

College of Architecture and Environmental Design

John Meunier, M.Arch.
Dean



College of Architecture and Environmental Design/North Wing

John MacIsaac photo

School of Architecture.....121
School of Design128

**School of Planning
and Landscape Architecture**137

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; Materials Resource Center; 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 more than 30,000 books, periodicals, and reference materials for students, faculty, and the professional community. The library's special collections include archives of Blaine Drake, Victor Olgyay, Calvin Straub, Will Bruder, and others, as well as research materials on Paolo Soleri and Frank Lloyd Wright. The Alternative Energy Collection and the Materials Resource Center provide additional sources for research.

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 special laboratories, including 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 Herberger Center for Design Excellence; and the Joint Urban Design Program, which also has a studio at the ASU Downtown Center. The Media Center includes traditional graphics and audiovisual equipment as well as port-

able 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.

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. Students who change majors to transfer into the college or one of its program areas must have a minimum cumulative GPA of 2.50.

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 500 or higher for international students whose native language is not English.

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

College of Architecture and Environmental Design Baccalaureate Degrees and Majors

Major	Degree	Administered by
Architectural Studies	B.S.D.	School of Architecture
Design Science ¹	B.S.D.	School of Design
Environmental Resources Concentration: natural resource management	B.S.	School of Planning and Landscape Architecture
Graphic Design	B.S.D.	School of Design
Housing and Urban Development	B.S.D.	School of Planning and Landscape Architecture
Industrial Design	B.S.D.	School of Design
Interior Design ²	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

¹ Applications for this program are not being accepted at this time.

² This major requires more than 120 semester hours to complete.

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 (B.S.D.) degree in Architectural Studies, Graphic Design, Housing and Urban Development, Industrial Design, and Interior Design; the B.S. degree in Environmental Resources; the Bachelor of Science in Landscape Architecture (B.S.L.A.) degree; and the Bachelor of Science in Planning degree. Applications for the B.S.D. degree in Design Science are not being accepted at this time. For more information, see the “College of Architecture and Environmental Design Baccalaureate Degrees and Majors” table.

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

MINORS

The faculty in the School of Planning and Landscape Architecture offer minors in Environmental Resources and Urban Planning. See “Minors,” page 138, for more information. The faculty in the School of Design also offer a minor in Interior Design History. See “Minor,” page 134, for more information.

GRADUATE PROGRAMS

The faculty in the College of Architecture and Environmental Design offer the National Architectural Accrediting Board-accredited professional degree Master of Architecture (M.Arch.); Planning Accreditation Board-accredited professional degree Master of Environmental Planning (M.E.P.); M.S. degree in Building Design; Master of Science in Design (M.S.D.); M.S. degree in Environmental Resources; and Ph.D. degree in Environmental Design and Planning. For more information, see the “College of Architecture and Environmental Design Graduate Degrees and Majors” table, page 119, and the *Graduate Catalog*.

UNIVERSITY GRADUATION REQUIREMENTS

In addition to fulfilling college and major requirements, students seeking a bachelor’s degree must meet all univer-

sity graduation requirements. See “University Graduation Requirements,” page 81.

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 under “General Studies,” page 85. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses. General Studies courses are listed in the “General Studies” section, page 87, in the course descriptions, in the *Schedule of Classes*, and in the *Summer Sessions Bulletin*.

COLLEGE DEGREE REQUIREMENTS

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.

MAJOR REQUIREMENTS

Students seeking the Bachelor of Science in Design degree must satisfactorily complete a curriculum of 120 or 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 B.S. degree in Environmental Resources requires 120 semester hours.

Students majoring in Interior Design must take 150 semester hours. All other majors require 120 hours.

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*. For more information, see “Graduation with Academic Recognition,” page 84.

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 2.00 and the conditions of probation have not

College of Architecture and Environmental Design Graduate Degrees and Majors

Major	Degree	Administered by
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
Design Concentrations: graphic design, industrial design, interior design	M.S.D.	School of Design
Environmental Design in Planning Concentrations: design; history, theory, and criticism; 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

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. For more information, see “Retention and Academic Standards,” page 77.

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

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. For more information, see “Retention and Academic Standards,” page 77.

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 justifica-

tion, 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. For more information, see “Incomplete,” page 74.

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. For more information, see “Grading System,” page 73.

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.

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. For university policy regarding religious holidays, see "Equal Opportunity and Affirmative Action," page 25.

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 use in instruction, publication, and exhibition.

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.

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.

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. Most states require that an individual intending to become an architect hold an accredited degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board (NAAB): (1) the Bachelor of Architecture, which requires a minimum of five years of study, and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor's degree or two years following a related preprofessional bachelor's degree. These professional degrees are structured to educate those who aspire to registration/licensure as architects.

The four-year preprofessional degree, where offered, is not accredited by NAAB. The preprofessional degree is useful for those wishing a foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment options in architecturally related areas. For more information, see "Accreditation and Affiliation," page 20.

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 higher 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

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. For information on affiliations maintained by the college, see "Accreditation and Affiliation," page 20.

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, IALD, 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 of Environmental Graphic Designers
 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) 480/965-3536
www.asu.edu/caed/Architecture

REGENTS' PROFESSOR COOK

PROFESSORS
 BOYLE, McCOY, MEUNIER, SCHEATZLE, UNDERHILL

RESEARCH PROFESSOR JONES

ASSOCIATE PROFESSORS
 HARTMAN, KROLOFF, KUPPER, LOOPE, McINTOSH,
 OZEL, SHEYDAYI, UNDERWOOD, ZYGAS

ASSISTANT PROFESSORS
 ELLIN, HAHN, MURFF, PETRUCCI, SOROKA,
 SPELLMAN, VAN DUZER

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

The faculty in the School of Architecture offer the Bachelor of Science in Design degree with a major in Architectural Studies.

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, as described in "Admission" below and "Degree Requirements," page 123. The professional program includes two years of upper-division study leading to the Bachelor of Science in Design and two years of graduate study leading to the Master of Architecture, as described in "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.

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 requirements must be met:

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").

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 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 2000–2001 upper-division programs.

Upper-Division Application Deadlines. *April 17, 2000.* Portfolio and application documents are due in the school office by 5:00 P.M.

June 2, 2000. If the spring 2000 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 2. 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 3, 2000. Acceptance notices are mailed no later than July 3.

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). 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. The student's name should be written in the upper right-hand corner.

Page 4. All college transcripts for both ASU and transfer work should be included through the fall 1999 semester. Copies are acceptable. An academic advisor forwards 2000 ASU transcripts. (Applicants wishing to transfer spring semester 2000 work are responsible for submitting these transcripts by June 2 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 2000 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 1–5) 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 3, 2000. 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 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 “General Studies,” page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

GRADUATION REQUIREMENTS

In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See “University Graduation Requirements,” page 81.

