 semester hours, depending on the major. The Bachelor of Science in Planning degree requires 120 semester hours. The Bachelor of Science in Landscape Architecture degree requires 120 semester hours. The Bachelor of Science degree (with a major in Environmental Resources) requires 120 semester hours.

The total semester hours required for each major are as follows:

Architectural Studies	120
Design Science	120
Environmental Resources	120
Housing and Urban Development	120
Industrial Design	120
Interior Design	150
Landscape Architecture	120
Urban Planning	120

Graduation Requirements. In addition to fulfilling college and major requirements, students seeking a bachelor's degree must meet all university graduation requirements. See pages 66–70.

General Studies Requirement. All students enrolled in a baccalaureate degree program must satisfy a university requirement of a minimum of 35 semester hours of approved course work in General Studies, as described on pages 71–74. General Studies courses are listed on pages 74–94, in the course descriptions, in the *Schedule of Classes,* and in the *Summer Sessions Bulletin.*

College of Architecture and Environmental Design degree requirements supplement the General Studies requirement. Each curriculum offered by the college includes sufficient approved course work to fulfill the General Studies requirement.

Dean's List. Undergraduate students who earn 12 or more graded semester hours ("A," "B," "C," "D," or "E") during a semester in residence at ASU with a GPA of 3.50 or better are eligible for the Dean's List. A notation of achieving the distinction of being listed on the Dean's List appears on the final grade report for that semester.

College of Architecture and Environmental Design
Degrees, Majors, and Concentrations

Major	Degree	Administered by
Baccalaureate Degrees		
Architectural Studies	B.S.D.	School of Architecture
Design Science*	B.S.D.	School of Design
Environmental Resources Concentration: natural resource management	B.S.	School of Planning and Landscape Architecture
Housing and Urban Development	B.S.D.	School of Planning and Landscape Architecture
Industrial Design	B.S.D.	School of Design
Interior Design	B.S.D.	School of Design
Landscape Architecture	B.S.L.A.	School of Planning and Landscape Architecture
Urban Planning	B.S.P.	School of Planning and Landscape Architecture
Graduate Degrees		
Architecture	M.Arch.	School of Architecture
Building Design Concentrations: computer-aided design, energy performance and climate responsive architecture, facilities development and management	M.S.	School of Architecture
Environmental Design and Planning	Ph.D.	College of Architecture and Environmental Design
Environmental Planning Concentration: urban planning	M.E.P.	School of Planning and Landscape Architecture
Environmental Resources	M.S.	School of Planning and Landscape Architecture
Industrial Design Concentrations: design methodology, theory, and criticism; facilities planning and management; human factors in design	M.S.D.	School of Design
Interior Design Concentrations: design methodology, theory, and criticism; facilities planning and management; human factors in design	M.S.D.	School of Design

* Applications for this program are not being accepted at this time.

Special Honors at Graduation. At the time of graduation, students with academic distinction are awarded the respective designation *cum laude, magna cum laude,* or *summa cum laude*. Also see university requirements for graduation with academic recognition, page 70.

ACADEMIC STANDARDS

Lower-Division Retention Standards. A student in one of the college's lower-division programs is placed on probation when he or she fails to maintain a cumulative GPA of 2.00. Students on probation must observe rules or limitations the college imposes on their probation as a condition of retention. If, after one semester on probation, the overall GPA is not at least a 2.00 and the conditions of probation have not been met, the student is disqualified for a minimum of two full academic semesters. Appeals may be made to the college Governance and Grievance Committee. Also see university retention standards, pages 63–64.

Upper-Division Retention Standards. Students in upper-division programs are placed on probation when they fail to meet *any* of the following requirements:

1. failure, incomplete, or withdrawal from any required course;
2. a semester GPA below 3.00;
3. a grade of "D" or "E" in a design studio or a design laboratory; or
4. violation of the college *Code of Student Responsibilities* or any admission agreement.

Students on probation must observe rules or limitations that the college or academic unit places on their probation as a condition of continuation. Students may be removed from a program (but not necessarily the university) if

NOTE: For the General Studies requirement, codes (such as L1, N3, C, and H), and courses, see pages 71–94. For graduation requirements, see pages 66–70. Omnibus courses are offered that are not listed in the catalog; see pages 44–45.

1. the requirements imposed are not met or the probationary semester GPA is below 3.00 after one semester on probation;
2. failures or withdrawals in required courses are not resolved at the next offering of the course;
3. failures or withdrawals from required sequential courses are not resolved; or
4. incompletes in required sequential courses are not completed before the first day of class of the next semester.

A student removed from a program is not guaranteed reinstatement in the program even if probation requirements or requirements placed on readmission are fulfilled. Appeals may be made first to the appropriate academic unit and, if necessary, to the college Governance and Grievance Committee. Also see university retention standards, pages 63–64.

Incompletes. It is the student's responsibility to contact the instructor regarding the process of requesting and fulfilling an incomplete. Tardiness in contacting the instructor may result in a failing grade. Students must obtain an official "Request for Grade of Incomplete" form from their academic units. The completed form must include a justification, a listing of requirements that have not been fulfilled, and a proposed schedule of completion. The instructor reviews the request, proposes modifications if necessary, and submits a copy of the request to the appropriate program head (for upper-division students) or a college academic advisor (for lower-division students). An incomplete in an upper-division course that is a prerequisite for sequential courses automatically places the student on probation and denies enrollment in subsequent courses. Also see university requirements on incompletes, page 60.

Withdrawals. University withdrawal regulations apply to lower-division courses. In addition, because the college's upper-division curricula are modular and sequential and because space in the programs is limited, a student is expected to progress through the curriculum with his or her class. Withdrawal from a required upper-division course automatically places a student on probation. Withdrawal from a required upper-division course in a required sequence automatically removes the student from the program beginning the subsequent semester. Also see university requirements on withdrawals, page 61.

Credit/No Credit. The only courses accepted toward graduation with a grade of pass/fail or credit/no credit are internships and field studies.

Foreign Study. The College of Architecture and Environmental Design maintains active communications with several foreign institutions offering professional course work similar to the programs of the college. This opportunity is available for students who wish to pursue professional studies at a foreign institution in lieu of resident course work for up to one academic year. Any interested student is encouraged to inform the head of his or her academic unit at the earliest possible date of any intentions for foreign study.

Exchange programs currently exist with the Stuttgart University, Germany; Wageningen Agricultural University, the Netherlands; the University of Valladolid, Spain; the University of British Columbia, Canada; and the Autonomous University of Guadalajara, Mexico. Foreign study programs in France, Italy, and Spain and summer off-campus courses are offered by the School of Architecture. The School of Planning and Landscape Architecture

offers a summer landscape planning course in Europe.

Students are also encouraged to consider foreign travel for either a semester or an entire academic year. A leave of absence must be requested for foreign study and foreign travel. Each academic unit reserves the right to evaluate the content and the student's competency in each of the courses completed at foreign institutions.

Internships. Upper-division students in the college are required to complete an internship program during the summer, normally between the third and fourth years of study. In the Environmental Resources degree program the internship is offered as an elective and is not required.

Code of Student Responsibility. The purpose of this code is to promulgate standards of conduct for students of the College of Architecture and Environmental Design and to establish procedures for reviewing violations. Students are expected to support and maintain the highest professional standards with regard to their individual conduct and their personal and common environments in the college. Copies of the *Code of Student Responsibilities* are available from the Office of the Dean and a college academic advisor.

Attendance. Attendance is expected at all classes, laboratories, and seminars and is a criterion for evaluating performance. Absences and missing work due to absences may result in failure of a course or academic probation. A student may not be excused from attending a class except for medical reasons or other serious personal conditions beyond his or her control. Requests for special consideration must be submitted in writing to the instructor. If accepted, a student may be allowed to take a late or special examination or to submit missing work. Tardiness in contacting the instructor is cause for denying acceptance. See university policy regarding religious holidays, page 1.

Employment. It is difficult for students in professional programs to carry part-time employment while in school. Acceptance to any of the college's upper-division programs presumes a commitment of a minimum of eight hours a day for professional studies. Prior work experience is not a requirement for admission to upper-division programs.

Retention of Student Work. The college reserves the right to retain any or all projects or work submitted to meet course requirements for the college's future instructional, publication, and exhibition use.

Student Leave of Absence. Upper-division students who withdraw from classes or do not continue sequentially in enrollment must request both a leave of absence and readmission in writing from the head of the appropriate academic unit. Leaves of absence are for one-year increments and may be approved for personal reasons, travel, work, or additional study in other disciplines. A student on leave must make the written request for readmission before May 1 for the fall semester of the year of return or before November 1 for the spring semester so that a space may be reserved. Failure to request a leave of absence may result in removal from the program.

SPECIAL PROGRAMS

The college and its academic units regularly sponsor lecture series, symposia, and exhibits. In addition, faculty and students attend regional and national meetings of educators and professionals. Academic units sponsor student awards programs and regularly invite professionals and critics to reviews of student projects. The college also participates with the University Honors College, offering courses accepted in that college.

GENERAL INFORMATION

Accreditation. See pages 14–17 for information on the accreditation of programs in the College of Architecture and Environmental Design.

College of Architecture and Environmental Design Alumni Association. The College of Architecture and Environmental Design Alumni Association encourages graduates to contribute to the college by acting as liaisons among the college community, students, and practicing professionals. The college also calls on the members of the Architecture Guild of Arizona State, the Arizona Design Institute, the Council for Design Excellence, and the Planning Advisory Committee for advice and to promote the goals of the college.

Council for Design Excellence. The Council for Design Excellence has been created to consolidate a partnership between the College of Architecture and Environmental Design and key community leaders who share a vital interest in the development of high quality in the built environment of the Phoenix metropolitan area. By joining together professionals, business and civic leaders, students, and faculty in a common pursuit of design excellence, the council seeks to make a profound difference in the quality of life.

Affiliations. See pages 14–17 for information on affiliations maintained by the college.

Student Professional Associations. The purpose of the student associations is to assist students with the transition into professional life and to acquaint them with the profession relating to their program of study. These include the following associations:

- American Institute of Architecture Students
- College of Architecture and Environmental Design Pre-Studies Organization
- Student Association of the College of Architecture and Environmental Design
- Student Association of Interior Designers (ASID, IDLA, IFDA, IFMA, IIDA)
- Student Chapter/American Planning Association
- Student Chapter/American Society of Landscape Architects
- Student Chapter/Industrial Designers Society of America
- Student Chapter/Society for Range Management
- Student Chapter/Soil and Water Conservation Society
- Student Chapter/Wildlife Society
- Women in Architecture

School of Architecture

Ron McCoy
Director
(AED 162D) 602/965–3536

REGENTS' PROFESSOR
COOK

PROFESSORS
BOYLE, EL DIASTY, McCOY, McSHEFFREY, MEUNIER, PETERSON, RAPP, SCHEATZLE, UNDERHILL

RESEARCH PROFESSOR
JONES

ASSOCIATE PROFESSORS
LOOPE, McINTOSH, OZEL, SHEYDAYI, UNDERWOOD, ZYGAS

ASSISTANT PROFESSORS
BERTELSEN, BILN, HARDIN, HARTMAN, INABA, KROLOFF, SPELLMAN, WOOLSEY

PROFESSORS EMERITI
CHRISTENSEN, ELLNER, HINSHAW, JAKOB, OLIVER, RUMMEL, STRAUB, WHIFFEN

PURPOSE

The architecture program at ASU offers an integrated curriculum of professional courses and focuses on the design laboratory. The program reflects an awareness of the complex factors affecting the quality of the built environment. The program seeks through scholarship, teaching, research, design, and community service to develop the discipline and the knowledge necessary to address the important environmental and design issues faced by society.

In addition to developing knowledge and skills in architectural design, building technology, and professional practice, students are encouraged to select electives from a broad range of approved courses both within the college and across the university. These electives may be selected to devise a minor, to further professional study, or in some other fashion to enrich the student's academic experience.

ORGANIZATION

The School of Architecture's program is organized by the faculty under the direction and administration of the director and standing committees of the faculty.

DEGREES AND MAJORS

The faculty of the School of Architecture offer three degrees: the Bachelor of Science in Design with a major in Architectural Studies, the Master of Architecture, and the Master of Science with a major in Building Design.

The program in architecture culminates with the professional degree Master of Architecture, which is accredited by the National Architectural Accrediting Board (NAAB). Completion of the program is intended to take six years.

Admission to the professional program in architecture is competitive and begins after completion of lower-division requirements (see "Admission" below, and "Degree Requirements," page 204). The professional program includes two years of upper-division study leading to the Bachelor of Science in Design (with a major in Architectural Studies) and two years of graduate study leading to the Master of Architecture (see "Upper-Division Professional Program" below).

In cooperation with the University Honors College, the school offers a special honors curriculum for students with University Honors College standing. Consult the advising officers in the school for information.

In cooperation with the College of Business, a dual degree program, Master of Architecture/Master of Business Administration, has been established. Students contemplating dual matriculation should see an advisor for help in selecting electives appropriate to this program at the undergraduate level.

The Master of Science degree with a major in Building Design provides opportunities for advanced and specialized studies and research in building science. Concentrations include building energy performance, climate responsive architecture, computer-aided design, energy simulation analysis, and facilities development and management. Students entering this program typically have the professional Bachelor of Architecture or Master of Architecture degrees or undergraduate degrees in areas such as physics, engineering, or design. For more information, see the *Graduate Catalog.*

ADMISSION

Lower-Division Program. New and transfer students who have been admitted to the university and who have selected Architectural Studies are admitted to the lower-division architecture program without separate application to the School of Architecture. Completion of lower-division requirements does not ensure acceptance to the upper-division professional program.

Transfer credits for the lower-division program are reviewed by the college faculty. To be admissible to this curriculum, transfer courses must be equivalent in both content and level of offering. A review of samples of work is required for studio classes. Consult a college academic advisor for an appointment.

Entering lower-division students who are not prepared to enroll in some of the required courses are required to complete additional university course work. These additional prerequisite courses do not apply to the Bachelor of Science in Design degree requirements.

Upper-Division Professional Program. Admission to the upper-division professional program is competitive and limited by available resources. Admission is awarded to those applicants demonstrating the highest promise for professional success, including evidence of ability and the prospect for significant public service.

Transfer students who have completed the equivalent required lower-division course work may apply to the upper-division program. Prior attendance at ASU is not required for application to the upper-division program. Applicants who already hold a bachelor's degree in another field should apply to the 3+ year Master of Architecture degree program. See the *Graduate Catalog* for more information.

To be eligible for admission to the upper-division program, the following is required:

1. admission to ASU (note that application and admission to ASU are separate from application and admission to the upper-division program);
2. completion of lower-division requirements (a minimum of 62 semester hours) or equivalents as approved by a college academic advisor and the faculty of the school;
3. a minimum university cumulative GPA of 3.00 as well as a 3.00 GPA based only on the required lower-division courses or equivalents; and

4. submission of a portfolio (for detailed information about this requirement, see "Portfolio Format Requirements" below).