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 A¹**

First Year

Fall	
APH 100 Introduction to Environmental Design <i>HU, G, H</i>	3
ENG 101 First-Year Composition	3
PHI 103 Principles of Sound Reasoning <i>L1/HU</i>	3
or ECN 112 Microeconomic Principles <i>SB</i> (3)	
Approved elective	3
SB elective (<i>L1</i> if ECN taken)	3
Total	15

Spring	
ADE 120 Design Fundamentals I ²	3
ENG 102 First-Year Composition	3
MAT 210 Brief Calculus <i>NI</i>	3
Approved electives	6
Total	15

Second Year

Fall	
ADE 221 Design Fundamentals II ²	3
APH 200 Introduction to Architecture <i>HU, G</i>	3
PHY 111 General Physics <i>S1/S2</i> ³	3
PHY 113 General Physics Laboratory <i>S1/S2</i> ³	1
Approved electives	3

C elective	3
Total	16

Spring	
ADE 222 Design Fundamentals III ²	3
ANP 236 Introduction to Computer Modeling <i>N3</i>	3
PHY 112 General Physics <i>S1/S2</i> ⁴	3
PHY 114 General Physics Laboratory <i>S1/S2</i> ⁴	1
Approved elective	3
SB elective	3
Total	16
Option A 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.
Upper-Division Professional Program Requirements
Option A
Third Year**

Fall	
ADE 321 Architectural Studio I	4
APH 313 History of Western Architecture I <i>L2/HU*</i>	3
ATE 353 Architectural Construction	3
AVC 301 Architectural Communication	2
Approved elective	3
Total	15

Spring	
ADE 322 Architectural Studio II	5
ANP 331 Analysis and Programming	3
APH 314 History of Western Architecture II <i>L2/HU*</i>	3
ATE 361 Building Structures I	3
Total	14

Summer	
ARP 484 Clinical Internship	1
Total	1

Fourth Year

Fall	
ADE 421 Architectural Studio III	5
ATE 451 Building Systems I	3
ATE 462 Building Structures II	3
Professional elective	3
Total	14

Spring	
ADE 422 Architectural Studio IV	5
ATE 452 Building Systems II	3
Architectural history elective	3

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see “General Studies,” page 85. For graduation requirements, see “University Graduation Requirements,” page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see “Classification of Courses,” page 58.

Professional elective	3
Total	14
Option A upper-division total	58
B.S.D. option A minimum total	120

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

**Architectural Studies—B.S.D.
Lower-Division Requirements
Option B¹**

First Year

Fall

APH 100 Introduction to Environmental Design <i>HU, G, H</i>	3
ECE 100 Introduction to Engineering Design <i>N3</i>	4
ECN 112 Microeconomic Principles <i>SB</i>	3
or ECN 111 Macroeconomic Principles <i>SB</i> (3)	
ENG 101 First-Year Composition	3
MAT 270 Calculus with Analytic Geometry I <i>NI</i>	4
Total	17

Spring

ADE 120 Design Fundamentals I ²	3
ENG 102 First-Year Composition	3
MAT 271 Calculus with Analytic Geometry II <i>NI</i>	4
PHY 121 University Physics I: Mechanics <i>S1/S2</i>	3
PHY 122 University Physics Laboratory I <i>S1/S2</i>	1
Total	14

Second Year

Fall

ADE 221 Design Fundamentals II ²	3
APH 200 Introduction to Architecture <i>HU, G</i>	3
ECE 210 Engineering Mechanics I: Statics	3
MAT 272 Calculus with Analytic Geometry III <i>NI</i>	4
PHY 131 University Physics II: Electricity and Magnetism <i>S1/S2</i> ²	3
PHY 132 University Physics Laboratory II <i>S1/S2</i> ²	1
Total	17

Spring

ADE 222 Design Fundamentals III ²	3
ANP 236 Introduction to Computer Modeling <i>N3</i>	3
ECE 380 Probability and Statistics for Engineering Problem Solving <i>N2</i>	3
MAT 274 Elementary Differential Equations <i>NI</i>	3
Total	12
Option B lower-division total	60

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.

**Architectural Studies—B.S.D.
Upper-Division Professional Program Requirements
Option B**

Third Year

Fall

ADE 321 Architectural Studio I	4
APH 313 History of Western Architecture I <i>L2/HU</i> ¹	3
ATE 353 Architectural Construction	3
AVC 301 Architectural Communication	2

ECE 312 Engineering Mechanics II: Dynamics	3
Total	15

Spring

ADE 322 Architectural Studio II	5
ANP 331 Analysis and Programming	3
APH 314 History of Western Architecture II <i>L2/HU</i> ¹	3
ECE 313 Introduction to Deformable Solids	3
Total	14

Summer

ARP 484 Clinical Internship ²	4
Total	4

Fourth Year

Fall

ADE 421 Architectural Studio III	5
ATE 451 Building Systems I	3
ECE 300 Intermediate Engineering Design <i>LI</i>	3
ECE 351 Civil Engineering Materials	3
Total	14

Spring

ADE 422 Architectural Studio IV	5
ATE 452 Building Systems II	3
ECE 384 Numerical Analysis for Engineers I	2
SB, C elective	3
Total	13
Option B upper-division total	60
B.S.D. option B minimum total	120

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

² Internship is done over the summer between the third and fourth years.

**Master of Architecture
Graduate-Division Professional Program Requirements**

Fifth Year

Fall

ADE 521 Advanced Architectural Studio I	5
APH 505 Foundation Theory Seminar	3
ATE 553 Building Systems III	3
ATE 563 Building Structures III	3
Total	14

Spring

AAD 551 Architectural Management I	3
ADE 522 Advanced Architectural Studio II	5
APH 515 Current Issues and Topics	3
Professional elective*	3
Total	14

Sixth Year

Fall

ADE 621 Advanced Architectural Studio III	5
ANP 681 Project Development	3
ATE 556 Building Development	3
Professional elective*	3
Total	14

Spring

AAD 552 Architectural Management II	3
ADE 622 Advanced Architectural Studio IV	5

Approved elective	3
Professional elective*	3
Total	14
Graduate division total	56

* At least one professional elective must be a CAD course.

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.

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 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 domestic and international.

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.

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.

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.

The courses required in the upper-division and graduate levels of the professional program are not open to non-

majors and students not admitted to the upper-division program.

GRADUATE PROGRAMS

The faculty of the School of Architecture offer a Master of Architecture and a M.S. degree in Building Design. Also, a dual career program, Master of Architecture/Master of Business Administration, has been established in cooperation with the College of Business. Also offered is a college-wide, interdisciplinary Ph.D. degree in Environmental Design and Planning with concentrations in design; history, theory, and criticism; and planning. For more information, see the *Graduate Catalog*.

ARCHITECTURAL ADMINISTRATION AND MANAGEMENT (AAD)

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.

AAD 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.

AAD 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.

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

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

AAD 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.

AAD 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.

AAD 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.

ARCHITECTURAL DESIGN AND TECHNOLOGY STUDIOS (ADE)

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.

ADE 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. Prerequisite: ADE 120.

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

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

ADE 321 Architectural Studio I. (4) F

Introductory building design problems. Emphasis on design process, communication methods, aesthetics, construction, and technology. Lecture, studio, field trips. Prerequisite: admission to upper division. Corequisites: ATE 353; AVC 301.

ADE 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, field trips. Prerequisite: ADE 321. Corequisite: ANP 331.

ADE 421 Architectural Studio III. (5) F

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

ADE 422 Architectural Studio IV. (5) S

Topical design problems of intermediate complexity, including interdisciplinary problems. Lecture, studio, field trips. Prerequisite: ADE 322 for Architectural Studies majors; permission of the school director for other majors in the college.

ADE 510 Foundation Architectural Studio. (6) SS

Fundamentals of architectural design, methodology, visualization, and representation. Lecture, studio, field trips. Prerequisite: admission to graduate program.

ADE 511 Core Architectural Studio I. (6) F

Application of design fundamentals in architectural problems, including construction, technology, programmatic and environmental determinants. Lecture, studio, field trips. Prerequisites: ADE 510; APH 200, 509. Corequisite: ATE 353.

ADE 512 Core Architectural Studio II. (6) S

Application of architectural design fundamentals to increasingly complex problems, including specific sites and activities. Lecture, studio, field trips. Prerequisite: ADE 511.

ADE 521 Advanced Architectural Studio I. (5) F

Design problems emphasizing theory, aesthetics, and tectonics as influences on architectural form. Lecture, studio, field trips. Prerequisite: admission to graduate program.

ADE 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, field trips. Corequisites: AAD 551; ADE 521.

ADE 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, field trips. Corequisites: AAD 552; ADE 522; instructor approval.

ADE 622 Advanced Architectural Studio IV. (5) S

Individual, student-initiated project reflecting a culminating synthesis of architectural ideas. Studio. Prerequisites: ADE 621; ANP 681. Corequisite: AAD 681.

ADE 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)

ANP 236 Introduction to Computer Modeling. (3) F, S

Fundamentals of computer operation, geographic information systems, geometric modeling of three-dimensional forms and rendering of light, mathematical modeling of processes using spreadsheets. Lab. Cross-listed as DSC/PUP 236. Credit is allowed for only ANP 236 or DSC 236 or PUP 236. Prerequisite: major in the College of Architecture and Environmental Design. *General Studies: N3.*

ANP 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.

ANP 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.

ANP 475 Computer Programming in Architecture. (3) F, S

Computer programming for architectural problems and applications. Lecture, lab. Prerequisite: CSE 183 or equivalent.

ANP 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.

ANP 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.

ANP 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.

ANP 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.

ANP 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.

ANP 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.

ANP 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.

ANP 681 Project Development. (3) F 2000

Definition and elaboration of major ideas for implementation in ADE 622 Advanced Architectural Studio IV in relation to contemporary theory and practice. Seminar. Prerequisite: ADE 522.

ARCHITECTURAL PHILOSOPHY AND HISTORY (APH)

APH 100 Introduction to Environmental Design. (3) F, S

Survey of environmental design: includes historic examples and the theoretical, social, technical, and environmental forces that shape them. Cross-listed as DSC/PUP 100. Credit is allowed for only APH 100 or DSC 100 or PUP 100. *General Studies: HU, G, H.*

APH 200 Introduction to Architecture. (3) F, SS

Survey of issues and polemics affecting current architectural theory and practice. Lecture, discussion. *General Studies: HU, G.*

APH 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. Prerequisite: nonmajor. *General Studies: HU, G, H.*

APH 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.*

APH 304 American Architecture. (3) N

Architecture in the United States from earliest colonial times to present. Prerequisite: nonmajor. *General Studies: HU.*

APH 305 Contemporary Architecture. (3) N

Europe and America from the foundations of the modern movement to the present. Prerequisite: nonmajor. *General Studies: HU.*

APH 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: L2/HU.*

APH 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. *General Studies: L2/HU.*

- APH 411 History of Landscape Architecture.** (3) F
Physical record of human attitudes toward the land. Ancient through contemporary landscape planning and design. Cross-listed as PLA 210. Credit is allowed for only APH 411 or PLA 210. *General Studies: H.*
- APH 414 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 PUP 412. Credit is allowed for only APH 414 or PUP 412. *General Studies: H.*
- APH 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.*
- APH 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.
- APH 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.*
- APH 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.*
- APH 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.*
- APH 447 20th-Century Architecture II.** (3) S
Developments in architecture since the international style. Prerequisite: APH 446. *General Studies: HU.*
- APH 505 Foundation Theory Seminar.** (3) F
Foundation of conceptual architectural inquiry, stressing the reciprocal and interdependent relationship between design and theory. Lecture, seminar.
- APH 509 Foundation Seminar.** (3) SS
Historical, technical, theoretical, environmental, and professional issues in architecture. Lecture, seminar, field trips. Prerequisite: ADE 510.
- APH 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.
- APH 515 Current Issues and Topics.** (3) S
Critical examination of current architectural issues, topics, and discourse. Prerequisite: APH 505.
- APH 681 Architectural Theory.** (3) S
Examination of architectural theory. Emphasis on application of theory to practice. Seminar. Prerequisite: instructor approval.
- APH 682 Architectural Criticism.** (3) F
Examination of architectural criticism, emphasizing specific methods of criticism and their application for aesthetic judgment. Seminar. Prerequisite: instructor approval.
- APH 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.

ARCHITECTURE PROFESSIONAL STUDIES (ARP)

- 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.
- ARP 484 Clinical Internship.** (1–12) SS
Full-time internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit. Prerequisite: instructor approval.

- ARP 584 Clinical Internship.** (1–12) SS
Structured practical experience following a contract or plan, supervised by faculty and practitioners.
- ARP 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.

ARCHITECTURAL TECHNOLOGY (ATE)

- ATE 353 Architectural Construction.** (3) F
Materials and methods of construction. Aesthetic, code, and cost considerations. Lecture, lab. Corequisite: ADE 321.
- ATE 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.
- ATE 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.
- ATE 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.
- ATE 453 Advanced Architectural Construction.** (3) N
Study of construction materials assembly and architectural detailing. Lecture, lab. Prerequisite: ATE 353.
- ATE 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.
- ATE 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.
- ATE 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.
- ATE 522 Desert Habitation Technology.** (3) N
Analysis of habitation approaches in nontechnological and technological societies arising from the nature of desert areas.
- ATE 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.
- ATE 533 Building Performance Simulation and Visualization.** (3) S
Simulating, analyzing, and evaluating building energy, lighting, and acoustic systems using computer software packages. Lecture, lab.
- ATE 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.
- ATE 550 Passive Cooling and Heating I.** (3) S
Theory, analysis, and application of passive and low-energy systems for thermal comfort in buildings emphasizing heating. Prerequisite: ATE 521.
- ATE 551 Passive Cooling and Heating II.** (3) F
Theory, analysis, and application of passive and low-energy heating systems for thermal comfort in buildings emphasizing cooling. Prerequisite: ATE 550.
- ATE 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.
- ATE 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.

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

ATE 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.

ATE 556 Building Development. (3) F

Comprehensive design development through the understanding and integration of building materials and systems. Lecture, seminar. Prerequisites: AAD 551; ATE 462, 553; level AutoCAD proficiency.

ATE 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.

ATE 558 Bioclimatic Parameters. (3) S

Theory, analysis, and application of energy-related parameters of site, climate, human comfort, and building program for design synthesis.

ATE 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.

ATE 561 Energy Analysis Techniques. (3) F

Mathematical models of building envelope and comfort conditioning systems as bases for optimization techniques. Prerequisite: ATE 560.

ATE 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.

ATE 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.

ATE 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.

ATE 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.

ATE 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. Prerequisite: ATE 451 or 521.

ARCHITECTURAL COMMUNICATION (AVC)**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.

AVC 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.

AVC 301 Architectural Communication. (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.

AVC 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.

AVC 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.

AVC 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.

School of Design**Jacques Giard***Director***(AED 154B) 480/965-4135****Fax 480/965-9717****www.asu.edu/caed/Design**

PROFESSORS

GIARD, KROELINGER, REZNIKOFF

ASSOCIATE PROFESSORS

BRANDT, CUTLER, DETRIE, JOHNSON, McDERMOTT,

NIELSEN, PATEL, RATNER,

SANFT, WITT

ASSISTANT PROFESSORS

BERNARDI, HARMON-VAUGHAN, NICKERSON,

NIEDERHELMAN, RANDALL, ROTHSTEIN

Information about the School of Design may be obtained via the Web address provided or by sending electronic mail to jacques.giard@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 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

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

Graphic Design. The Graphic Design program educates and develops students for both the graphic design profession and graduate work. The goal of the faculty is to offer the best graphic design education, allowing the graduating student every option available. Studio classroom projects are

planned to strengthen and refine students' proficiency in the language, process, and technical aspects of the profession. Projects are intended to help students think critically as individuals and in group situations. Students opting for the profession can expect to work in the areas of ad design, brand identity, broadcast graphics, corporate identity, environmental graphics, informational graphics, in-house corporate design, museum informational design, publication design, Web site design, and others. Students pursuing graduate studies can expect to be equally well prepared with critical and analytical thinking skills coupled with a diversified portfolio. The program is dedicated to a comprehensive education in graphic design as it relates to the changing communication standards of today and the future.