In an unusual circumstance, when the admission standard deficiency is slight, written evidence of extenuating circumstances is convincing, and promise for success is evident, a student may be granted admission to the upper division on a *provisional* basis.

Students not admitted to the upper-division program are not dismissed from the school and may reapply or may transfer to other programs. Students who intend to reapply should meet with a college academic advisor.

Applications for transfer into the upper-division professional program are considered only if vacancies occur. Transfer applicants must demonstrate that equivalent course work has been completed, and applicants must be academically competitive with continuing students.

Students who successfully complete the upper-division requirements receive the Bachelor of Science in Design degree (B.S.D.) with a major in Architectural Studies. This is not a professional degree. To complete the professional architecture program, students must attain the NAAB-accredited Master of Architecture degree. Students who receive the B.S.D. are eligible to apply for the graduate program and should consult the *Graduate Catalog* for proper application procedures. This application process is competitive and based on a thorough review of a student's undergraduate preparation and performance.

Students with the four-year Bachelor of Science in Design degree (with a major in Architectural Studies or an equivalent degree from another school that offers an accredited professional degree in architecture) should apply directly to the graduate program.

APPLICATION TO UPPER-DIVISION PROGRAMS

Upper-Division Application Procedures. Students should write to a college academic advisor for the application form well in advance of the application deadline. For more information on portfolios, ask for a copy of the *Portfolio Seminar* brochure from a college academic advisor. The following dates and procedures are for students applying to 1997–98 upper-division programs.

Upper-Division Application Deadlines. *April 11, 1997.* Portfolio and application documents are due in the school office by 5:00 P.M.

June 6, 1997. If the spring 1997 semester includes transfer course work (i.e., course work taken at an institution other than ASU), a student must submit his or her transcripts to the school no later than June 6. These transcripts may be unofficial copies. A second set of official transcripts must be sent to the university Undergraduate Admissions office. Application is not complete until the university receives official transcripts for transfer course work. For those transfer students whose academic term ends in June rather than May, this deadline may be extended upon the written request of the applicant.

July 1, 1997. Acceptance notices are mailed no later than July 1.

Return of Letter of Acceptance. A signed receipt of acceptance of admission must be received by the school by the date indicated on the Notice of Acceptance. Alternates may be accepted at a later date if space becomes available.

Matriculation. An accepted student is expected to begin his or her upper-division professional program at the beginning of the immediate fall term. There is no spring admission to the upper division.

Portfolio Format Requirements. Each applicant is responsible for obtaining the following documents and including them in the portfolio. Application materials are submitted at one time in a presentation binder (portfolio) with plastic sleeves (8.5" x 11" format only). The student's name must be affixed to the outside. Items must appear in the following order:

Page 1. The application form should be completely filled out with the first page visible. Application forms are available from the college academic advising office.

Page 2. The second page of the application should be visible.

Page 3. Application Essay.

Page 4. All high school transcripts should be put into one sleeve.

Page 5. All college transcripts for both ASU and transfer work should be included through the fall 1996 semester. Copies are acceptable. An academic advisor forwards 1997 ASU transcripts. (Applicants wishing to transfer spring semester 1997 work are responsible for submitting these transcripts by June 12 so that they may be added to their portfolios. The student is also responsible for getting an official transfer transcript sent directly to the Office of the Registrar.)

Page 6. A certificate of admission is necessary only for those students who have been newly admitted for fall 1997 and who are applying directly into an upper-division program. The certificate is not required for students currently attending ASU.

Following Pages (Usually 10–20 Sheets). Students should present work sufficient to demonstrate the depth and breadth of their creative activity. This work should include (but is not limited to) examples of two- and three-dimensional design and graphics. Each project should be clearly identified (course, length of project, etc.), with a concise accompanying description of the assignment.

Students are encouraged to include additional materials, written or pictorial, that provide additional evidence of skills and abilities and of the aptitude and commitment to the major. When any work submitted is not completely original, the source must be given. When work is of a team nature, the applicant's role should be clearly indicated. Original examples or slides must not be submitted. All examples must be photographs or other reproduction graphic media.

Return of Portfolios. Application documents (pages 1 through 6) remain the property of the College of Architecture and Environmental Design. However, the remaining portfolio is returned after the admissions review, provided the applicant encloses a self-addressed return mailer with sufficient prepaid postage. Portfolios may be claimed in

person after July 1, 1997. If the applicant provides written permission, another person may claim the portfolio. After one year, unclaimed portfolios are discarded. While care is taken in handling the portfolios, no liability for lost or damaged materials is assumed by the college or school.

ADVISING

Advising for the lower-division curriculum is through the college academic advising office. Advising for upper-division students is by assigned faculty advisors and administrative personnel from the School of Architecture.

DEGREE REQUIREMENTS

The Bachelor of Science in Design degree with a major in Architectural Studies requires a minimum of 120 hours of course work. Most lower-division students pursue option A; however, those who intend eventually to seek an advanced degree in either engineering or building science are encouraged to fulfill the requirements outlined in option B.

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See pages 71–94 for the General Studies requirement and a list of approved courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See pages 66–70.

The accredited professional degree Master of Architecture requires an additional 56 hours of approved graduate-level course work. For more information, consult the *Graduate Catalog.*

Architectural Studies—B.S.D.
Lower-Division Requirements
Option A[1]
Freshman Year

Fall (15)

APH	100	Introduction to Environmental Design *HU, G/H*	3
ENG	101	First-Year Composition	3
PHI	103	Principles of Sound Reasoning *L1/HU* or approved philosophy elective or ECN 112 Microeconomic Principles *SB* (3)	3
SB elective			3
Approved N1 elective			3

Spring (15)

ADE	120	Design Fundamentals I[2]	3
ENG	102	First-Year Composition	3
MAT	210	Brief Calculus *N1*	3
HU elective			3
Approved elective			3

Sophomore Year

Fall (16)

ADE	221	Design Fundamentals II[2]	3
APH	200	Introduction to Architecture *HU, G*	3
PHY	111	General Physics *S1/S2*[3]	3
PHY	113	General Physics Laboratory *S1/S2*[3]	1
L1 elective[2]			3
Approved elective			3

Spring (16)

ADE	222	Design Fundamentals III[2]	3
ANP	236	Introduction to Computer Modeling *N3*	3
PHY	112	General Physics *S1/S2*[4]	3
PHY	114	General Physics Laboratory *S1/S2*[4]	1
SB elective			3
Approved elective			3
Lower-division total			62

[1] Transfer credits are reviewed by the college and evaluated for admissibility to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

[2] Portfolio review is required for transfer studio work. See a college academic advisor for an appointment.

[3] Both PHY 111 and 113 must be taken to secure S1 or S2 credit.

[4] Both PHY 112 and 114 must be taken to secure S1 or S2 credit.

Architectural Studies—B.S.D.
Lower-Division Requirements
Option B[1]

APH	100	Introduction to Environmental Design *HU, G/H*	3
APH	200	Introduction to Architecture *HU, G*	3
ECE	105	Introduction to Languages of Engineering	3
ECE	106	Introduction to Computer-Aided Engineering *N3*	3
ECN	112	Microeconomic Principles *SB* or ECN 111 Macroeconomic Principles *SB* (3) or approved business course	3
ENG	101, 102	First-Year Composition or ENG 105 Advanced First-Year Composition (3) plus an HU elective	6
MAT	274	Elementary Differential Equations	3
MAT	290	Calculus I *N1*	5
MAT	291	Calculus II	5
PHY	121	University Physics I: Mechanics *S1/S2*[2]	3
PHY	122	University Physics Laboratory I *S1/S2*[2]	1
PHY	131	University Physics II: Electricity and Magnetism *S1/S2*[3]	3
PHY	132	University Physics Laboratory II *S1/S2*[3]	1
Approved HU elective			3
Approved L1 elective			3
Approved SB elective			3

Option B Engineering Requirement (3)

ECE	210	Engineering Mechanics I: Statics	3

Studio Courses[4] (9)

ADE	120	Design Fundamentals I[4]	3
ADE	221	Design Fundamentals II	3
ADE	222	Design Fundamentals III	3
Lower-division total			63

[1] Transfer credits are reviewed by the college and evaluated for admissibility to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

[2] Both PHY 121 and 122 must be taken to secure S1 or S2 credit.

[3] Both PHY 131 and 132 must be taken to secure S1 or S2 credit.

[4] Portfolio review is required for transfer studio work. See a college academic advisor for an appointment.

ECE 312, 313, and 383 may be taken at the upper-division level as approved electives and are not required before admission to the upper-division program. However, conflicts in course time can be avoided by taking them before applying to the upper division.

Architectural Studies—B.S.D.
Upper-Division
Professional Program Requirements
Junior Year

Fall (15)

ADE	321	Architectural Studio I	4
APH	313	History of Western Architecture I[1] *HU*	3
ATE	353	Architectural Construction	3
AVC	301	Architectural Communication	2
Approved elective			3

Spring (14)

ADE	322	Architectural Studio II	5
ANP	331	Analysis and Programming	3
APH	314	History of Western Architecture II[1]	3
ATE	361	Building Structures I[2]	3

Summer (1)
ARP 484 Clinical Internship 1

Senior Year

Fall (14)
ADE 421 Architectural Studio III 5
ATE 451 Building Systems I 3
ATE 462 Building Structures II[2] 3
Professional elective.....3

Spring (14)
ADE 422 Architectural Studio IV 5
ATE 452 Building Systems II 3
Architectural history elective *L2/HU* 3
Professional elective.....3

Upper-division total 58
B.S.D. minimum total 120

[1] These courses may be completed before admission to the upper division. If already completed, a student may substitute an approved elective.

[2] Approved substitute courses are accepted from the College of Engineering and Applied Sciences for option B students.

Master of Architecture
Graduate Division
Professional Program Requirements

Fifth Year

Fall (14)
ADE 521 Advanced Architectural Studio I 5
ATE 553 Building Systems III.....3
ATE 563 Building Structures III.....3
Professional elective.....3

Spring (14)
AAD 551 Architectural Management I.....3
ADE 522 Advanced Architectural Studio II.....5
APH 681 Architectural Theory 3
Professional elective.....3

Sixth Year

Fall (14)
AAD 552 Architectural Management II 3
ADE 621 Advanced Architectural Studio III 5
ANP 681 Project Development 3
Professional elective.....3

Spring (14)
AAD 681 Professional Seminar: Capstone 3
ADE 622 Advanced Architectural Studio IV 5
Approved elective.....3
Professional elective.....3

Graduate division total 56

COURSES

Subject matter within the school is categorized in the following instructional areas:

Architectural Administration and Management. AAD courses focus on the organizational and management aspects of architectural practice, including management coordination, administrative procedures, ethics, legal constraints, and the economics of practice.

Architectural Design and Technology Studios. ADE courses require the synthesis of knowledge and understanding gained from other course work and develop an understanding of design theory and design skill through a series of comprehensive design projects. Students apply analytical methods, compare alternative solutions, and develop sophisticated technical and conceptual results.

Architectural Philosophy and History. APH courses develop an understanding of architecture as both a determinant and a consequence of culture, technology, needs, and behavior in the past and present. Studies are concerned with the theory as well as the rationale behind methods and results of design and construction. Case studies are both American and international.

Architectural Technology. ATE courses develop knowledge of the technical determinants, resources, and processes of architecture. These studies focus on the science and technology of design and construction, including materials, building systems, acoustics, lighting, structural systems, environmental control systems, computer applications to design and technology, and both passive and active solar systems. Emphasis is on measurable and quantifiable aspects.

Environmental Analysis and Programming. ANP courses develop the ability to analyze and program environmental and human factors as preconditions for architectural design using existing and emerging methods of evaluation and analysis.

Architectural Communication. AVC courses develop the student's understanding of communication theory as it applies to architectural design and practice as well as skills in drawing, graphics, photography, presentation design, and the design process.

Architecture Professional Studies. ARP courses provide students with off-campus opportunities, educational experience in group and individual studies relative to specific student interests, and faculty expertise, including summer internships and field trips.

The courses required in the upper-division and graduate levels of the professional program are not open to nonmajors and students not admitted to the upper-division program.

ARCHITECTURAL ADMINISTRATION AND MANAGEMENT

AAD 551 Architectural Management I. (3) S
Organizational, human performance, and market influences on architecture firms and projects. Readings, case studies, and analysis of managerial problems and solutions. Lecture, discussion. Prerequisite: graduate-level standing. Corequisite: ADE 522.

552 Architectural Management II. (3) F
Design delivery, coordination of construction documents, cost estimating, bidding and negotiations, construction observation, and post-construction services. Case studies. Lecture, discussion. Prerequisite: AAD 551. Corequisite: ADE 621.

553 Advanced Architectural Management. (3) A
Current issues in the business and practice of architecture. Financial management, project management, and design delivery strategies. Includes case studies. Lecture, discussion. Prerequisite: AAD 551 or instructor approval.

554 Advanced Construction Contract Administration. (3) N
Advanced topics and problems in construction contract administration. Prerequisite: AAD 552 or instructor approval.

555 Architect as Developer. (3) A
Development building, real estate, construction funding, land acquisition, and the sources for capital. Prerequisite: instructor approval.

558 Advanced Specifications and Cost Analysis. (3) N
Coordination of working drawings, construction specifications, and cost estimates. Emphasis on methods, office procedures, contract conditions, bonds, and bidding procedures. Prerequisite: instructor approval.

560 Contemporary Architectural Practice. (3) A
Advanced issues and directions in design delivery, firm and project management, global markets and expanding cultural responsibilities. Includes case studies. Seminar. Prerequisite: instructor approval.

681 Professional Seminar: Capstone. (3) S
Examination of ethical, political, social, economic, ecological, and cultural issues confronting the practice of architecture. Readings and case studies. Seminar. Prerequisite: AAD 552. Corequisite: ADE 622.

Omnibus Courses: See pages 44–45 for courses that may be offered.

ARCHITECTURAL DESIGN AND TECHNOLOGY STUDIOS

ADE 120 Design Fundamentals I. (3) F, S, SS
Development of visual literacy. Introduction to drawing and graphic representation as methods of seeing and problem solving. Studio. Prerequisite: major in College of Architecture and Environmental Design.

221 Design Fundamentals II. (3) F
Exercises in basic design, stressing creative problem-solving methods, principles of composition, and aesthetic evaluation. Development of vocabulary for environmental design. Lecture, studio. Pre- or corequisite: ADE 120.

222 Design Fundamentals III. (3) S
Application of design fundamentals with an emphasis on architectural issues. Lecture, studio. Prerequisites: ADE 221 with a grade of "C" or higher; APH 200.

321 Architectural Studio I. (4) F
Introductory building design problems. Emphasis on design process, communication methods, aesthetics, construction, and technology. Lecture, studio, and field trips. Prerequisite: admission to upper division. Corequisites: ATE 353; AVC 301.