Industrial Design. The program in Industrial Design prepares creative individuals to design 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 free-hand 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 Graphic Design, 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 for applicability to this curriculum. To be applicable, 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 Graphic Design, Industrial Design, or Interior Design. In addition to the portfolio review, the faculty in charge of the Interior Design program conduct a 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," below.

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.

GRADUATE PROGRAMS

The faculty in the School of Design offer a collegewide, interdisciplinary Ph.D. degree in Environmental Design and Planning with concentrations in design; history, theory, and criticism; and planning. For more information, see the *Graduate Catalog*.

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 2000–2001 upper-division programs.

Upper-Division Application Deadlines. The following dates and procedures apply to Industrial and Interior Design portfolio submission only. Information regarding portfolio submission for Graphic Design is listed separately.

April 17, 2000. 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

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

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 2, 2000. If the spring 2000 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 2. 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 3, 2000. Acceptance notices are mailed no later than July 3.

March 15, 2000. The application deadline for Graphic Design is March 15, 2000. In addition to the portfolio submittal, Graphic Design requires an aptitude test, which is part of the application packet. Application packets can be obtained from the Academic Advising office one month before the due date. Students may obtain their application results by contacting the Program Coordinator for Graphic Design at the end of the first week of April. Acceptance notices will be mailed to admitted students.

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.

Graphic Design Requirements Application. Individual applicants are responsible for obtaining the Graphic Design Application Packet by contacting the College of Architecture and Environmental Design Academic Advising Office (ARCH 141). Application materials are submitted in a portfolio organized by the individual applicant. The student's name must be affixed to the outside, with completed materials appearing in the following order:

1. application to the Graphic Design upper-division program;
2. "Commonly Asked Questions" form; and
3. the Graphic Design Aptitude Test. The packet contains complete instructions for completing the standard test, which is to be addressed by each applicant. This test requires the completion of five problems that will be reviewed by the faculty and that will become the portfolio of materials considered for admission to the upper-division program.

Industrial and Interior Design 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 1999 semester. Copies are acceptable. An academic advisor forwards 2000 ASU transcripts. (Applicants wishing to transfer spring semester 2000 work are responsible for submitting these transcripts by June 2 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 2000 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 1–5) remain the property of the College of Architecture and Environmental Design. However, the remainder of the 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 3, 2000. 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 Graphic Design and 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.

Graphic Design

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

Lower-division program.....	30
Upper-division program.....	90
Total.....	120

The lower-division curriculum balances a foundation in academic subjects such as English, numeracy, and computer technology with departmental foundation courses that include history and theory, as well as studio courses in drawing and design fundamentals as they relate to conceptual design. Students apply for entry into the professional program after fulfilling the first year School of Design core foundation courses. The upper-division curriculum includes studio work in graphic design and its relationship to problem solving at multiple scales. Projects are intended to educate students to think critically as individuals and as team participants in small and large corporate facilities. A formal eight-week summer internship is included in the professional program, which is coordinated by the faculty. Students intern in a variety of settings, including in-house corporate design, publication design, ad design agencies, and others.

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See “General Studies,” page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

Graduation Requirements. In addition to fulfilling college and major requirements for this professional degree, students must meet all university graduation and college degree requirements. See “University Graduation Requirements,” page 81.

**Graphic Design—B.S.D.
Lower-Division Requirements¹**

First Year

Fall	
DSC 101 Design Awareness <i>HU, G</i>	3
DSC 121 Design Principles I.....	3
ENG 101 First-Year Composition.....	3
or ENG 105 Advanced First-Year Composition (3) if qualified	3
N1 elective	3
N3 elective	3
Total	15
Spring	
DSC 120 Design Drawing	3
DSC 122 Design Principles II.....	3
ENG 102 First-Year Composition.....	3
Approved elective ²	3
SB elective	3
Total	15

Lower-division total30

¹ Transfer credits for the lower-division program must be equivalent in both content and level of offering. Samples of studio work to be accepted for credit must be provided for evaluation through appointment with the Graphic Design coordinator in AED 154.

² A list of courses that fulfill approved electives is available from the college academic advisor.

**Graphic Design—B.S.D.
Upper-Division Requirements**

Second Year

Fall	
DSC 494 ST: Finding Purpose: Survival in Design.....	3
GRA 283 Letterform I ¹	3
GRA 284 Visual Communication I ¹	3
L1 elective.....	3
SB elective	3
Total	15
Spring	
GRA 286 Visual Communication II ¹	3
GRA 287 Letterform II ¹	3
Design elective.....	3
HU, H elective.....	3
S1, S2 elective with laboratory I.....	4
Total	16

Third Year

Fall	
GRA 318 History of Graphic Design <i>HU</i>	3
GRA 383 Typography I ¹	3
GRA 386 Visual Communication III ¹	3
Approved electives ²	6
Total	15
Spring	
DSC 483 Preinternship Seminar ¹	1
GRA 345 Design Rhetoric L2 ¹	3
GRA 385 Typography II ¹	3
GRA 387 Visual Communication IV ¹	3
C elective.....	3
Upper-division design elective.....	3
Total	16

Summer	
DSC 484 Internship ¹	3
Total	3

Fourth Year

Fall	
GRA 481 Visual Communication V ¹	3
GRA 494 ST: Graphic Design.....	3
S1, S2 elective with laboratory II.....	4
Upper-division design elective.....	3
Total	13
Spring	
GRA 482 Visual Communication VI ¹	3
GRA 494 ST: Graphic Design.....	3
Approved electives ²	3

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see “General Studies,” page 85. For graduation requirements, see “University Graduation Requirements,” page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see “Classification of Courses,” page 58.

Upper-division approved elective ²	3
Total	12
Upper-division total	90
B.S.D. minimum total	120

¹ Most studio courses and some lecture courses are sequential. They must be taken in and may be offered only during the semester noted.

² A list of courses that fulfill approved electives is available from the college academic advisor.

Industrial Design

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

Lower-division program	61
Upper-division program	59
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 "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See "University Graduation Requirements," page 81.

Industrial Design—B.S.D. Lower-Division Requirements¹

First Year

Fall	
DSC 101 Design Awareness <i>HU, G</i>	3
DSC 121 Design Principles I	3

ECN 112 Microeconomic Principles <i>SB</i> ²	3
ENG 101 First-Year Composition	3
or ENG 105 Advanced First-Year Composition (3) if qualified	
PGS 101 Introduction to Psychology <i>SB</i> ²	3
Total	15

Spring

DSC 120 Design Drawing	3
DSC 122 Design Principles II	3
ENG 102 First-Year Composition	3
IND 194 ST: Drafting for Industrial Design	3
MAT 170 Precalculus <i>NI</i>	3
Total	15

Second Year

Fall

DSC 236 Introduction to Computer Modeling <i>N3</i>	3
IND 227 Visual Methods for Problem Solving	3
IND 242 Materials and Design	3
IND 260 Industrial Design I	3
IND 316 20th-Century Design <i>IHU, H</i>	3
Total	15

Spring

COM 225 Public Speaking <i>L1</i>	3
or approved program elective (3)	
IND 228 Imaging and Visualization..... (3)	3
IND 243 Process and Design	3
IND 261 Industrial Design II	3
PHY 111 General Physics <i>S1/S2</i> ³	3
PHY 113 General Physics Laboratory <i>S1/S2</i> ³	1
Total	16
Lower-division total	61

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 TGECC satisfied.