322 Architectural Studio II. (5) S
Site and building design problems. Emphasis on programmatic and environmental determinants and building in natural and urban contexts. Lecture, studio, and field trips. Prerequisite: ADE 321. Corequisite: ANP 331.

421 Architectural Studio III. (5) F
Topical design problems of intermediate complexity, including interdisciplinary problems. Lecture, studio, and field trips. Prerequisites: ADE 322 and ARP 484 for Architectural Studies majors; permission of the school director for other majors in the college.

422 Architectural Studio IV. (5) S
Topical design problems of intermediate complexity, including interdisciplinary problems. Lecture, studio, and field trips. Prerequisite: ADE 322 for Architectural Studies majors; permission of the school director for other majors in the college.

510 Foundation Architectural Studio. (6) SS
Fundamentals of architectural design, methodology, visualization, and representation. Lecture, studio, and field trips. Prerequisite: admission to graduate program.

511 Core Architectural Studio I. (6) F
Application of design fundamentals in architectural problems, including construction, technology, programmatic and environmental determinants. Lecture, studio, and field trips. Prerequisites: ADE 510; APH 200, 509. Corequisite: ATE 353.

512 Core Architectural Studio II. (6) S
Application of architectural design fundamentals to increasingly complex problems, including specific sites and activities. Lecture, studio, and field trips. Prerequisite: ADE 511.

521 Advanced Architectural Studio I. (5) F
Design problems emphasizing theory, aesthetics, and tectonics as influences on architectural form. Lecture, studio, and field trips. Prerequisite: admission to graduate program.

522 Advanced Architectural Studio II. (5) S
Design problems emphasizing the comprehensive integration of building systems and technologies as influences on architectural form. Lecture, studio, and field trips. Corequisites: AAD 551; ADE 521.

621 Advanced Architectural Studio III. (5) F
Design problems emphasizing the urban context, planning issues, and urban design theory as influences on architectural form. Lecture, studio, and field trips. Corequisites: AAD 552; ADE 522; instructor approval.

622 Advanced Architectural Studio IV. (5) S
Individual, student-initiated project reflecting a culminating synthesis of architectural ideas. Studio. Prerequisites: AAD 681; ADE 621. Corequisite: AAD 681.

661 Bioclimatic Design Studio. (6) A
Sustainable architectural and site synthesis at a variety of scales emphasizing bioclimatic criteria and the use of passive and low-energy systems. Prerequisite: professional degree or instructor approval. Corequisite: ATE 558.

ENVIRONMENTAL ANALYSIS AND PROGRAMMING

ANP 236 Introduction to Computer Modeling. (3) F, S
Fundamentals of computer operation, geographic informations systems, geometric modeling of three-dimensional forms and rendering of light, mathematical modeling of processes using spreadsheets. Lab. Cross-listed as DSC/PUP 236. Prerequisite: major in the College of Architecture and Environmental Design. *General Studies: N3.*

331 Analysis and Programming. (3) S
Analysis of natural and human environmental determinants as the basis of the programming and design of the built environment. Lecture, studio. Corequisite: ADE 322.

431 Architectural Programming Methods. (3) N
Theory and methods of architectural programming including determinants of architecture, information gathering techniques, program preparation, and methods of evaluation. Prerequisite: professional-level standing.

475 Computer Programming in Architecture. (3) F, S
Computer programming for architectural problems and applications. Lecture, lab. Prerequisite: CSE 183 or equivalent.

477 Computer Applications to Design Problems. (3) F
Examination of generic microcomputer software in solving architectural design problems. Emphasis on the logic of problem formulation. Lecture, lab. Prerequisite: instructor approval.

530 Computer Graphics in Architecture. (3) A
Fundamentals of computer graphics programming in architecture, including graphics hardware, device independent packages, 2- and 3-dimensional transformations, and data structures. 2 hours lecture, 3 hours lab. Prerequisite: ANP 475 or instructor approval.

561 Architectural Information Processing Systems. (3) A
Applications of information processing systems to architectural problems. Analysis of computing tools with respect to assumptions and theories. Lecture, lab. Prerequisites: graduate standing; instructor approval.

562 Information Systems for Facilities Management. (3) N
Introduction to database design and implementation. Assessment of facility management problems from information system points of view. Seminar, lab. Prerequisites: ANP 477 or 561; graduate standing.

576 Community Housing. (3) N
History, practices, trends, and forms of housing; includes growth of public programs, national and local programs, zoning law, housing distribution, planning principles and policies, design review, standards, and private development practice.

577 Housing Environments. (3) A
Contemporary housing environments, housing types, and life styles as determined by user preference, density, development and property standards, cost, community and privacy, security, identity, movement, and the need for open space.

581 Urban Structure and Design. (3) F
The nature and dynamics of urbanization and its relationship to architecture and urban design, including growth, decay, socialization, planning processes, and visual perception. Case studies. Prerequisite: professional-level standing.

ARCHITECTURAL PHILOSOPHY AND HISTORY

APH 100 Introduction to Environmental Design. (3) F, S, SS
Survey of environmental design: includes historic examples and the theoretical, social, technical, and environmental forces that shape them. Cross-listed as DSC/PUP 100. *General studies: HU, G/H.*

200 Introduction to Architecture. (3) F
Survey of issues and polemics affecting current architectural theory and practice. Lecture, discussion. *General studies: HU, G.*

300 World Architecture I/Western Cultures. (3) F
Historical and contemporary built environments of Western civilizations: Mediterranean, Europe, and the Americas as manifestations of cultural history and responses to environmental determinants. Non-Architecture majors only. *General studies: HU, G/H.*

301 World Architecture II/Eastern Cultures. (3) S
Historical and contemporary built environments of Eastern civilizations: Mid-East, Central Asia, Far East, and South Pacific as manifestations of cultural history and responses to environmental determinants. *General studies: G.*

304 American Architecture. (3) N
Architecture in the United States from earliest colonial times to present. Non-Architecture majors only. *General studies: HU.*

305 Contemporary Architecture. (3) N
Europe and America from the foundations of the modern movement to the present. Non-Architecture majors only. *General studies: HU.*

313 History of Western Architecture I. (3) F
Representative buildings and sites with emphasis on their physical and social settings from antiquity through the Middle Ages. Prerequisite: junior standing or instructor approval. *General studies: HU.*

314 History of Western Architecture II. (3) S
Representative examples of architecture and urban design with emphasis on their social and historical contexts; from the Middle Ages to the present. Prerequisite: junior standing or instructor approval.

411 History of Landscape Architecture. (3) F
The physical record of human attitudes toward the land. Selected examples of ancient through contemporary landscape planning and design. Cross-listed as PLA 310. *General studies: H.*

414 History of the City. (3) F
The city from its ancient origins to the present day with emphasis on European and American cities during the last five centuries. Cross-listed as PUP 412.

441 Ancient Architecture. (3) N
Architecture of the ancient Mediterranean world with selective emphasis on major historical complexes and monumental sites. Prerequisite: APH 313. *General studies: HU.*

442 Preservation Planning. (3) F
Principles and practices in planning for preservation, conservation and neighborhood redevelopment. Emphasis on evaluation of historic resources. Off-campus field practicum required. Prerequisite: instructor approval.

443 Renaissance Architecture. (3) N
Selected examples of Renaissance architecture and urbanism with emphasis on their historical and cultural settings. Prerequisite: APH 314. *General studies: HU.*

444 Baroque Architecture. (3) N
Selected examples of Baroque architecture and urbanism with emphasis on relationships between architecture and other arts. Prerequisite: APH 314. *General studies: HU.*

446 20th-Century Architecture I. (3) F
Architecture in Europe and America from the foundations of the modern movement to the culmination of the international style. Prerequisite: major in college. *General studies: HU.*

447 20th-Century Architecture II. (3) S
Developments in architecture since the international style. Prerequisite: APH 446. *General studies: HU.*

509 Foundation Seminar. (3) SS
Historical, technical, theoretical, environmental, and professional issues in architecture. Lecture, seminar, field trips. Prerequisite: ADE 510.

511 Energy Environment Theory. (3) F
Solar and other energy sources in designed and natural environments; architectural, urban, and regional implications of strategies using other renewable resources.

681 Architectural Theory. (3) S
An examination of architectural theory. Emphasis on application of theory to practice. Seminar. Prerequisite: instructor approval.

682 Architectural Criticism. (3) F
An examination of architectural criticism, emphasizing specific methods of criticism and their application for aesthetic judgment. Seminar. Prerequisite: instructor approval.

683 Critical Regionalism. (3) N
Critical inquiry in cultural grounding the definition of place in architectural theory and practice. Lecture, field studies. Prerequisite: APH 446 or 447.

ARCHITECTURAL TECHNOLOGY

ATE 353 Architectural Construction. (3) F
Materials and methods of construction. Aesthetic, code, and cost considerations. Lecture, lab. Corequisite: ADE 321.

361 Building Structures I. (3) S
Introduction to load distribution on structures. Static analysis of determinant beams, trusses, arches, and rigid frames. Computer applications. Lecture, lab. Prerequisite: admission to upper division.

451 Building Systems I. (3) F
Principles of solar radiation, heat and moisture transfer, and environmental control systems as form influences. Energy conscious design. Lecture, lab. Prerequisite: admission to upper division.

452 Building Systems II. (3) S
Architectural design implications of heating, ventilation, and air conditioning systems. Principles of lighting, daylighting, and acoustics, and their applications. Lecture, lab. Prerequisite: ATE 451.

453 Advanced Architectural Construction. (3) N
Study of construction materials assembly and architectural detailing. Lecture, lab. Prerequisite: ATE 353.

462 Building Structures II. (3) F
Strength of materials. Stresses in beams and columns. Thermal effects on structures. Analysis, design, and detailing of wood structural systems. Lecture, lab. Prerequisite: ATE 361.

501 Introduction to Solar Energy. (3) N
Introduction to theoretical and practical aspects of use of solar radiation and nocturnal cooling for control of building environments.

521 Building Environmental Science. (3) F
Scientific principles relating to comfort and environmental control. Heat and moisture transfer. Solar/natural energies for heating, cooling, and lighting. Lecture, lab. Prerequisite: MAT 290 or equivalent.

522 Desert Habitation Technology. (3) N
Analysis of habitation approaches in nontechnological and technological societies arising from the nature of desert areas.

530 Daylighting Design. (3) S
Daylight analysis, availability, design sky measurements, modeling and simulation. Integration with passive heating, cooling, building design, and energy considerations. Lecture, lab.

533 Building Performance Simulation and Visualization. (3) S
Simulating, analyzing, and evaluating building energy, lighting, and acoustic systems using computer software packages. Lecture, lab.

534 Earth Sheltering. (3) S
Fundamentals of earth-atmosphere interaction, thermal and moisture effects, soil appraisal, underground passive techniques, comfort and energy efficiency. Lecture, lab.

550 Passive Cooling in Buildings. (3) N
Theory, analysis, and application of passive and low energy cooling systems for thermal comfort in buildings. Prerequisite: ATE 521.

551 Passive Heating in Buildings. (3) N
Theory, analysis, and application of passive and low energy heating systems for thermal comfort in buildings. Prerequisite: ATE 521.

552 Energy Parameters in Buildings. (3) N
Advanced modeling. Transient and multidimensional analysis of thermal and daylight performance using variable weather data. Prerequisite: ATE 551 or instructor approval.

553 Building Systems III. (3) F
Design and integration of building systems, including mechanical, electrical, plumbing, security, communications, fire protection, and transportation. Prerequisite: admission to upper division or instructor approval.

554 Building Energy Efficiency. (3) S
Impact of building design on energy performance. Climate responsiveness, operations dynamics, and subsystems integration in thermal comfort and efficiency. Prerequisite: ATE 452.

557 Construction Documents I. (3) S
Production of architectural working drawings; legal status, organization, layout, site survey plans, sections, elevations, details, schedules, and coordination. Lecture, Lab. Prerequisite: admission to upper division.

558 Bioclimatic Parameters. (3) S
Theory, analysis, and application of energy-related parameters of site, climate, human comfort, and building program for design synthesis.

560 Building Energy Analysis. (3) F
Computer simulation of building thermal behavior. Software review. Detailed study of selected simulation models using case study projects. Lab. Prerequisites: ANP 475 or 477; ATE 582.

561 Energy Analysis Techniques. (3) F
Mathematical models of building envelope and comfort conditioning systems as bases for optimization techniques. Prerequisite: ATE 560.

562 Experimental Evaluation. (3) A
Instrumentation, measurement and computational techniques for analysis of building components, and assessment of thermal and luminous performance. Prerequisite: ATE 521.

563 Building Structures III. (3) F
Analysis, design, and detailing of steel buildings and frames. Lateral analysis of small rigid and braced frame systems. Lecture, lab. Prerequisite: ATE 462 or equivalent.

564 Advanced Structures: Concrete. (3) A
Analysis, design, and detailing of concrete systems, considering continuity, multistory frames and shear walls, and lateral analysis. Computer application. Prerequisite: ATE 563 or instructor approval.

565 Advanced Structures: High Rise. (3) A
Developments in high-rise construction. Effects of wind and seismic forces. Preliminary analysis, design, and detailing considering code requirements. Lecture, lab. Prerequisite: ATE 563 or instructor approval.

582 Environmental Control Systems. (3) A
Heating, ventilation, and air-conditioning systems. Loads, psychrometrics, refrigeration cycle, air/water distribution, controls, energy performance standards, and utility rates. 2 hours lecture, 3 hours lab, field trips. Prerequisites: ATE 451 or 521.

ARCHITECTURAL COMMUNICATION

AVC 141 Design Graphics. (2) N
Orthographic, paraline, axonometric, and perspective projection, shades and shadows, and basic descriptive geometry for designers. 1 hour lecture, 4 hours studio. Prerequisite: major in the College of Architecture and Environmental Design.

161 Advanced Freehand Perspective Drawing. (2) N
Introduction to color media, and analytical and design drawing exercises. 4 hours studio. Prerequisite: major in the College of Architecture and Environmental Design.

301 Architectural Communication I. (2) F
Communication skills for architecture studios. Emphasis on graphics, drawing conventions, media, computer-aided design, design of presentations, and oral presentations. Lecture, studio. Corequisite: ADE 321.

410 Architectural Presentation Techniques. (3) F, S
Special techniques of graphic communications as preliminary presentation tools for the design professional. Prerequisite: AVC 301 or instructor approval.

411 Architectural Watercolor Presentation Techniques. (2) N
Introduction of architectural presentation techniques using watercolor as a primary media. Emphasis on color, composition, and technique. Prerequisite: AVC 301 or instructor approval.

444 Architectural Photography. (2–3) N
Use of photography as a means of architectural study, evaluation, and record. Introduction to 35 mm camera and darkroom techniques. Lecture, lab. Prerequisite: instructor approval.

ARCHITECTURE PROFESSIONAL STUDIES

ARP 451 Architecture Field Studies. (1–6) F, S, SS
Organized field study of architecture in specified national and international locations. Credit/no credit. May be repeated with approval of director.

484 Clinical Internship. (3) SS
Effective through spring 1997.
Full-time internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit. Prerequisite: instructor approval.

484 Clinical Internship. (1) SS
Effective starting summer 1997.
Full-time internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit. Prerequisite: instructor approval.

684 Professional Internship. (2–6) S
Field experience in an architectural firm specializing in an area directly related to the student's advanced study. Integration of theory and state-of-the-art practices. Credit/no credit. Prerequisite: instructor approval.

School of Design

Robert L. Wolf
Director
(AED 154B) 602/965–4135
Fax 602/965–9717

PROFESSORS
BUSH, KROELINGER, REZNIKOFF, WOLF

ASSOCIATE PROFESSORS
BRANDT, DORSA, JOHNSON, NIELSEN, RATNER, WITT

ASSISTANT PROFESSORS
BERNARDI, CUTLER, DiCICCO, HARMON-VAUGHAN, McDERMOTT, SADLER

PROFESSORS EMERITI
BENZINGER, KNIGHT, QUESADA, STREUFERT

Information about the School of Design may also be obtained via the World Wide Web at http://aspin.asu.edu/provider/caed/caedhome.html or by sending electronic mail to robert.lee.wolf@asu.edu.

PURPOSE

The School of Design educates designers for a professional world that needs informed and developed talent. The curricula emphasize preparation in building bridges between the academic world and the professions. The faculty believe that the designers have a responsibility to the public and the communities they serve; the student learns not only the history and theory of the professions and their practical application, but an understanding of systems, functions, scientific, and technical data related to public welfare, safety, and human factors. Students integrate aesthetic values into the products and spaces they design and consider the aspirations of the world in which they live. The goal is to create the best design curricula possible and to develop technically accomplished and conceptually sophisticated graduates who continue to evolve as practicing professionals. With the help of an international network and a faculty of active design professionals, the aim is to educate creative individuals who will achieve a comprehensive understanding of both products and interiors as related to the different cultures in which they exist.

ORGANIZATION

Programs in the School of Design are organized by the faculty of the school under the direction and administration of the director.

DEGREES AND MAJORS

The faculty of the School of Design offer the Bachelor of Science in Design degree. Two majors are available: Industrial Design and Interior Design. Applications are not being accepted to the major in Design Science.

Industrial Design. The program in Industrial Design prepares creative individuals to shape the objects used by people daily. The industrial design profession serves the needs of both manufacturers and consumers by developing products that are attractive, useful, safe, convenient, and comfortable to use. The designer's special talents and skills include an aesthetic sense, knowledge of materials and processes, and an understanding of the physical and psychological needs of the user. Designers often serve as a catalyst among management, marketing, and engineering staffs.

Through studio projects, students learn to visualize ideas and communicate them to others and to refine skills in freehand sketching, computer-aided design, and model making. Assignments balance conceptual aspects with practical techniques. Typical projects include electronics, toys, furniture, sports equipment, and packaging. Stress is placed on the role of the designer in a team effort. Third-year students perform internships in a large corporation or in a consulting design agency.

Interior Design. The program in Interior Design is accredited by the national accrediting agency, the Foundation for Interior Design Education Research. The five-year curriculum emphasizes design process, technical skill development, problem solving, and the management skills needed to work in collaboration with the allied design professions. The goal is to create high-quality environments for human use.

Significant changes in the interior design profession over the last two decades are reflected in the program. The school is committed to integrating computer technology into each level of the curriculum. In doing so, the program offers an excellent environment for experimenting with and testing innovative applications of computer-aided design and simulation to interior design.

ADMISSION

Lower-Division Program. New and transfer students who have been admitted to the university and who have selected Industrial Design or Interior Design as a major are admitted to the appropriate lower-division program. Transfer credits for the lower-division program are reviewed by the college and evaluated as admissible to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering. A review of samples of work is required for studio classes. Consult a college academic advisor for an appointment.

Entering lower-division students who are not ready to take some courses in the curriculum (for example, algebra and trigonometry or a second course in computer programming) are required to take additional courses, which do not apply to the Bachelor of Science in Design degree. If these courses are needed, it may take an additional year to complete the lower-division program.

Completion of lower-division requirements does not ensure acceptance to an upper-division professional program.

Upper-Division Program. When students have completed the lower-division curriculum requirements, they may apply for acceptance to upper-division programs in Industrial Design or Interior Design. In addition to the portfolio review, the faculty in charge of the Interior Design program conduct an four-hour required design charette to measure minimum competency and understanding of the design process. The limited spaces available each year are awarded to applicants with the highest promise for professional success. The faculty of the School of Design retain the right to admit any meritorious student who may be deficient in a published school criterion. Such admission requires an extraordinary review of the applicant by the school's admissions committee. Should the faculty choose to admit such an applicant, the student is placed automatically on a provisional admission status with stipulations as to what is required to be removed from probation. See "Application to Upper-Division Programs."

Students not admitted to upper-division programs are not dismissed from the university and may reapply or may transfer to other programs. Students who intend to reapply should meet with a college academic advisor.

APPLICATION TO UPPER-DIVISION PROGRAMS

Upper-Division Application Procedures. Students should write to a college academic advisor for the application form well in advance of the application deadline. For more information on portfolios, ask for a copy of the *Portfolio Seminar* brochure from a college academic advisor. The following dates and procedures are for students applying to 1996–97 upper-division programs.

Upper-Division Application Deadlines. *April 11, 1997.* Portfolio and application documents are due in the school office by 5:00 P.M. In addition to the portfolio submittal, the Interior Design faculty conduct a half-day *required* design charette to measure minimum competency and understanding of the design process. The date is announced when the portfolio is submitted. Students who do not complete the charette are not considered for upper-division admission.

June 6, 1997. If the spring 1997 semester includes transfer course work (i.e., course work taken at an institution other than ASU), a student must submit his or her transcripts to the school no later than June 6. These transcripts may be unofficial copies. A second set of official transcripts must be sent to the university Undergraduate Admissions office. Application is not complete until the university receives official transcripts for transfer course work. For those transfer students whose academic term ends in June rather than May, this deadline may be extended upon the written request of the applicant.

July 1, 1997. Acceptance notices are mailed no later than July 1.

Return of Letter of Acceptance. A signed receipt of acceptance of admission must be received by the school by the date indicated on the Notice of Acceptance. Alternates may be accepted at a later date if space becomes available.

Matriculation. An accepted student is expected to begin his or her upper-division professional program at the beginning of the immediate fall term. There is no spring admission to the upper division.

Portfolio Format Requirements. Each applicant is responsible for obtaining the following documents and including them in the portfolio. Application materials are submitted at one time in a presentation binder (portfolio) with plastic sleeves (8.5" x 11" format only). The student's name must be affixed to the outside. Items must appear in the following order:

Page 1. The application form should be completely filled out with the first page visible. Application forms are available from the college academic advising office.

Page 2. The second page of the application should be visible.

Page 3. Application Essay.

Page 4. All college transcripts for both ASU and transfer work should be included through the fall 1996 semester. Copies are acceptable. An academic advisor forwards 1997 ASU transcripts. (Applicants wishing to transfer spring

semester 1997 work are responsible for submitting these transcripts by June 6 so that they may be added to their portfolios. The student is also responsible for getting an official transfer transcript sent directly to the Office of the Registrar.)

Page 5. A certificate of admission is necessary only for those students who have been newly admitted for fall 1997 and who are applying directly into an upper-division program. The certificate is not required for students currently attending ASU.

Following Pages (Usually 10–20 Sheets). Students should present work sufficient to demonstrate the depth and breadth of their creative activity. This work should include (but is not limited to) examples of two- and three-dimensional design and graphics. Each project should be clearly identified (course, length of project, etc.), with a concise accompanying description of the assignment.

Students are encouraged to include additional materials, written or pictorial, that provide additional evidence of skills and abilities and of the aptitude and commitment to the major. When any work submitted is not completely original, the source must be given. When work is of a team nature, the applicant's role should be clearly indicated. Original examples or slides must not be submitted. All examples must be photographs or other reproduction graphic media.

Return of Portfolios. Application documents (pages 1 through 6) remain the property of the College of Architecture and Environmental Design. However, the remaining portfolio is returned after the admissions review, provided the applicant encloses a self-addressed return mailer with sufficient prepaid postage. Portfolios may be claimed in person after July 1, 1997. If the applicant provides written permission, another person may claim the portfolio. After one year, unclaimed portfolios are discarded. While care is taken in handling the portfolios, no liability for lost or damaged materials is assumed by the college or school.

ADVISING

Advising for the lower- and upper-division curricula is through a college academic advisor (ARCH 141).

DEGREE REQUIREMENTS

The Bachelor of Science in Design degree requires a minimum of 120 semester hours for a major in Industrial Design and a minimum of 150 semester hours for a major in Interior Design. The program includes required field trips. Students are responsible for these additional costs. Foreign study opportunities are available for honors students. An internship is a required part of the program.

Industrial Design. The curriculum in Industrial Design is divided into a lower-division and an upper-division program:

Lower-division program	58
Upper-division program	62
Total	120

The lower-division curriculum balances a foundation in academic subjects such as English, algebra and trigonometry, computers, and physics with departmental courses that include history as well as studio courses in drawing, design fundamentals, human factors, and materials and processes.

The upper-division curriculum includes studio and laboratory work in industrial design, graphics, material design and professional practice. Students also take a number of approved program electives. A supervised summer internship is part of the curriculum.

Upper-division studios emphasize projects that promote an interdisciplinary approach to solving problems and that develop the student's intellectual understanding of the philosophy and direction of methods and theories related to industrial design. Problems proceed from small consumer products with simple task functions to larger and more complex problems and systems. Studio projects also emphasize the design processes: problem resolution through concept ideation, dialogue with specialists in related areas, and product development, presentation, and marketing.

Graduates of the program accept entry-level positions in industry and firms doing product and packaging design. Designers may focus on consumer products, transportation, electronics, medical devices, health products, recreational products, or materials application. Students may also choose to continue their education with graduate studies to enrich their design skills, to specialize, or to prepare for college-level teaching.

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See pages 71–94 for the General Studies requirement and a list of approved courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See pages 66–70.

Industrial Design—B.S.D.
Lower-Division Requirements[1]

First Year

Fall (15)			
DSC	101	Contemporary International Design *HU, G*	3
DSC	160	Freehand Drawing for Industrial Design	3
DSC	236	Introduction to Computer Modeling *N3*	3
ENG	101	First-Year Composition or ENG 105 (3) if qualified	3
MAT	117	College Algebra *N1*	3
Spring (15)			
DSC	161	Technical Drawing for Industrial Design	3
ECN	112	Microeconomic Principles *SB*	3
ENG	102	First-Year Composition	3
MAT	170	Precalculus *N1*	3
PGS	101	Introduction to Psychology *SB*	3

Second Year

Fall (15)			
DSC	227	Visual Methods for Problem Solving	3
DSC	242	Materials and Design	3
DSC	260	Industrial Design I	3
DSC	316	20th-Century Design I *HU, H*	3
DSC	344	Human Factors in Design	3
Spring (13)			
DSC	228	Imaging and Visualization	3
DSC	243	Process and Design	3
DSC	261	Industrial Design II	3
PHY	111	General Physics *S1/S2*[2]	3
PHY	113	General Physics Laboratory *S1/S2*[2]	1
Lower-division total[3]			58

[1] Transfer credits for the lower-division program must be equivalent in both content and level of offering. Samples of studio work must be provided for evaluation. See a college academic advisor for an appointment.

[2] Both PHY 111 and 113 must be taken to secure S1 or S2 credit.

[3] TGECC satisfied.

Industrial Design—B.S.D.
Upper-Division Requirements
Third Year

Fall (17)

COM	225	Public Speaking *L1*	3
		or approved elective (3)	
DSC	327	Presentation Graphics	3
DSC	354	Principles of Product Design	3
DSC	360	Industrial Design III	5
MKT	300	Principles of Marketing	3

Spring (15)

DSC	328	Graphic Design	3
DSC	361	Industrial Design IV	5
Approved S1 or S2 elective with approved laboratory*			4
Elective			3

Summer (2)

DSC	484	Internship	2

Fourth Year

Fall (14)

DSC	460	Design Project I	5
DSC	470	Professional Practice for Industrial Design *L2*	3
ENG	301	Writing for the Professions *L1*	3
Approved HU or SB upper-division elective*			3

Spring (14)

DSC	461	Design Project II	5
DSC	474	Design Seminar	3
Approved elective*			3
Elective			3
Upper-division total			62
B.S.D. minimum total			120

*A list of courses that fulfill approved program and technology electives is available from the college academic advisor.

Interior Design. The curriculum in Interior Design is divided into a lower-division (first and second year) and an upper-division program (third, fourth, and fifth years):

Lower-division program	56
Upper-division program	94
Total	150

The lower-division curriculum balances a foundation in academic subjects such as English, algebra and trigonometry, computer technology, and physics with departmental courses that include history and theory, as well as studio courses in drawing, design fundamentals, and conceptual design.

The upper-division curriculum includes studio work in interior design, furniture design, construction methods/structures, codes as related to materials and finishes, human factors, environmental control systems, as well as lecture courses in the history of interior design, decorative arts, and textiles. An eight-week supervised summer internship is part of the curriculum. The fifth year is an interdisciplinary year in which students address real-life environmental problems. This final year is a capstone experience which utilizes all previous learning within and outside the professional program. The students final design project is completed in consultation with a member of the local professional community.

Graduates from the program accept entry-level professional positions in a variety of settings, including interior design firms, departments of space planning, architectural firms, public institutions, and industry. Students may also choose to continue their education through graduate studies, which offer greater enrichment in studio disciplines and which contribute to the possibility for postsecondary-level academic appointments, giving the recipients highly sought-after academic credentials.

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See pages 71–94 for the General Studies requirement and a list of approved courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See pages 66–70.

Interior Design—B.S.D.
Lower-Division Requirements[1]
First Year

Fall (15)

DSC	100	Introduction to Environmental Design *HU, G/H*	3
DSC	170	Visualization for Interior Design	3
ENG	101	First-Year Composition	3
		or ENG 105 (3) if qualified	
MAT	117	College Algebra *N1*	3
Elective			3

Spring (15)

COM	230	Small Group Communication *SB*	3
		or approved SB elective (3)	
DSC	171	Vocabulary for Interior Design	3
DSC	236	Introduction to Computer Modeling *N3*	3
ENG	102	First-Year Composition	3
		or HU elective if ENG 105 is taken	
MAT	170	Precalculus *N1*	3

Second Year

Fall (13)

DSC	220	Media for Design Development	3
DSC	223	Interior Design Issues and Theories *HU*	3
DSC	231	Concepts for Interior Design	3
PHY	111	General Physics *S1/S2*[2]	3
PHY	113	General Physics Laboratory *S1/S2*[2]	1

Spring (13)

ARS	102	Art of the Western World II *HU*	3
COM	225	Public Speaking *L1*	3
		or approved L1 elective (3)	
DSC	235	User Needs and Behavior in Interior Design	3
S1 or S2 elective with laboratory			4
Lower-division total[3]			56

[1] Transfer credits for the lower-division program must be equivalent in both content and level of offering. Samples of studio work must be provided for evaluation. See a college academic advisor for an appointment.