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

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

Third Year

Fall

DSC 344 Human Factors in Design	3
IND 327 Presentation Graphics	3
IND 354 Principles of Product Design	3
IND 360 Industrial Design III	5
Total	14

Spring

GRA 328 Graphic Design	3
IND 361 Industrial Design IV	5
MKT 300 Principles of Marketing	3
S1, S2 elective with approved laboratory	4
Total	15

Summer

DSC 484 Internship	2
Total	2

Fourth Year

Fall

ENG 301 Writing for the Professions <i>L1</i>	3
IND 460 Design Project I	5
IND 470 Professional Practice for Industrial Design <i>L2</i>	3

Approved HU, SB elective.....	3
Total	14
Spring	
IND 461 Design Project II	5
IND 474 Design Seminar.....	3
C elective*.....	3
Elective.....	3
Total	14
Upper-division total	59
B.S.D. minimum total	120

* A list of courses that fulfill approved program 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 that utilizes all previous learning within and outside the professional program. The student’s 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 “General Studies,” page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See “University Graduation Requirements,” page 81.

**Interior Design—B.S.D.
Lower-Division Requirements¹**

First Year

Fall

DSC 101 Design Awareness <i>HU, G</i>	3
DSC 121 Design Principles I ¹	3
ENG 101 First-Year Composition.....	3
or ENG 105 Advanced First-Year Composition (3) if qualified	
MAT 170 Precalculus <i>NI</i>	3
SB and C elective	3
Total	15

Spring

ARS 102 Art of the Western World II <i>HU, H</i>	3
DSC 120 Design Drawing ¹	3
DSC 122 Design Principles II ¹	3
ENG 102 First-Year Composition.....	3
or HU elective if ENG 105 is taken (3)	
PHY 111 General Physics <i>S1/S2</i> ²	3
PHY 113 General Physics Laboratory <i>S1/S2</i> ²	1
Total	16

Second Year

Fall

DSC 236 Introduction to Computer Modeling <i>N3</i>	3
INT 194 ST: Drafting for Interior Design	3
INT 223 Interior Design Issues and Theories <i>HU</i>	3
INT 235 User Needs and Behavior in Interior Design	3
Total	12

Spring

COM 225 Public Speaking <i>L1</i>	3
or approved L1 elective (3)	
INT 220 Media for Design Development ¹	3
INT 231 Concepts for Interior Design ¹	3
S1 or S2 elective with laboratory	4
Total	13
Lower-division total	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.

**Interior Design—B.S.D.
Upper-Division Requirements**

Third Year

Fall

DSC 344 Human Factors in Design.....	3
INT 310 History of Interior Design I <i>HU, H</i>	3
INT 340 Interior Codes: Public Welfare and Safety.....	3
INT 364 Interior Design Studio I	5
INT 366 Construction Methods in Interior Design	3
Total	17

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see “General Studies,” page 85. For graduation requirements, see “University Graduation Requirements,” page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see “Classification of Courses,” page 58.

Spring

DSC 483 Preinternship Seminar1
 INT 311 History of Interior Design II *HU, H*3
 INT 341 Interior Materials and Finishes3
 INT 365 Interior Design Studio II5
 INT 455 Environmental Control Systems3
 Total15

Summer

DSC 484 Internship3
 Total3

Fourth Year

Fall

ENG 301 Writing for the Professions *L1*3
 INT 412 History of Decorative Arts in Interiors *HU*3
 INT 442 Specifications and Documents for Interiors *L2*3
 INT 457 Acoustics for Interior Design3
 INT 464 Interior Design Studio III5
 Total17

Spring

INT 413 History of Textiles in Interior Design3
 INT 458 Lighting for Interior Design3
 INT 465 Interior Design Studio IV5
 SB elective3
 Total14

Fifth Year*

Fall

INT 422 Facilities Planning and Management I3
 INT 446 Furniture Design and Production3
 INT 466 Interior Design Studio V5
 Approved degree project elective3
 Total14

Spring

INT 423 Facilities Planning and Management II3
 INT 467 Interior Design Studio VI5

INT 472 Professional Practice for Interior Design3
 Approved degree project elective3
 Total14
 Upper-division total94
 B.S.D. minimum total150

* See "Fifth Year."

Fifth Year. During the fifth year, the student concentrates on research and application of that 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, graphic design, and architecture, thus furthering a real-life interdisciplinary problem-solving experience.

MINOR

Interior Design History

The minor in Interior Design History is available to students interested in design and culture. The courses designated for the minor are part of the professional studies in interior design within the School of Design. Moreover, the courses serve to inform the students about the importance of the global community, especially sociocultural groups, and the impact of the global community on the design of the interior environment.

The selected courses satisfy the minimum requirement (18 semester hours) for the minor. To enhance the understanding of the subject matter, the selected courses are sequential in nature and require certain prerequisites. Consequently, students should carefully note the semester in



Sophomore Steve Cowan chats with his mentor, staff member Mara Affre, about his choice of classes.

Tim Trumble photo

which any of these courses is offered. The only exception to this rule is INT 223.

Required Courses

DSC 101 Design Awareness <i>HU, G</i>	3
INT 223 Interior Design Issues and Theories <i>HU</i>	3
INT 310 History of Interior Design I <i>HU, H</i>	3
INT 311 History of Interior Design II <i>HU, H</i>	3
INT 412 History of Decorative Arts in Interiors <i>HU</i>	3
INT 413 History of Textiles in Interior Design	3
Total	18

The minor in Interior Design History is open to students majoring in: Architectural Studies, Art, Communication, Psychology, or Sociology and students in any College of Business major or the Bachelor of Interdisciplinary Studies program. All other majors are considered on an individual basis and approved by the coordinators of the Interior Design program within the School of Design. To pursue the minor in Interior Design History, students must have a minimum cumulative GPA of 2.50.

DESIGN (DSC)

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

DSC 101 Design Awareness. (3) F
Survey of cultural, global, and historical context for the design professions. *General Studies: HU, G.*

DSC 120 Design Drawing. (3) S
Drawing as language to explore and communicate ideas. Development of drawing aptitude as language and process for design thinking. 1 hour lecture, 5 hours studio.

DSC 121 Design Principles I. (3) F
Design as a language and process for creative thinking and realization. 1 hour lecture, 5 hours studio. Prerequisite: major in the College of Architecture and Environmental Design.

DSC 122 Design Principles II. (3) S
Continued exploration of design as a language and process for creative thinking and realization. 1 hour lecture, 5 hours studio. Prerequisite: DSC 121.

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

DSC 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.

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

DSC 484 Internship. (1–3) SS
Full-time summer internship under supervision of practitioners in the Phoenix area or other locales. Prerequisite: instructor approval.

DSC 494 ST: Special Topics. (3) F
(a) Finding Purpose: Survival in Design

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

DSC 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: INT 457 and 458 or equivalents.

DSC 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.

DSC 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.

DSC 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.

DSC 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.

DSC 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.

DSC 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.

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

DSC 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.

GRAPHIC DESIGN (GRA)

GRA 283 Letterform I. (3) F
Drawing of letterforms with focus on proportion and structure. Introduction to letterform nomenclature and classifications. 6 hours a week. Prerequisites: DSC 122; acceptance into Graphic Design program.

GRA 284 Visual Communication I. (3) F
Theoretical and applied studies in shape, drawing, and color. 6 hours a week. Prerequisite: GRA 283.