[2] Both PHY 111 and 113 must be taken to secure S1 or S2 credit.

[3] TGECC satisfied.

Interior Design—B.S.D.
Upper-Division Requirements
Third Year

Fall (17)

DSC	310	History of Interior Design I *HU, H*	3
DSC	340	Interior Codes: Public Welfare and Safety	3
DSC	344	Human Factors in Design	3
DSC	364	Interior Design Studio I	5
DSC	366	Construction Methods in Interior Design	3

Spring (15)

DSC	311	History of Interior Design II *HU, H*	3
DSC	341	Interior Materials and Finishes	3
DSC	365	Interior Design Studio II	5
DSC	455	Environmental Control Systems	3
DSC	483	Pre-internship Seminar	1

Summer (3)

DSC	484	Internship	3

NOTE: For the General Studies requirement, codes (such as L1, N3, C, and H), and courses, see pages 71–94. For graduation requirements, see pages 66–70. Omnibus courses are offered that are not listed in the catalog; see pages 44–45.

Fourth Year

Fall (17)

DSC	412	History of Decorative Arts in Interiors *HU* 3
DSC	442	Specifications and Documents for Interiors *L2*..... 3
DSC	457	Acoustics for Interior Design 3
DSC	464	Interior Design Studio III.....5
ENG	301	Writing for the Professions *L1*..... 3

Spring (14)

DSC	413	History of Textiles in Interior Design 3
DSC	458	Lighting for Interior Design 3
DSC	465	Interior Design Studio IV 5
SB elective.....3		

Fifth Year*

Fall (14)

DSC	422	Facilities Planning and Management I.....3
DSC	446	Furniture Design and Production 3
DSC	466	Interior Design Studio V 5
Approved degree project elective.....3		

Spring (14)

DSC	423	Facilities Planning and Management II 3
DSC	467	Interior Design Studio VI 5
DSC	472	Professional Practice for Interior Design.....3
Approved degree project elective.....3		

Upper-division total.....94
B.S.D. minimum total 150

*See "Fifth Year" below.

Fifth Year. During the fifth year, the student concentrates on research related to the development of a comprehensive project. This year is self-directed in nature and prepares the student for independent thinking and creative problem solving. The fifth-year experience promotes high expectations for producing professional work that represents the culmination of the major's academic experience. It should be noted that the fifth-year studio sequence is designed to draw majors from the upper-division programs of industrial design, architecture, and planning, thus furthering a real-life interdisciplinary problem-solving experience.

DESIGN

DSC 100 Introduction to Environmental Design. (3) F, S, SS
Survey of environmental design, including historic examples and the theoretical, social, technical, and environmental forces that shape them. Cross-listed as APH/PUP 100. *General studies: HU, G/H.*

101 Contemporary International Design/ Theory. (3) F, S
Survey of contemporary European, American, and Asian design in light of historical events, economic forces, cultural values, and aesthetic ideals. *General studies: HU, G.*

160 Freehand Drawing for Industrial Design. (3) F
Freehand perspective drawing techniques of objects. Observation and visualization experiences. Light and shade. 5 hours studio. Prerequisite: major in college.

161 Technical Drawing for Industrial Design. (3) S
Orthographic and perspective projection, dimensioning, and basic descriptive graphic methods for designers. Principles of organization, layout, and technical lettering. 5 hours studio. Prerequisite: DSC 160 or equivalent.

170 Visualization for Interior Design. (3) F
Development of an understanding of drawing space and product: sequential development of 2- and 3-dimensional drawing skills. 1 hour lecture, 4 hours lab. Prerequisite: major in college.

171 Vocabulary for Interior Design. (3) S
Projects in the vocabulary of design, including color, composition, character, and form as related to design. 2- and 3-dimensional graphic representation. 1 hour lecture, 4 hours lab. Prerequisite: DSC 170.

220 Media for Design Development. (3) F
Graphic representation methods used to describe and analyze space; emphasis on quick presentation techniques. 6 hours studio. Prerequisite: DSC 171.

223 Interior Design Issues and Theories. (3) F, S
Interiors issues, theories, and philosophies. Emphasis on unique social and cultural factors that shape 20th century design concepts. *General studies: HU.*

227 Visual Methods for Problem Solving. (3) F
Introduction to conceptual design activity based on the mind-eye-media feedback loop. Graphic language used to represent conjecture, analysis, synthesis of objects, and their contexts. Seminar, studio. Prerequisite: DSC 161 or equivalent.

228 Imaging and Visualization. (3) S
Design activities stressing graphic language abstraction practiced for presentation. Structure of criticism, including description, interpretation, and evaluation are discussed. Seminar, studio. Prerequisite: DSC 227.

231 Concepts for Interior Design. (3) F
Conceptual design development, including scale and proportion, light, texture, form, volume, and spatial hierarchy; passage and repose. 1 hour lecture, 4 hours lab. Prerequisite: DSC 171.

235 User Needs and Behavior in Interior Design. (3) S
Applications of conceptual design to issues of programming and space planning, user needs, and behavior. 1 hour lecture, 4 hours lab. Prerequisite: DSC 231.

236 Introduction to Computer Modeling. (3) F, S
Fundamentals of computer operation, geographic informations systems, geometric modeling of three-dimensional forms and rendering of light, mathematical modeling of processes using spreadsheets. Lab. Cross-listed as ANP/PUP 236. Prerequisite: major in the College of Architecture and Environmental Design. *General studies: N3.*

242 Materials and Design. (3) F
Materials application in design. Introduction to characteristics and properties of metals and organic materials, including plastics and inorganic materials.

243 Process and Design. (3) S
Influences of industrial processing on design. Introduction to basic materials processing and post-forming processes. Emphasis on appearance enhancement and design constraints of material processing. Prerequisite: DSC 242.

260 Industrial Design I. (3) F
Introduction to the method and process of the industrial designer. Determinants necessary in small product design. 1 hour lecture, 2 hours studio. Prerequisite: DSC 161 or equivalent.

261 Industrial Design II. (3) S
Issues of physical form development related to product and design; form development properties of paper, fibers, wood, metal, and plastics. 1 hour lecture, 2 hours studio. Prerequisite: DSC 260 or equivalent.

310 History of Interior Design I. (3) F
The design of interior spaces as an expression of cultural influences to 1835. Prerequisite: ARS 102 or instructor approval. *General studies: HU, H.*

311 History of Interior Design II. (3) S
Design of interiors as an expression of cultural influences from 1835 to the present. Prerequisite: DSC 310 or instructor approval. *General studies: HU, H.*

316 20th-Century Design I. (3) F
Modern European and American design from 1900 to 1940. Emphasis on transportation, product, furniture, exhibition, and graphic design. *General studies: HU, H.*

317 20th-Century Design II. (3) S
Modern European, Asian, and American design since 1940. Emphasis on transportation, product, furniture, exhibition, and graphic design. *General studies: HU, H.*

318 History of Graphic Design. (3) F
Survey of development in the graphic arts, innovative printing methods, aesthetic values, and social and cultural environments that shape them. *General studies: HU.*

327 Presentation Graphics. (3) F
Methods for portfolio and professional product presentation using graphic media for information transfer are studied. Aesthetic judgment, organization, and craftsmanship are stressed. Seminar, studio. Prerequisite: DSC 228.

328 Graphic Design. (3) S
Packaging applications and planning are investigated and applied to the development of an identity for a product line structured as a system. Lab. Prerequisite: DSC 327.

340 Interior Codes: Public Welfare and Safety. (3) F
Codes and regulations as performance criteria for interior design. Corequisite: DSC 366.

341 Interior Materials and Finishes. (3) F
General analysis of quality control measures relating to interior design materials, finishes, and performance criteria. Prerequisite: DSC 340.

344 Human Factors in Design. (3) F
Man-machine environment systems; human characteristics and behavior applied to design of products, systems, and their operating environment.

354 Principles of Product Design. (3) F
Influences of physical and mechanical concepts in product design; mechanisms, kinematics, and fastening systems. Concepts of analysis for product design. Influences of concepts on aesthetics. Prerequisites: MAT 117; PHY 111.

355 Plastics Design. (3) S
Mold design for part requirements; molded holes; threads; inserts; fastening and joining; decorating; reinforced plastics. Prerequisite: DSC 354.

360 Industrial Design III. (5) F
Methods of visual thinking, conceptualization, and ideation related to building skill levels in professional design presentation techniques. 10 hours studio. Prerequisite: department approval.

361 Industrial Design IV. (5) S
Emphasis on developing ideas into a complete functional product, including survey and application of aesthetics, human factors, materials, and manufacturing. 10 hours studio. Prerequisite: DSC 360.

364 Interior Design Studio I. (5) F
Studio problems in interior design related to behavioral response in personal and small group spaces. 10 hours studio. Prerequisite: department approval.

365 Interior Design Studio II. (5) S
Studio problems in interior design, with emphasis on issues of public and private use of interior places of assembly. 10 hours studio. Prerequisite: department approval.

366 Construction Methods in Interior Design. (3) F, S
Design theory related to analysis, materials, and building techniques of horizontal and vertical construction in interior design. Lecture, field trips. Corequisite: DSC 340.

412 History of Decorative Arts in Interiors. (3) F
The design of decorative arts as an expression of cultural influences and as an extension of interior spaces. Prerequisite: DSC 311 or instructor approval. *General studies: HU.*

413 History of Textiles in Interior Design. (3) S
Cultural and historical expression of textiles as related to interiors. May include field trips. Prerequisite: DSC 412 or instructor approval.

422 Facilities Planning and Management I. (3) F
The facility management process in large-scale organizations. Planning, long-range forecasting, and productivity. Project management methodologies using micro-based software programs. Prerequisite: senior standing.

423 Facilities Planning and Management II. (3) S
The formation of facilities policies, procedures, and standards. The facilities database, space allocations, and management process. Evaluation of programming criteria. Prerequisites: DSC 422; senior standing.

442 Specifications and Documents for Interiors. (3) F
Contract specifications, documents, schedules, and bidding procedures for interior design. Prerequisites: DSC 341, 365. *General studies: L2.*

446 Furniture Design and Production. (3) F
Design, construction, cost estimating, and installation in interior furniture and millwork. 1 hour lecture, 4 hours studio. Prerequisite: DSC 465.

455 Environmental Control Systems. (3) S
Survey of environmental control systems and their application in the design of building interiors. Lecture, field trips. Prerequisites: MAT 117, 170; PHY 111, 113; junior standing.

457 Acoustics for Interior Design. (3) F
Physical properties of sound. Studies pertaining to sound-absorbing materials, constructions, and room acoustics. Prerequisites: MAT 170; PHY 111, 113; senior standing.

458 Lighting for Interior Design. (3) S
Light as an aspect of interior design. Evaluation of light sources for distribution, color, and cost. Prerequisite: senior standing.

460 Design Project I. (5) F
Complete analysis of the product unit as an element of mass production, featuring marketing, technology, human factors, and visual design. Emphasis on professional standards. 10 hours studio. Prerequisites: DSC 361, 484.

461 Design Project II. (5) S
Product design, with emphasis in systems interaction. Culmination of design process and technique. Individual project direction is encouraged. 10 hours studio. Prerequisite: DSC 361.

464 Interior Design Studio III. (5) F
Studio problems in interior design related to commercial spaces. 10 hours studio. Prerequisites: DSC 365, 484.

465 Interior Design Studio IV. (5) S
Studio problems in interior design related to health and educational facilities. 10 hours studio. Prerequisite: DSC 464.

466 Interior Design Studio V. (5) F
Advanced interior design problem solving, design theory, and criticism. Thesis project development based upon the major's concentration. 10 hours studio. Prerequisite: department approval.

467 Interior Design Studio VI. (5) S
Advanced series of specialized projects or continuation of thesis project based upon the major's concentration. 10 hours studio. Prerequisite: department approval.

470 Professional Practice for Industrial Design. (3) F
Business procedures, management techniques, accounting systems, ethics, and legal responsibilities of the design professions. May be repeated for credit. Prerequisite: senior standing. *General studies: L2.*

472 Professional Practice for Interior Design. (3) S
Business procedures, project control, fee structures, and professional product liabilities. Prerequisite: senior standing.

474 Design Seminar. (3) S
Manufacturer's liability, statutes, regulations, and common law rules; role of expert witnesses; insurance and product safety programs. Seminar. Prerequisites: senior standing.

483 Pre-internship Seminar. (1) S
Preparation of internship materials that produce and enhance a successful internship experience. Seminar. Prerequisite: 3rd-year major in the department.

484 Internship. (3) SS
Full-time summer internship under supervision of practitioners in the Phoenix area or other locales. Prerequisite: instructor approval.

520 Contemporary Design Issues. (3) F, S
Projected applications in design production, planning, and decision-making processes. Lecture, seminar. Prerequisites: DSC 310 and 311 *or* equivalents.

524 Illumination and Acoustics. (3) N
Research and laboratory investigation of advanced illumination and acoustics issues of facility design. Emphasis on human factors and performance aspects. Prerequisites: DSC 457 and 458 *or* equivalents.

525 Design Methodologies. (3) F
Practical exercises and studies in problem-solving strategies; problem definition and supporting theory for the designer. Lectures, seminars, lab. Prerequisite: senior or graduate standing.

527 Modern Design Theory. (3) S
Aesthetic, political, economic, and social theories that have shaped modern design; theory as the basis for design philosophies. Lectures, seminars. Prerequisite: DSC 525 or equivalent.

529 Design Criticism. (3) F
Critical methods applied to design as material culture and human expression; evaluation of achievement versus intention. Lecture, seminar. Prerequisite: DSC 527 or equivalent.

544 Human Factors Systems and Documentation. (3) F
Advanced topics associated with theory and methods of human factors in design. Individual projects stressing problem organization, evaluation, and documentation. Lectures, seminars, lab. Prerequisite: DSC 344 or equivalent.

552 Computer Simulation in Design. (3) F
The use of computer graphics as a medium to develop and present images of the environment for analysis and perception. Lecture, lab. Prerequisite: senior or graduate standing.

553 Computer Imaging and Visual Perception. (3) S
Issues and applications of computer simulation as a tool for describing and testing human interface with the environment. Lecture, lab. Prerequisite: senior or graduate standing.

558 Daylighting. (3) N
Daylighting as a design determinant; concepts, techniques, methodology, experiments, and case studies. Lecture, studio. Prerequisite: senior or graduate standing.

580 Practicum: Methods of Teaching Design. (3) F
Background and development of design education theories. Concepts of studio teaching methods. Comprehensive student project development and evaluation methods. Prerequisite: graduate standing.

NOTE: For the General Studies requirement, codes (such as L1, N3, C, and H), and courses, see pages 71–94. For graduation requirements, see pages 66–70. Omnibus courses are offered that are not listed in the catalog; see pages 44–45.

School of Planning and Landscape Architecture

Frederick Steiner
Director
(AED 158A) 602/965–7167

PROFESSORS
BRADY, BROCK, KIHL, LAI, PIJAWKA, STEINER

ASSOCIATE PROFESSORS
COOK, KIM, MILLER, SAN MARTIN, WHYSONG

ASSISTANT PROFESSORS
EWAN, FISH, GREEN, GUHATHAKURTA, McSHERRY, WASSERMAN, YABES

PROFESSOR EMERITUS
ELMORE

PURPOSE

The faculty of the School of Planning and Landscape Architecture offer a curriculum that provides an education for careers in environmental planning, urban and regional development, landscape architecture, urban design, housing and urban development, and environmental resource management. The goal of the faculty is to advance the profession of planning through scholarship, teaching, research, and community service.

Planners and landscape architects work on projects that range in scale from site and landscape development to the design of entire communities and the formulation of policies that shape urban and regional growth. Planning, landscape architecture, and environmental resource management graduates work for both private firms and government agencies. Their work typically involves fields such as land-use planning, housing, natural resource management, urban transportation, development controls, and environmental impact assessment.

For graduates from environmental resources, employment opportunities in environmental resource management, range ecology, land reclamation, and soil conservation exist with both private firms and government agencies.

ORGANIZATION

The programs are organized by the faculty of the school under the direction and administration of the director.

DEGREES AND MAJORS

The faculty of the School of Planning and Landscape Architecture offer the undergraduate degrees Bachelor of Science (with a major in Environmental Resources), Bachelor of Science in Planning, Bachelor of Science in Landscape Architecture, and Bachelor of Science in Design and the graduate degrees Master of Science (with a major in Environmental Resources) and Master of Environmental Planning. The Bachelor of Science in Planning degree offers the major in Urban Planning. The Bachelor of Science in Design degree offers the major in Housing and Urban Development.

Urban Planning. The Bachelor of Science in Planning (B.S.P.) degree requires four years of study. Following two years of preparatory work, students take two years of courses that include site planning, landscape architecture, urban design, comprehensive planning, socioeconomic and environmental analysis, computer and analytical methods, planning law, and public-policy formulation and administration. An internship is required between the third and fourth years. Many students continue to specialize in planning at the graduate level. Students in planning are exposed to the theories, methods, and interdisciplinary approaches of the profession of planning.

Landscape Architecture. The Bachelor of Science in Landscape Architecture (B.S.L.A.) degree prepares students to be professional landscape architects. Students explore the reasons for and the techniques involved in the analysis, planning, and design of the environment, both natural and built.

Housing and Urban Development. The Bachelor of Science in Design (B.S.D.) degree with a major in Housing and Urban Development educates and trains professionals to lead in the production of high-quality affordable housing, in the development of creatively-designed and soundly-planned neighborhoods and communities, in the revitalization of communities, and in the exemplification of social inclusiveness and environmental sensitivity in responsible land development. HUD graduates may pursue careers in the private home development industry, in publicly-sponsored housing and community redevelopment, with nonprofit housing agencies, or in postgraduate housing and urban development research and education. The B.S.D. with a major in Housing and Urban Development is offered in conjunction with the College of Extended Education.

Environmental Resources. The Bachelor of Science degree with a major in Environmental Resources features a concentration in natural resource management with options in wildlife habitat management and range ecology. In addition, particular attention is given to the study of ecosystem characteristics as they relate to the use of renewable resources.

The School of Planning and Landscape Architecture also offers the Master of Science degree with a major in Environmental Resources. The program includes research and the preparation of a thesis. A minimum of 30 semester hours of graduate-level course work is required for the degree. For more information, see the *Graduate Catalog.*

Master of Environmental Planning. The School of Planning and Landscape Architecture offers specialization areas in urban and regional development, urban design, and landscape ecological planning, under the Master of Environmental Planning degree (M.E.P.), a professional planning degree. This is a two-year degree program that includes 25 hours of core courses, 15 hours in an area of specialization, an optional three-hour internship, three hours of approved electives, and a five-hour thesis, for a total of 51 semester hours or 48 without the internship. For more information, see the *Graduate Catalog.*

Doctor of Philosophy in Environmental Design and Planning. A college-wide, interdisciplinary Ph.D. is available through the College of Architecture and Environmental Design. For more information, see the *Graduate Catalog.*

ADMISSION

Lower-Division Program. New and transfer students who have been admitted to the university and who have selected a program in the School of Planning and Landscape Architecture are admitted to the lower-division program. Transfer credits for the lower-division program are reviewed by the college and evaluated for admissibility to this curriculum. To be admissible, transfer

courses must be equivalent in both content and level of offering. A review of samples of work is required for studio classes. See a college academic advisor for an appointment.

Completion of lower-division requirements does not ensure acceptance to the upper-division professional program. Admission to the upper division is competitive and limited to the space available. Admission requires formal application and acceptance.

Upper-Division Program. Admission to the upper-division programs of the School of Planning and Landscape Architecture is limited to applicants who have completed the lower-division program requirements and who are determined by the admissions committee to have the best potential for academic success. Spaces in the program are limited by available facilities, faculty, and qualified applicants. A lower-division program GPA of 3.00 may be required. See "Application to Upper-Division Programs" below.

Students not admitted to upper-division programs are not dismissed from the university and may reapply later or may transfer to other programs. Students who plan to reapply should meet with a college academic advisor.

Applications for admission to the upper-division Housing and Urban Development program are made directly to the school director. Applications must include a proposed curriculum developed in conjunction with a faculty advisor and acceptable to the department faculty.

APPLICATION TO UPPER-DIVISION PROGRAMS

Upper-Division Application Procedures. Students should write to a college academic advisor for the application form well in advance of the application deadline. For more information on portfolios, ask for a copy of the *Portfolio Seminar* brochure from a college academic advisor. The following dates and procedures are for students applying to 1997–98 upper-division programs.

Upper-Division Application Deadlines. *April 11, 1997.* Portfolio and application documents are due in the school office by 5:00 P.M.

June 6, 1997. If the spring 1997 semester includes transfer course work (i.e., course work taken at an institution other than ASU), a student must submit his or her transcripts to the school no later than June 6. These transcripts may be unofficial copies. A second set of official transcripts must be sent to the university Undergraduate Admissions office. Application is not complete until the university receives official transcripts for transfer course work. For those transfer students whose academic term ends in June rather than May, this deadline may be extended upon the written request of the applicant.

July 1, 1997. Acceptance notices are mailed no later than July 1.

Return of Letter of Acceptance. A signed receipt of acceptance of admission must be received by the school by the date indicated on the Notice of Acceptance. Alternates may be accepted at a later date if space becomes available.

Matriculation. An accepted student is expected to begin his or her upper-division professional program at the beginning of the immediate fall term. There is no spring admission to the upper division.

Portfolio Format Requirements. Each applicant is responsible for obtaining the following documents and including them in the portfolio. Application materials are submitted at one time in a presentation binder (portfolio) with plastic sleeves (8.5" x 11" format only). The student's name is to be affixed to the outside. Items must appear in the following order:

Page 1. The application form should be completely filled out with the first page visible. Application forms are available from the college academic advising office.

Page 2. The second page of the application should be visible.

Page 3. Application Essay.

Page 4. All high school transcripts should be put into one sleeve.

Page 5. All college transcripts for both ASU and transfer work should be included through the fall 1996 semester. Copies are acceptable. An academic advisor forwards 1997 ASU transcripts. (Applicants wishing to transfer spring semester 1997 work are responsible for submitting these transcripts by June 11 so that they may be added to their portfolios. The student is also responsible for getting an official transfer transcript sent directly to the Office of the Registrar.)

Page 6. A certificate of admission is necessary only for those students who have been newly admitted for fall 1997 and who are applying directly into an upper-division program. The certificate is not required for students currently attending ASU.

Following Pages (Usually 10–20 Sheets). Students should present work sufficient to demonstrate the depth and breadth of their creative activity. Urban Planning and Landscape Architecture applicants' work should include (but is not limited to) examples of two- and three-dimensional design and graphics. Each project should be clearly identified (course, length of project, etc.), with a concise accompanying description of the assignment. Environmental Resources applicants should submit at least one example of their writing and are not expected to submit graphic work.

Students are encouraged to include additional materials, written or pictorial, that provide additional evidence of skills and abilities and of the aptitude and commitment to the major. When any work submitted is not completely original, the source must be given. When work is of a team nature, the applicant's role should be clearly indicated. Original examples or slides must not be submitted. All examples must be photographs or other reproduction graphic media.

Return of Portfolios. Application documents (pages 1 through 6) remain the property of the College of Architecture and Environmental Design. However, the remaining portfolio is returned after the admissions review, provided the applicant encloses a self-addressed return mailer with sufficient prepaid postage. Portfolios may be claimed in person after July 1, 1997. If the applicant provides written permission, another person may claim the portfolio. After one year, unclaimed portfolios are discarded. While care is taken in

handling the portfolios, no liability for lost or damaged materials is assumed by the college or school.

ADVISING

Advising for the lower-division curriculum is provided through a college academic advisor. Advising for the upper-division curriculum is provided by the school director and faculty advisors.

DEGREE REQUIREMENTS

The Bachelor of Science in Planning degree requires a total of 120 semester hours, as shown below.

Bachelor of Science in Planning, Major in Urban Planning

Lower-division courses 61
Upper-division courses core.....57
Internship.....1
Elective.....1

Total 120

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See pages 71–94 for the General Studies requirement and a list of approved courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See pages 66–70.

Bachelor of Science in Planning, Major in Urban Planning Lower-Division Requirements[1]

First-Year Composition (6)
ENG 101, 102 First-Year Composition .....6 or ENG 105 Advanced First-Year Composition (3) plus an HU elective

Literacy and Critical Inquiry (3)
PUP 301 Introduction to Urban Planning *L1*..... 3

Numeracy (6)
MAT 117 College Algebra *N1*..... 3 or MAT 170 Precalculus *N1* (3)
Approved statistics or quantitative reasoning elective 3

Humanities and Fine Arts (9)
APH/PUP 100 Introduction to Environmental Design *HU, G/H* 3
Approved HU or SB elective.....3
Approved HU elective.....3

Social and Behavioral Sciences (6)
ECN 112 Microeconomic Principles *SB* 3
Approved SB elective.....3

Natural Sciences (11)
BIO 100 The Living World *S1/S2*..... 4
BIO 330 Ecology and Conservation *G*..... 3
GPH 111 Introduction to Physical Geography *S1/S2* 4

General Studies electives (3)
HU or SB elective 3

Studio and Planning Courses[2] (17)

First Year
PUP 194 Introduction to Graphics 3

Second Year
ADE 221 Design Fundamentals II[2] 3
PLA 201 Landscape Architecture and Society[2] 3
PUP 261 Urban Planning I.....4
PUP 264 Urban Planning II.....4

Lower-division minimum total 61

[1] Transfer credits are reviewed by the college and evaluated as admissible to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

[2] Portfolio review is required for transfer studio work. See a college academic advisor for an appointment.

Bachelor of Science in Planning, Major in Urban Planning Upper-Division Professional Program Requirements

Junior Year

Fall (17)
GCU 361 Urban Geography *SB*..... 3
PUP 322 Planning Methods Using Computers 3
PUP 361 Urban Planning III.....5
PUP 412 History of the City *H*..... 3
PUP 424 Planning Methods.....3

Spring (14)
PLM 405 Urban Transportation 3
PUP 362 Urban Planning IV 5
PUP 420 Theory of Urban Design *HU*..... 3
PUP 442 Environmental Planning.....3

Summer (1)
PUP 484 Internship.....1
PUP 485 International Field Studies in Planning and Landscape Architecture (optional) 1–12

Senior Year

Fall (15)
PUP 425 Urban Housing Analysis 3
PUP 432 Planning and Development Control Law.....3
PUP 461 Urban Planning V.....5
PUP 494 Environmental Planning Economics 3
PUP 498 Senior Pro-Seminar 1

Spring (11)
PUP 452 Ethics and Professional Practice *L2*..... 3
PUP 462 Urban Planning VI 5
PUP 475 Environmental Impact Assessment 3

Upper-division minimum total 58
B.S.P. in Urban Planning minimum total 120

Bachelor of Science in Landscape Architecture

Lower-division courses 61
Upper-division courses core.....58
Internship.....1

Total 120

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See pages 71–94 for the General Studies requirement and a list of approved courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See pages 66–70.

Bachelor of Science in Landscape Architecture Lower-Division Requirements[1]

First-Year Composition (6)
ENG 101, 102 First-Year Composition .....6 or ENG 105 Advanced First-Year Composition (3) plus an HU elective

Numeracy (6)
MAT 117 College Algebra *N1* 3
MAT 170 Precalculus *N1*..... 3

Literacy and Critical Inquiry (3)
PUP 301 Introduction to Urban Planning *L1* 3

Humanities and Fine Arts (9)
APH/PUP 100 Introduction to Environmental Design *HU, G/H* 3
ARS 101 Art of the Western World I *HU, H*..... 3 or approved elective
ARS 102 Art of the Western World II *HU* ..... 3 or approved elective

Social and Behavioral Sciences (6)
HIS 101 Western Civilization *SB, H* ..... 3 or HIS 102 Western Civilization *SB, G/H* (3) or approved elective
Approved SB elective.....3

Natural Sciences (11)

BIO	100	The Living World *S1/S2*	4
		or approved elective	
BIO	330	Ecology and Conservation *G*	3
GPH	111	Introduction to Physical Geography *S1/S2*	4
		or approved elective	

General Studies elective (3)

HU or SB elective 3

Studio, Planning, and Landscape Architecture Courses[2] (17)

First Year

PUP	194	Introduction to Graphics	3

Second Year

ADE	221	Design Fundamentals I[2]	3
PLA	201	Landscape Architecture and Society	3
PLA	261	Landscape Architecture I	4
PLA	264	Landscape Architecture II	4

Lower-division minimum total 61

[1] Transfer credits are reviewed by the college and evaluated as admissible to this curriculum. To be admissible, transfer courses must be equivalent in both content and level of offering.

[2] Portfolio review is required for transfer studio work. See a college academic advisor for an appointment.