GRA 286 Visual Communication II. (3) S
Transition from theoretical to applied problems. Emphasis on refinement of visual skills. 6 hours a week. Prerequisites: GRA 284; acceptance into Graphic Design program. Corequisite: GRA 287.

GRA 287 Letterform II. (3) S
Continuation of Letterform I with an emphasis on lowercase letters; basics of pen writing and font design. 6 hours per week. Prerequisites: GRA 284; acceptance into Graphic Design program. Corequisite: GRA 286.

GRA 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.*

GRA 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: IND 327.

GRA 345 Design Rhetoric. (3) F, S
Development of critical thinking and expression of ideas in concise and persuasive written and spoken form. Prerequisites: ENG 101, 102. *General Studies: L2.*

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

GRA 382 Graphic Representation. (3) F

Studio practice in drawing with an application toward graphic communication. 6 hours a week. May be repeated once for credit. Prerequisite: GRA 284.

GRA 383 Typography I. (3) F

Theoretical exercises in spatial and textural qualities of type. Problems in tension, activation, and balance. Exercises in simple typographical applications. 6 hours a week. Prerequisites: GRA 286, 287. Corequisite: GRA 386.

GRA 385 Typography II. (3) S

Problems in composition, choice, and combinations of typefaces, formats, and their application to a variety of design projects. 6 hours a week. Prerequisite: GRA 383. Corequisite: GRA 387.

GRA 386 Visual Communication III. (3) F

Problems in specific design applications such as poster, packaging, publications. Emphasis on development of concepts in visual communications. 6 hours a week. Prerequisites: GRA 286, 287. Corequisite: GRA 383.

GRA 387 Visual Communication IV. (3) S

Client-oriented projects. Problems are multifaceted and the emphases are on continuity of design in more than one medium and format. 6 hours a week. Prerequisites: GRA 383, 386. Corequisite: GRA 385.

GRA 481 Visual Communication V. (3) F, S

Studio problems with an emphasis on analysis, problem solving, and professional portfolio preparation. 6 hours a week. Prerequisites: GRA 385, 387.

GRA 482 Visual Communication VI. (3) S

Individual and group projects with outside clients. All projects culminate in an exhibit. 6 hours a week. Prerequisite: GRA 481.

GRA 485 Graphic Design Workshop. (3) F, S, SS

Preprofessional client/designer situations from concept to printed work. Studio workshop and internships for selected students. 6 hours a week. May be repeated once for credit. Prerequisite: instructor approval.

GRA 494 ST: Special Topics. (3) F

(a) Graphic Design

INDUSTRIAL DESIGN (IND)**IND 194 ST: Special Topics.** (3) S

(a) Drafting for Industrial Design

IND 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 122.

IND 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: IND 227.

IND 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.

IND 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: IND 242.

IND 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 122.

IND 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: IND 260 or equivalent.

IND 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.*

IND 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.*

IND 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: IND 228.

IND 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.

IND 355 Plastics Design. (3) S

Mold design for part requirements; molded holes; threads; inserts; fastening and joining; decorating; reinforced plastics. Prerequisite: IND 354.

IND 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.

IND 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: IND 360.

IND 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 484; IND 361.

IND 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: IND 361.

IND 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.*

IND 474 Design Seminar. (3) S

Manufacturer's liability, statutes, regulations, and common law rules; role of expert witnesses; insurance and product safety programs. Seminar. Prerequisite: senior standing.

INTERIOR DESIGN (INT)**INT 194 ST: Special Topics.** (3) F

(a) Drafting for Interior Design

INT 220 Media for Design Development. (3) S

Graphic representation methods used to describe and analyze space; emphasis on quick presentation techniques. 6 hours studio. Prerequisite: DSC 121.

INT 223 Interior Design Issues and Theories. (3) F

Interiors issues, theories, and philosophies. Emphasis on unique social and cultural factors that shape 20th-century design concepts. *General Studies: HU.*

INT 231 Concepts for Interior Design. (3) S

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 122.

INT 235 User Needs and Behavior in Interior Design. (3) F

Applications of conceptual design to issues of programming and space planning, user needs, and behavior. 1 hour lecture, 4 hours lab. Prerequisite: INT 231.

INT 310 History of Interior Design I. (3) F

The design of interior spaces as an expression of cultural influences to 1835. *General Studies: HU, H.*

INT 311 History of Interior Design II. (3) S

Design of interiors as an expression of cultural influences from 1835 to the present. Prerequisite: INT 310 or instructor approval. *General Studies: HU, H.*

INT 340 Interior Codes: Public Welfare and Safety. (3) F

Codes and regulations as performance criteria for interior design. Corequisite: INT 366.

INT 341 Interior Materials and Finishes. (3) F

General analysis of quality control measures relating to interior design materials, finishes, and performance criteria. Prerequisites: INT 340, 366.

INT 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.

INT 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: INT 364.

INT 366 Construction Methods in Interior Design. (3) F

Design theory related to analysis, materials, and building techniques of horizontal and vertical construction in interior design. Lecture, field trips. Corequisite: INT 340.

INT 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: INT 311 or instructor approval. *General Studies: HU.*

INT 413 History of Textiles in Interior Design. (3) S

Cultural and historical expression of textiles as related to interiors. May include field trips. Prerequisite: INT 412 or instructor approval.

INT 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.

INT 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: INT 422; senior standing.

INT 442 Specifications and Documents for Interiors. (3) F

Contract specifications, documents, schedules, and bidding procedures for interior design. Prerequisites: INT 341, 365. *General Studies: L2.*

INT 446 Furniture Design and Production. (3) F

Design, construction, cost estimating, and installation in interior furniture and millwork. 1 hour lecture, 4 hours studio.

INT 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.

INT 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.

INT 458 Lighting for Interior Design. (3) S

Light as an aspect of interior design. Evaluation of light sources for distribution, color, and cost.

INT 464 Interior Design Studio III. (5) F

Studio problems in interior design related to commercial spaces. 10 hours studio. Prerequisites: DSC 484; INT 365.

INT 465 Interior Design Studio IV. (5) S

Studio problems in interior design related to health and educational facilities. 10 hours studio. Prerequisite: INT 464.

INT 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.

INT 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.

INT 472 Professional Practice for Interior Design. (3) S

Business procedures, project control, fee structures, and professional product liabilities.

School of Planning and Landscape Architecture

Frederick Steiner

Director

(AED 158A) 480/965-7167

www.asu.edu/caed/Planning

PROFESSORS

BRADY, BROCK, KIHLE, LAI, MUSCHKATEL,
PIJAWKA, STEINER

ASSOCIATE PROFESSORS

COOK, GREEN, KIM, McSHERRY, MILLER, SAN MARTIN,
WHYSONG, YABES

ASSISTANT PROFESSORS

CAMERON, CREWE, EWAN,
FISH-EWAN, GUHATHAKURTA

PURPOSE

The faculty in the School of Planning and Landscape Architecture offer a curricula that provides an education for careers in environmental planning, environmental resource management, housing and urban development, landscape architecture, urban and regional planning, and urban design. 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 program coordinators and the school director.

DEGREES

The faculty in the School of Planning and Landscape Architecture offer the B.S. degree in Environmental Resources, Bachelor of Science in Planning degree in Urban Planning, Bachelor of Science in Landscape Architecture degree, and Bachelor of Science in Design degree in Housing and Urban Development.

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

Bachelor of Science in Planning (B.S.P.)

The B.S.P. degree prepares students for careers in urban planning. Students take courses that include comprehensive planning, socioeconomic and environmental analysis, computer and analytical methods, planning law, site planning, landscape architecture, urban design, and public-policy formulation and administration. An internship or an approved elective 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 practices of the profession of planning.