Bachelor of Science in Landscape Architecture Upper-Division Professional Program Requirements

Junior Year

Fall (17)

PLA	310	History of Landscape Architecture[1] *H*	3
PLA	361	Landscape Architecture III	5
PLA	442	Landscape Construction I	3
PUP	322	Planning Methods Using Computers	3
PUP	412	History of the City *H*	3

Spring (14)

BOT	380	Landscape Plants	3
		or PLA 432 Plant Materials (3)	
PLA	362	Landscape Architecture IV	5
PLA	420	Theory of Urban Design *HU*	3
PLA	444	Landscape Construction II	5

Summer (1)

PLA	484	Internship	1
		or approved elective[2]	
PLA	485	International Field Studies in Planning and Landscape Architecture (optional)	1–12

Senior Year

Fall (12)

PLA	363	Landscape Planting Design …	3
PLA	461	Landscape Architecture V	5
PLA	498	Senior Professional Seminar	1
PUP	432	Planning and Development Control Law	3

Spring (14)

PLA	443	Landscape Architecture Theory and Criticism[2]	3
PLA	462	Landscape Architecture VI	5
PUP	442	Environmental Planning	3
		or PUP 546 Urban Design Policy (3)	
PUP	452	Ethics and Professional Practice *L2*	3

Upper-division minimum total 59
B.S.L.A. minimum graduation total 120

[1] This course is offered every other year. The next time it will be offered will be fall 1997. Fall 1996 juniors should select an approved elective and plan to take PLA 310 in their senior year.

[2] Courses that fulfill approved electives should be selected in consultation with departmental advisors.

Bachelor of Science in Design, Major in Housing and Urban Development

Lower-division courses 63
Upper-division courses core.....56
Internship.....1

Total 120

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See pages 71–94 for the General Studies requirement and a list of approved courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See pages 66–70.

Bachelor of Science in Design, Major in Housing and Urban Development Lower-Division Requirements

First Year

Fall (16)

ECN	111	Macroeconomics Principles *SB*	3
ENG	101	First-Year Composition	3
GPH	111	Introduction to Physical Geography *S1/S2*	4
		or PHY 111 General Physics and PHY 113 General Physics Laboratory *S1/S2*[1] (4)	
HUD	161	Graphic Communication I	3
PUP	100	Introduction to Environmental Design *HU, G/H*	3

Spring (15)

CSE	180	Computer Literacy *N3*	3
ECN	112	Microeconomics Principles *SB*	3
ENG	102	First-Year Composition	3
HUD	201	Introduction to Housing and Urban Development	3
MAT	117	College Algebra *N1*	3
		or MAT 170 Precalculus *N1* (3)	
		or MAT 210 Calculus *N1* (3)	

Second Year

Fall (16)

ADE	221	Design Fundamentals	3
APH	200	Introduction to Architecture *HU, G*	3
		or APH 313 History of Western Architecture I[2] *HU* (3)	
CON	252	Building Construction Methods, Materials, and Equipment	3
PLA/PUP	261	Urban Planning/ Landscape Architecture I: Reading the Landscape	4
STP	226	Elements of Statistics *N2*	3

Spring (16)

ACC	230	Uses of Accounting Information I	3
APH	305	Contemporary Architecture *HU*	3
		or APH 314 History of Western Architecture II[2] (3)	
		or PLA 210 History of Landscape Architecture *H* (3)	
		or DSC 223 Interior Design Issues and Theories *HU*	
BIO	100	The Living World *S1/S2*	4
		or PHY 112 General Physics and PHY 114 General Physics Laboratory *S1/S2*[3] (4)	
PLA	201	Landscape Architecture and Society	3
		or PUP 301 Introduction to Urban Planning *L1* (3)	
REA	380	Real Estate Fundamentals	3

Lower-division minimum total 63

[1] Both PHY 111 and 113 must be taken to secure S1 or S2 credit.

[2] APH 313 and 314 must be taken as a pair and are suggested if post-HUD training in architecture is anticipated.

[3] Both PHY 112 and 114 must be taken to secure S1 or S2 credit.

NOTE: For the General Studies requirement, codes (such as L1, N3, C, and H), and courses, see pages 71–94. For graduation requirements, see pages 66–70. Omnibus courses are offered that are not listed in the catalog; see pages 44–45.

Bachelor of Science in Design, Major in Housing and Urban Development Upper-Division Requirements

Third Year

Fall (14)

CON	383	Construction Estimating 3
HUD	301	Housing and Community Design and Development.....3 or CON 477 Residential Construction (3)
HUD	361	Housing and Urban Development Studio I 2
HUD	363	Housing and Urban Development Seminar I 3
REA	456	Real Estate Investment.....3

Spring (14)

CON	389	Construction Cost Accounting and Control.....3
HUD	302	Housing Production and Community Development Process 3
HUD	362	Housing and Urban Development Studio II.....2
HUD	364	Housing and Urban Development Seminar II.....3

Approved elective in computers.....3

Summer (1)

HUD	484	Internship 1
PUP	485	International Field Studies in Planning and Landscape Architecture (optional)....1–12

Fourth Year

Fall (14)

CON	495	Construction Planning and Scheduling *N3* 3
HUD	401	Assisted Housing 3
HUD	461	Housing and Urban Development Studio III 2
HUD	463	Housing and Urban Development Seminar III.....3
PUP	433	Zoning Ordinances, Subdivision Regulations, and Building Codes.....3 or PUP 431 Planning and Development Control Law (3)

Spring (14)

HUD	402	Community Revitalization: Problems and Strategies.....3
HUD	403	Advanced Topics in Housing and Urban Development 3
HUD	462	Housing and Urban Development Studio IV 2
HUD	464	Housing and Urban Development Seminar IV 3
PUP	452	Ethics and Professional Practice *L2* 3

Upper-division minimum total.....57
B.S.D.-HUD total.....120

Bachelor of Science in Environmental Resources

Lower-division courses 60
Upper-division courses core.....34
Approved electives 26

Total 120

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See pages 71–94 for the General Studies requirement and a list of approved courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See pages 66–70.

Bachelor of Science in Environmental Resources Lower-Division Requirements

First Year

Fall (14)

BIO	181	General Biology *S1/S2*..... 4
ENG	101	First-Year Composition .....3 or ENG 105 Advanced First-Year Composition (3)
ERS	130	Soils and Environmental Quality 4

Computer course (see advisor) 3

Spring (14)

BIO	182	General Biology *S1/S2*..... 4
CHM	101	Introductory Chemistry *S1/S2*..... 4
ENG	102	First-Year Composition .....3 or HU elective if taken ENG 105 Advanced First-Year Composition (3)

HU course.....3

Second Year

Fall (16)

BIO	320	Fundamentals of Ecology 3
ECN	111	Macroeconomic Principles *SB* 3
ERS	225	Soils 3
ERS	226	Soils Laboratory.....1
ERS	350	Environmental Statistics *N2*.. 3

SB courses 3

Spring (17)

BOT	370	The Flora of Arizona.....4
CHM	231	Elementary Organic Chemistry *S1/S2*..... 4
ERS	246	Natural Resource Conservation *G* 3
MAT	210	Brief Calculus *N1*..... 3

Elective.....3

Lower-division minimum total 61

Bachelor of Science in Environmental Resources Upper-Division Requirements

Third Year

Fall (15)

ENG	301	Writing for Professions *L1*..... 3
ERS	360	Range Ecosystem Management.....4
ERS	407	Range Plants and Habitats 4

Approved elective (see advisor) 4

Spring (16)

ERS	365	Watershed Management 3
ERS	402	Range Habitat Inventory.....4
ERS	475	Wildlife and Range Animal Relations Management 3

Approved electives (see advisor) 6

Fourth Year

Fall (13)

ERS	410	Wildlife Habitat Relations ....3 or ERS 460 Applied Systems Ecology (3)
ERS	490	Recent Advances in Environmental Resources 1

Approved electives 6
HU or SB elective 3

Spring (15)

ERS	480	Natural Resource Planning ...3
PUP	452	Ethics and Professional Practice *L2* 3
PUP	475	Environmental Impact Assessment.....3

Approved electives 6

Upper-division minimum total.....59
B.S.E.R. total 120

INQUIRIES

For further information on the lower-division or upper-division programs, contact a college academic advisor:

College of Architecture and Environmental Design
Arizona State University
PO Box 871605
Tempe AZ 85287–1605

URBAN AND ENVIRONMENTAL PLANNING

PUP 100 Introduction to Environmental Design. (3) F, S, SS
Survey of environmental design; includes historic examples and the theoretical social, technical, and environmental forces that shape them. Cross-listed as APH/DSC 100. *General studies: HU, G/H.*

200 The Planned Environment. (3) F
Environmental, aesthetic, social, economic, political, and other factors influencing urban development. *General studies: HU, H.*

236 Introduction to Computer Modeling. (3) F, S
Fundamentals of computer operation, geographic informations systems, geometric modeling of three-dimensional forms and rendering of light, mathematical modeling of processes using spreadsheets. Lab. Cross-listed as ANP/DSC 236. Prerequisite: major in the

College of Architecture and Environmental Design. *General studies: N3.*

261 Urban Planning I. (4) F
Reading the landscape: observing, experiencing, and graphically expressing the symbolic and aesthetic significance of natural landscapes. Studio. Cross-listed as PLA 261. Prerequisites: ADE 120; GPH 111.

264 Urban Planning II. (4) S
Planning communication: communication techniques for urban planning and landscape architecture communication. Cross-listed as PLA 264. Prerequisites: ADE 120; PLA/PUP 261.

301 Introduction to Urban Planning. (3) F, S, SS
Theoretical and practical aspects of city planning. Interrelationships among physical planning, environment, government, and society. *General studies: L1.*

322 Planning Methods Using Computers. (3) F
Planning methods using database, word processors, spreadsheets, CAD, and mapping packages on microcomputers. Lecture, lab. Cross-listed as PLA 322.

361 Urban Planning III. (5) F
Site planning: analysis of natural and cultural features; site systems and implications for plan making and design. Studio. Cross-listed as PLA 361. Prerequisite: department major or instructor approval.

362 Urban Planning IV. (5) S
Planning elements: one or more factors addressed, including land use, housing, environment, transportation, circulation, open space, economic development, urban design. Studio. Cross-listed as PLA 362. Prerequisite: department major or instructor approval.

412 History of the City. (3) F
The city from its ancient origins to the present day. Emphasis on European and American cities during the last five centuries. Cross-listed as APH 414. *General studies: H.*

420 Theory of Urban Design. (3) S
Analysis of the visual and cultural aspects of urban design. Theories and techniques applied to selected study models. Cross-listed as PLA 420. Prerequisite: junior standing. *General studies: HU.*

424 Planning Methods. (3) F
Tools useful for urban planning research; emphasis on research design and survey methods. Prerequisite: PUP 301 or instructor approval.

425 Urban Housing Analysis. (3) F
Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.

432 Planning and Development Control Law. (3) F
Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.

433 Zoning Ordinances, Subdivision Regulations, and Building Codes. (3) F, S
Analysis of zoning ordinances, subdivision regulations, building codes, and other planning implementation techniques relative to local development.

442 Environmental Planning. (3) F
Environmental planning problems, including flood plains, water quality and quantity, solid and hazardous waste, air quality, landslides, and noise. Field trips. Prerequisite: PUP 301 or instructor approval.

444 Preservation Planning. (3) S
History, theory, and principles of historic preservation. Emphasis on legal framework and methods practiced. Lecture, off-campus field study. Prerequisite: instructor approval.

445 Women and Environments. (3) F
Examines the role women play in shaping the built environment; ways built/natural forms affect women's lives. Focus on contemporary U.S. examples. Prerequisite: upper division or graduate status. *General studies: C.*

452 Ethics and Professional Practice. (3) S
Ethical problems and issues in planning, professional practice, and decision making. Prerequisite: department major or instructor approval. *General studies: L2.*

461 Urban Planning V. (5) F
Comprehensive planning: collection and analysis of economic, social, and environmental data relevant to urban planning; development of land-use plans. Studio. Prerequisite: PLA/PUP 362 or instructor approval.

462 Urban Planning VI. (5) S
Final planning or design project: students select and develop projects relating to topics of individual interest or desired specialization. Studio. Prerequisite: PUP 461 or instructor approval.

475 Environmental Impact Assessment. (3) S
Criteria and methods for compliance with environmental laws; development of skills and techniques needed to prepare environmental impact statements/assessments.

484 Internship. (3) F, S, SS (SS1 only)
Full-time internship under the supervision of practitioners in the Phoenix area or other locale. Credit/no credit. Prerequisite: department major or instructor approval.

485 International Field Studies in Planning and Landscape Architecture. (1–12) F, S, SS
Organized field study of planning and landscape architecture in specified international locations. May be repeated for credit with department approval. Study abroad. Cross-listed as PLA 485.

510 Citizen Participation. (3) S
Theory and practice of citizen participation in planning. Examines and critiques participation techniques and roles of planners. Prerequisite: instructor approval.

520 Planning Theories and Processes. (3) F
Review of past and current theoretical developments related to social change perspectives, the role and ethics of planners. Prerequisite: instructor approval.

524 Planning Methods I: Planning Research Methods. (3) F
Tools useful for urban planning research; emphasis on research design and survey methods. Prerequisite: PUP 301 or instructor approval.

525 Urban Housing Analysis. (3) F
Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.

531 Planning and Development Control Law. (3) S
Case studies on police power, eminent domain, zoning, subdivision controls, exclusion, preservation, urban redevelopment, and aesthetic and design regulation.

532 Advanced Urban Planning Law. (3) S
Advanced study on selected issues in planning law, such as urban design controls, exclusionary practices, compensable regulation, and tax policy. Prerequisite: PUP 432 or instructor approval.

544 Urban Land Use Planning. (3) F
Theory and methods of urban land use planning, including the rational planning process, comprehensive, functional, and neighborhood plans. Prerequisite: PUP 301 or instructor approval.

546 Urban Design Policy. (3) N
Advanced study of local, state, and federal urban design policy. Cross-listed as PLA 546. Prerequisite: PLA/PUP 420.

561 Urban Design Studio. (4) N
Current urban form and urban landscape design problems within the Phoenix-centered region. Studio. Prerequisite: PLA/PUP 420 or instructor approval.

572 Planning Studio I: Data Inventory and Analysis. (4) F
Comprehensive planning workshop dealing with real community problems. Focus on the data gathering and analysis steps of the planning process. Prerequisite: Master of Environmental Planning student or instructor approval.

574 Planning Studio II: Options and Implementation. (4) S
Comprehensive planning workshop dealing with real community problems. Focus on the development of options, plan making, and plan implementation. Studio. Prerequisite: PUP 572 or instructor approval.

575 Environmental Impact Assessment. (3) S
Criteria and methods for compliance with environmental laws; development of skills and techniques needed to prepare environmental impact statements/assessments.

584 Internship. (3) F, S, SS (SS1 only)
Internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit.

622 Planning Methods II: Quantitative Planning Analysis. (3) S
Methods and models used as the basic quantitative techniques of urban, regional, and environmental planning and policy analysis. Prerequisites: PUP 424; statistics; instructor approval.