Bachelor of Science in Landscape Architecture (B.S.L.A.)

This 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. The B.S.L.A. is an accredited program.

Bachelor of Science in Design (B.S.D.)

A B.S.D. degree with a major in Housing and Urban Development (HUD) 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—B.S.

The concentration in natural resource management is available with options in wildlife habitat management and applied ecology. In addition, particular attention is given to the study of ecosystem characteristics as they relate to the use of renewable resources.

MINORS

Environmental Resources

The minor in Environmental Resources is available to students interested in environmental courses but who wish to pursue other majors. The minor requires a minimum of 16 semester hours. The courses are designed to appeal to and inform the nonenvironmental resources student and cover a broad range of topics.

All students must complete the required courses.

Required Courses

ERS 130 Soils and Environmental Quality <i>S1/S2</i>	4
ERS 246 Introduction to the Environmental Sciences <i>G</i>	3
ERS 480 Ecosystem Management and Planning <i>L2</i>	3
Total	10

Two additional courses must be selected from the optional course list.

Optional Courses

ERS 225 Soils*	3
ERS 333 Water Resources Management	3
ERS 360 Range Ecosystem Management	3
ERS 365 Watershed Management	3

ERS 370 Forest Ecosystem Dynamics	3
ERS 407 Wildland Plants and Habitats	4
ERS 410 Wildlife Habitat Relations	4
ERS 433 Riparian Ecosystem Management	3
ERS 460 Applied Systems Ecology	3
ERS 475 Wildlife and Range Animal Management	3

* ERS 226 Soils Laboratory (1) must also be taken.

The minor is automatically open to students from the following majors: Architectural Studies, Biology, Civil Engineering, Geography, Graphic Design, Industrial Design, Interior Design, Landscape Architecture, Planning, Plant Biology, and Recreation. Students pursuing other majors will be considered on an individual basis. To pursue a minor in Environmental Resources, all students must have a minimum cumulative GPA of 3.00. These students must submit a letter of application to the School of Planning and Landscape Architecture seeking approval to enter the minor program.

Urban Planning

The minor in Urban Planning is designed for students who are interested in the field but who wish to pursue other majors. The course selection is designed to provide an overview of the field and offer information with broad appeal.

All students must complete a minimum of 15 semester hours from the following courses:

PUP 301 Introduction to Urban Planning <i>LI</i> *	3
PUP 412 History of the City <i>H</i>	3
PUP 420 Theory of Urban Design <i>HU</i>	3
PUP 425 Urban Housing Analysis	3
PUP 432 Planning and Development Control Law	3
PUP 433 Zoning Ordinances, Subdivision Regulations, and Building Codes	3
PUP 442 Environmental Planning	3
PUP 444 Preservation Planning	3
PUP 475 Environmental Impact Assessment	3
PUP 510 Citizen Participation	3

* PUP 301 Introduction to Urban Planning is required. Landscape Architecture students must choose another class with an advisor's approval since PUP 301 is already required for the B.S.L.A.

The minor is automatically open to students from the following majors: Architectural Studies, Civil Engineering, Environmental Resources, Geography, Housing and Urban Development, Landscape Architecture, and Real Estate. Students pursuing other majors will be considered on an individual basis. To pursue a minor in Urban Planning, students must have a minimum cumulative GPA of 3.00. These students must submit a letter of application to the School of Planning and Landscape Architecture seeking approval to enter the minor program.

GRADUATE PROGRAMS

The faculty in the School of Planning and Landscape Architecture offer specialization areas in landscape ecological planning, urban and regional development, and urban design under the Master of Environmental Planning (M.E.P.) degree; the M.S. degree in Environmental Resources; and a collegewide, interdisciplinary Ph.D. degree in Environmental Design and Planning with concentrations in design; history, theory, and criticism; and planning. 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 applicability to this curriculum. To be applicable, 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 minimum 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.

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 2000–2001 upper-division programs in Urban Planning and Housing and Urban Development. Applicants to the upper-division program in Landscape Architecture follow different procedures and have different deadline dates; see an advisor in the advising office for more information.

Upper-Division Application Deadlines. *April 17, 2000.* Portfolio and application documents are due in the school office by 5:00 P.M.

June 2, 2000. If the spring 2000 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 2. 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 3, 2000. Acceptance notices are mailed no later than July 3.

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 a presentation binder (portfolio) with plastic sleeves (8.5" x 11" format only) and a label, with the student's name, affixed to the outside:

1. evidence of graphic and design work shown in 35 mm slides or 3" x 5" or other appropriately sized photographs (20 maximum);
2. a statement of intent describing the applicant's specific background and interest in the major;
3. latest college-level transcript(s), no high school transcripts are required;
4. one example of written work (e.g., a class paper);
5. samples of individual work, team work can be included, but the contribution of the candidate must be clarified;
6. students are strongly encouraged to submit evidence of other endeavors related to the major;
7. the applicant's GPA based on required courses and cumulative GPA is evaluated;
8. students completing the Phoenix Community College (PCC) articulation program with the B.S.D.-HUD program should submit similar material from PCC.

Return of Portfolios. Application documents remain the property of the School of Planning and Landscape Architecture. However, the remainder of the 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 August 15, 2000. 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.

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See “General Studies,” page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See “University Graduation Requirements,” page 81.

**Bachelor of Science in Planning,
Major in Urban Planning**

Lower-division courses	61
Upper-division courses core	57
Internship	2
Total	120

**Bachelor of Science in Planning,
Major in Urban Planning
Lower-Division Requirements¹**

First Year

Fall	
ENG 101 First-Year Composition	3
or ENG 105 Advanced First-Year Composition (3) if qualified	
HUD 161 Graphic Communication I	3
MAT 117 College Algebra <i>NI</i>	3
or approved more advanced N1 elective (3)	
PUP 100 Introduction to Environmental Design <i>HU, G, H</i>	3
Approved HU or SB elective	3
Total	15

Spring

ECN 112 Microeconomic Principles <i>SB</i>	3
ENG 102 First-Year Composition	3
or HU elective if ENG 105 is taken (3)	
GPH 111 Introduction to Physical Geography <i>S1/S2</i>	4
Approved HU or SB elective	3
Approved SB elective	3
Total	16

Second Year

Fall	
ADE 120 Design Fundamentals I ²	3
BIO 319 Environmental Science <i>G</i>	3
PLA 201 Landscape Architecture and Society ²	3
PUP 261 Urban Planning I	4
PUP 301 Introduction to Urban Planning <i>L1</i>	3
Total	16

Spring

PUP 264 Urban Planning II	4
Approved HU elective	3
Approved N2 elective	3
Approved S1/S2 elective	4
Total	14
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**

Third Year

Fall	
PUP 322 Planning Methods Using Computers	3
PUP 361 Urban Planning III	5
PUP 412 History of the City <i>H</i>	3
PUP 424 Planning Methods	3
PUP 442 Environmental Planning	3
Minimum total	17

Spring

GCU 361 Urban Geography <i>SB</i>	3
PUP 362 Urban Planning IV	5
PUP 420 Theory of Urban Design <i>HU</i>	3
PUP 430 Transportation Planning and the Environment	3
Total	14

Summer

PUP 484 Internship	1–12
PUP 485 International Field Studies in Planning and Landscape Architecture (optional)	1–12
Minimum total	2

Fourth Year

Fall	
PUP 425 Urban Housing Analysis	3
PUP 432 Planning and Development Control Law	3
PUP 452 Ethics and Professional Practice <i>L2</i>	3
PUP 461 Urban Planning V	5
PUP 498 PS: Senior Pro-Seminar	1
Total	15

Spring

PUP 462 Urban Planning VI	5
PUP 475 Environmental Impact Assessment	3
PUP 494 ST: Environmental Planning Economics	3
Total	11
Upper-division minimum total	59
B.S.P. minimum total	120

Bachelor of Science in Landscape Architecture

Lower-division courses	64
Upper-division courses	56
Total	120

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See “General Studies,” page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See “University Graduation Requirements,” page 81.