642 Land Economics. (3) F
Land use and locational impact of economic activity and the urban real property market. Prerequisite: instructor approval.

644 Public Sector Planning. (3) N
Urban fiscal problems and public goods provision in state and local governments. Prerequisites: instructor approval; 1 course in microeconomics.

NOTE: For the General Studies requirement, codes (such as L1, N3, C, and H), and courses, see pages 71–94. For graduation requirements, see pages 66–70. Omnibus courses are offered that are not listed in the catalog; see pages 44–45.

LANDSCAPE ARCHITECTURE

PLA 201 Landscape Architecture and Society. (3) F, S
The relevance of landscape architecture to the creation of humanized environments, with emphasis on natural factors.

261 Landscape Architecture I. (4) F
Reading the landscape: observing, experiencing, and graphically expressing the symbolic and aesthetic significance of natural landscapes. Studio. Cross-listed as PUP 261. Prerequisites: ADE 120; GPH 111.

264 Landscape Architecture II. (4) S
Landscape communication: communication techniques for urban planning and landscape architecture communication. Cross-listed as PUP 264. Prerequisites: ADE 120; PLA/PUP 261.

310 History of Landscape Architecture. (3) F
Physical record of human attitudes toward the land. Ancient through contemporary landscape planning and design. Cross-listed as APH 411. *General studies: H.*

322 Planning Methods Using Computers. (3) F
Planning methods using database, word processors, spreadsheets, CAD, and mapping packages on microcomputers. Lecture, lab. Cross-listed as PUP 322.

359 Resort Planning and Recreation Design. (3) F
Interrelationships of social, economic, and physical aspects of total tourist resort design; emphasis on physical development of tourist centers and resort areas.

361 Landscape Architecture III. (5) F
Site planning: analysis of natural and cultural features; site systems and implications for plan making and design. Studio. Cross-listed as PUP 361. Prerequisite: department major or instructor approval.

362 Landscape Architecture IV. (5) S
Site design: site specific design of configured space by the creative development of form. Studio. Prerequisite: department major or instructor approval.

363 Landscape Planting Design. (3) F
Functional and aesthetic use of plants in arid region landscape design. Design philosophies are explored through planting design problems. Studio. Prerequisite: PLA/PUP 362 or instructor approval.

420 Theory of Urban Design. (3) F
Analysis of the visual and cultural aspects of urban design. Theories and techniques applied to selected study models. Cross-listed as PUP 420. Prerequisite: Junior standing. *General studies: HU.*

442 Landscape Construction I. (3) F
Landscape constructions focusing on landform transformations. Topics include landform analysis, grading, and earthwork. Studio. Prerequisite: admission to department's professional level or instructor approval.

443 Landscape Architecture Theory and Criticism. (3) S
Landscape architecture theories and projects are critically analyzed to evaluate validity of design and contribution to society. Prerequisites: PLA 310, 361, 420; PUP 412.

444 Landscape Construction II. (3) S
Characteristics of materials and methods used in landscape architectural construction. Studio. Prerequisite: PLA 442 or instructor approval.

461 Landscape Architecture V. (5) F
Landscape ecological planning: collection and application of ecological data relevant to planning and design at landscape scale. Studio. Prerequisite: PLA/PUP 362 or instructor approval.

462 Landscape Architecture VI. (5) S
Urban design: Analysis and design of the contemporary city emphasizing cultural and environmental influences of urban form. Prerequisite: department major or instructor approval.

484 Internship. (3) F, S, SS (SS1 only)
Full-time internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit. Prerequisite: department major or instructor approval.

485 International Field Studies in Planning and Landscape Architecture. (1–12) F, S, SS
Organized field study of planning and landscape architecture in specified international locations. May be repeated for credit with department approval. Study abroad. Cross-listed as PUP 485.

546 Urban Design Policy. (3) N
Advanced study of local, state, and federal urban design policy. Cross-listed as PUP 546. Prerequisite: PLA/PUP 420.

ENVIRONMENTAL RESOURCES

ERS 130 Soils and Environmental Quality. (4) F, S
Introduction to soil resources, their physical and chemical properties, classification energy dynamics, and the role they play in environmental quality. Lecture, lab.

225 Soils. (3) F
Fundamental properties of soils and their relation to plant growth and the nutrition of man and animals. Relation of soils to environmental quality. Prerequisite: CHM 101 or 113 or equivalent.

226 Soils Laboratory. (1) F
Selected exercises to broaden the background and understanding of basic soil principles. Lab. Corequisite: ERS 225.

246 Natural Resource Conservation. (3) S
Effective starting spring 1997; replaces ERS 346.
A global perspective on the conservation of wildland and agricultural resources. Development/resource conservation interrelationships. *General studies: G.*

332 Agricultural Chemicals. (3) N
Composition, properties, and use of agricultural commercial fertilizers and pesticides and their effects on soil, air, and water quality.

333 Water Resources Management. (3) S
Sources, their development, and conservation in arid regions for agricultural, natural resources, and urban uses. Prerequisite: CHM 101 or 113.

346 Natural Resource Conservation. (3) S
Effective through fall 1996; to be replaced by ERS 246.
A global perspective on the conservation of wildland and agricultural resources. Development/resource conservation interrelationships. *General studies: G.*

350 Environmental Statistics. (3) F
Statistical methods with applications in natural resource management and environmental conservation. Prerequisite: CSE 180, MAT 117. *General studies: N2.*

360 Range Ecosystem Management. (4) F
Interrelationships between vegetation, soils, and grazing animals. Evaluation of grazing animal impact (livestock and wildlife). Multiple use of rangeland resources. Lecture, recitation. Prerequisites: BIO 320 and ERS 346 *or* equivalents.

365 Watershed Management. (3) N
Hydrologic, physical, biological, and ecological principles applied to watershed management. Impact of ecosystem manipulations on water yield and quality. 1 weekend field trip. Prerequisites: ERS 225, 346.

370 Forest Ecosystem Dynamics. (3) S
Dynamics of forest ecosystem with applications from landscape ecology. Silvicultural principles, measurements, and multiple use of forests. Field trips required. Lecture, lab. Prerequisites: BIO 320; ERS 346, 350.

402 Range Habitat Inventory. (4) S
Vegetation sampling and inventory as related to animal-habitat relations. Lecture, lab, 1 weekend field trip. Prerequisites: CSE 180, ERS 350, 360, department major, or instructor approval.

407 Range Plants and Habitats. (4) F
The distribution, ecological characteristics, identification of key plants, and values of habitats on western rangelands. Laboratory emphasis on grass identification. Lecture, lab. Prerequisite: BOT 370 or equivalent.

410 Wildlife Habitat Relations. (3) N
Interactions among animal populations and their habitat. Systems simulation of population dynamics as influenced by competition and management strategies. Lecture, 1 weekend field trip. Prerequisite: ERS 360.

420 Range Habitat Improvements. (3) S
Techniques of restoration ecology applied for the improvement of arid and semiarid rangelands with associated riparian habitats. Weekend field trips. Prerequisite: ERS 360.

425 Soil Classification and Management. (3) N
Principles of soil genesis, morphology, and classification. Management and conservation practices will be presented. Prerequisite: ERS 225.

433 Riparian Ecosystem Management. (3) N
Examination of the functions and components that make up riparian ecosystems and the management of these ecosystems. Lecture, field trip. Prerequisite: ERS 225 or instructor approval.

446 Soil Fertility. (3) S
Ability of soils to retain and supply plant nutrients. Reactions of fertilizers in soils. Prerequisites: ERS 225, 226.

448 Soil Ecology. (3) N
Soils viewed in an ecosystem context, soil-plant relationships, nutrient budgets, and abiotic factors that influence soil processes. Prerequisites: BIO 320 and ERS 225 and 226 *or* instructor approval.

452 Soil, Water, and Irrigation. (3) N
Water measurement, conveyance, and conservation, with emphasis on crop production and soil-plant water relations. Prerequisite: ERS 225.

460 Applied Systems Ecology. (3) N
The systems approach applied to analysis and management of natural resource ecosystems. Use of simulation models. Prerequisites: ERS 350 or equivalent; 1 course in ecology.

470 Land Reclamation. (**3**) N
Problems of reestablishing vegetation on disturbed sites. Special revegetation techniques, surface modifications, and government regulations. 1 weekend field trip. Prerequisites: ERS 407 and 420 and 446 and 448 *or* instructor approval.

475 Wildlife and Range Animal Management. (3) S
Principles and techniques for management of domestic and nondomestic animals using rangeland ecosystems. Emphasis on practical applications of management. Weekend field trips. Prerequisite: instructor approval.

480 Natural Resource Planning. (3) S
Planning for management and conservation of wildland ecosystems. Ecological, economic, and social constraints on long-term sustainable resource development. Computer tools for resource planning. Lecture, 1 weekend field trip. Prerequisites: ERS 402 or equivalent; senior standing.

485 GIS in Natural Resources. (3) F
Principles of Geographic Information Systems (GIS) utilized in natural resource management. Use of computers for spatial analysis of natural resources. Lecture, lab. Prerequisite: CSE 180 or equivalent.

486 Remote Sensing in Environmental Resources. (4) S
Principles and application of remote sensing technologies in natural resource management. Integration of computerized data from aerial photography and LanSat imagery in resource management. Lecture, lab. Prerequisite: ERS 485 or equivalent.

490 Recent Advances in Environmental Resources. (1) N
Current literature and significant developments involving environmental resources. May be repeated for credit.

540 Plant Responses to Environmental Stresses. (3) N
Reaction of plants to environmental stresses; herbivores, fire, pesticides, mechanical treatments, aerial pollutants, and soil amendments. 1 weekend field trip. Prerequisites: BOT 360 and ERS 420 *or* instructor approval.

548 Plants, Soils, and Environmental Quality. (3) N
Effects of air quality on plants and soils, and their role in removing contaminants from the atmosphere. Prerequisite: ERS 225.

550 Vegetation Dynamics. (4) F
Dynamics of vegetation emphasizing concepts of ecological succession, applications of landscape ecology, and impacts of herbivory. Field trips required. Lecture, lab.

553 Advanced Animal Nutrition. (4) F
Metabolic and physiological interactions of nutrients in wild and domesticated animals consuming natural feeds. Lecture, lab.

560 Systems Ecology. (3) N
Quantitative description and mathematical modeling of ecosystem structure and function. Techniques for model construction and simulation. Lecture, lab. Prerequisites: ERS 350 or equivalent; computer programming; 6 hours in ecological studies.

HOUSING AND URBAN DEVELOPMENT

HUD 161 Graphic Communication I. (3) F, S
Development of drawing skills and understanding of the graphic communication systems used by planning, homebuilding, and landscape architecture professionals.

162 Graphic Communication II. (3) F, S
Development of sketching techniques and watercolor application used in concept development and final presentation. Prerequisite: HUD 161.

201 Introduction to Housing and Urban Development. (3) S
Perspectives and issues concerning HUD. Guest lectures by interdisciplinary faculty and private, public, and non-profit practitioners.

301 Housing and Community Design and Development. (3) F
Single and multi-family housing, residential neighborhoods, and planned communities. Affordability in owner-occupied and rental housing. First-time, move-up, and adult markets.

302 Housing Production Process. (3) S
Development feasibility analysis, finance, contracts, land acquisition, community and permit presentation and negotiation, scheduling, cost control, marketing, and sales.

361 Housing and Urban Development Studio I: Residential Design and Development. (2) F
Affordable residential design, development, and production process. Studio. Pre- or corequisites: HUD 301, 363; upper-division HUD major.

362 Housing and Urban Development Studio II: Community Design and Development. (2) S
Neighborhood and new community design and development process. Studio. Pre- or corequisites: HUD 301, 361, 363, 364; upper-division HUD major.

363 Housing and Urban Development Seminar I: Residential Design and Development. (3) F
Affordable residential design, development, and production process. Seminar. Pre- or corequisites: HUD 301, 361; upper-division HUD major.

364 Housing and Urban Development Seminar II: Community Design and Development. (3) S
Neighborhood and new community design and development process. Seminar. Pre- or corequisites: HUD 301, 361, 362, 363; upper-division HUD major.

401 Assisted Housing. (3) F
Publicly-subsidized and non-profit housing. Policy, implementation, and administration. FHA, Section 8, FmHA, projects and scatter site, and tax considerations.

402 Community Revitalization: Problems and Strategies. (3) S
Public policy and strategies for neighborhood revitalization and community renewal. Preservation and adaptive reuse, gentrification, neighborhood safety, and related socio-economic concerns.

403 Advanced Topics in Housing and Urban Development. (3) F, S
Varying topics, such as manufactured housing, homelessness, mortgage and finance in housing, housing abroad, marketing housing, and sustainable community development.

461 Housing and Urban Development Studio III: Comprehensive Housing Development Process. (2) F
Comprehensive development process simulation. Feasibility analysis, finance, design, community and permit presentation, construction, cost management, and marketing. Studio. Pre- or corequisites: HUD 302, 463; upper-division HUD major.

462 Housing and Urban Development Studio IV: Neighborhood Revitalization Process. (2) S
Housing rehabilitation, neighborhood revitalization, and urban infill. CDBG, empowerment-enterprise zoning, code enforcement, citizen participation, etc. Studio. Pre- or corequisites: HUD 401, 402, 464; upper-division HUD major.

463 Housing and Urban Development Seminar III: Comprehensive Housing Development Process. (3) F
Comprehensive development process simulation. Feasibility analysis, finance, design, community and permit presentation, construction and cost management, and marketing. Seminar. Pre- or corequisites: HUD 302, 461; upper-division HUD major.

464 Housing and Urban Development Seminar IV: Neighborhood Revitalization Process. (3) S
Housing rehabilitation, neighborhood revitalization, and urban infill. CDBG, empowerment-enterprise zoning, code enforcement, citizen participation, etc. Seminar. Pre- or corequisites: HUD 401, 402, 462; upper-division HUD major.

PLANNING AND ENVIRONMENTAL DESIGN

EPD 700 Interdisciplinary Research Methods. (3) F
Introduction to the philosophy and methodology of interdisciplinary research in environmental design and planning. Seminar.

710 Current Research in Design. (3) S
Review and critical evaluation of contemporary literature and method in architecture, building science, interior design, industrial design, and landscape architecture. Seminar.

712 Current Research in Planning. (3) S
Review and critical evaluation of contemporary literature and method in environmental planning, landscape ecology, urban design, and urban and regional planning. Seminar.

714 Current Research in History, Theory, and Criticism. (3) S
Review and critical evaluation of contemporary literature and method in the theory and history of architecture, design, and planning. Seminar.

Omnibus Courses: See pages 44–45 for omnibus courses that may be offered.

NOTE: For the General Studies requirement, codes (such as L1, N3, C, and H), and courses, see pages 71–94. For graduation requirements, see pages 66–70. Omnibus courses are offered that are not listed in the catalog; see pages 44–45.