**Bachelor of Science in Landscape Architecture
Lower-Division Requirements¹**

First Year

Fall	
ENG 101 First-Year Composition	3
or ENG 105 Advanced First-Year Composition (3)	
ERS 130 Soils and Environmental Quality <i>S1/S2</i>	4
HUD 161 Graphic Communication ²	3
MAT 117 College Algebra <i>NI</i>	3

PLA 201 Landscape Architecture and Society.....	3
Total	16
Spring	
ADE 120 Design Fundamentals I ²	3
ARS 101 Art of the Western World I <i>HU, H</i>	3
ENG 102 First-Year Composition.....	3
GPH 111 Introduction to Physical Geography <i>SI/S2</i>	4
HIS 101 Western Civilization <i>SB, H</i>	3
Total	16

Second Year

Fall	
PLA 261 Landscape Architecture I ²	4
PLA 294 ST: Landscape Survey Techniques.....	3
PLA 310 History of Landscape Architecture <i>H</i>	3
PLB 362 Landscape Plants I	3
PUP 301 Introduction to Urban Planning <i>LI</i>	3
Total	16
Spring	
PLA 264 Landscape Architecture II	4
PLA 322 Planning Methods Using Computers	3
PLA 442 Landscape Construction I	3
PUP 100 Introduction to Environmental Design <i>HU, G, H</i>	3
Elective.....	3
Total	16
Lower-division total	64

- 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**

Third Year

Fall	
PLA 361 Landscape Architecture III.....	5
PLA 394 ST: Contemporary Landscape Architecture	3
PLA 444 Landscape Construction II	3
PUP 420 Theory of Urban Design <i>HU</i>	3
Total	14
Spring	
PLA 362 Landscape Architecture IV	5
PLA 363 Landscape Planting Design.....	3
PLA 498 PS: Professional Senior Seminar	1
Electives	6
Minimum total	15

Summer	
PLA 484 Internship (optional).....	3
or PLA 485 International Field Studies in Planning and Landscape Architecture (3) (optional)*	

Fourth Year

Fall	
PLA 461 Landscape Architecture V	5
PLA 494 ST: Social Factors in Landscape and Urban Planning...3	
PUP 432 Planning and Development Control Law	3

Elective.....	3
Total	14
Spring	
PLA 443 Landscape Architecture Theory and Criticism	3
PLA 462 Landscape Architecture VI.....	5
Electives	5
Total	13
Upper-division minimum total.....	56

* PLA 485 would be used as an elective in the fourth year.

Select a minimum of nine semester hours from the elective list.

Electives

ERS 225 Soils	3
ERS 246 Introduction to the Environmental Sciences <i>G</i>	3
ERS 365 Watershed Management.....	3
ERS 433 Riparian Ecosystem Management.....	3
ERS 480 Ecosystem Management and Planning	3
ERS 485 GIS in Natural Resources.....	3
ERS 486 Remote Sensing in Environmental Resources	4
PLA 359 Resort Planning and Recreation Design	3
PLA 485 International Field Studies in Planning and Landscape Architecture.....	1-12
or PUP 485 International Field Studies in Planning and Landscape Architecture (6)	
PLA 494 ST: Landscape Construction III	3
PLA 494 ST: Landscape Ecology and Planning	3
PLA 494 ST: Southwest Landscape Interpretation	3
PUP 412 History of the City <i>H</i>	3
PUP 433 Zoning Ordinances, Subdivision Regulations, and Building Codes	3
PUP 442 Environmental Planning.....	3
PUP 444 Preservation Planning	3
PUP 452 Ethics and Professional Practice <i>L2</i>	3
PUP 475 Environmental Impact Assessment	3
PUP 546 Urban Design Policy	3

**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 "General Studies," page 85, for requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

graduation and college degree requirements. See “University Graduation Requirements,” page 81.

**Bachelor of Science in Design,
Major in Housing and Urban Development
Lower-Division Requirements¹**

First Year

Fall

ECN 112	Microeconomic Principles <i>SB</i>	3
ENG 101	First-Year Composition.....	3
GPH 111	Introduction to Physical Geography <i>SI/S2</i>	4
HUD 161	Graphic Communication I.....	3
PUP 100	Introduction to Environmental Design <i>HU, G, H²</i>	3
Total	.....	16

Spring

ECN 111	Macroeconomic Principles <i>SB</i> or any <i>SB</i> elective (3)	3
ENG 102	First-Year Composition.....	3
HUD 201	Introduction to Housing and Urban Development.....	3
MAT 117	College Algebra <i>NI</i> or MAT 170 Precalculus <i>NI</i> (3) or MAT 210 Brief Calculus <i>NI</i> (3)	3
Approved N3	elective in computers.....	3
Total	.....	15

Second Year

Fall

APH 200	Introduction to Architecture <i>HU, G</i> or any CAED history course listed below ^{2,3} (3)	3
CON 252	Building Construction Methods, Materials, and Equipment.....	3
PLA 261	Landscape Architecture I..... or PUP 261 Urban Planning I (4)	4
C elective	.....	3
N2 statistics	elective.....	3
Total	.....	16

Spring

PUP 301	Introduction to Urban Planning <i>LI</i>	3
ACC elective	.....	3
Natural science	with lab.....	4
REA elective	.....	3
Upper-division HUM	elective.....	3
Total	.....	16
Lower-division minimum	total.....	63

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 See “HU/SB Note.”

³ See the “CAED History Courses.”

HU/SB Note. Students not taking PUP 100 and APH 200 should note that courses in the humanities and social/behavioral sciences areas must total at least 15 semester hours with at least six semester hours in each area; two courses must be from the same department; at least two departments must be represented in the total selection, and at least one course must be in the upper division. Courses chosen must also fulfill one of the following awareness areas: historical (H), global (G), or cultural diversity in the United States (C); all three awareness areas must be fulfilled.

CAED History Courses. These CAED history courses also fulfill HU. See the course listings for prerequisites.

APH 300	World Architecture I/Western Cultures <i>HU, G, H</i>	3
APH 305	Contemporary Architecture <i>HU</i>	3
APH 313	History of Western Architecture I <i>L2/HU</i>	3
APH 446	20th-Century Architecture I <i>HU</i>	3
DSC 101	Design Awareness <i>HU, G</i>	3
GRA 318	History of Graphic Design <i>HU</i>	3
IND 316	20th-Century Design I <i>HU, H</i>	3
INT 223	Interior Design Issues and Theories <i>HU</i>	3
INT 310	History of Interior Design I <i>HU, H</i>	3
INT 311	History of Interior Design II <i>HU, H</i>	3
INT 412	History of Decorative Arts in Interiors <i>HU</i>	3
PUP 200	The Planned Environment <i>HU, H</i>	3
PUP 420	Theory of Urban Design <i>HU</i>	3

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

Third Year

Fall

CON 383	Construction Estimating.....	3
HUD 301	Housing and Community Design and Development..... or CON 477 Residential Construction Business Practices (3)	3
HUD 361	Housing and Urban Development Studio I: Residential Design and Development.....	2
HUD 363	Housing and Urban Development Seminar I: Residential Design and Development.....	3
MKT 394	ST: Marketing and Selling.....	3
Total	.....	14

Spring

CON 389	Construction Cost Accounting and Control <i>N3</i>	3
HUD 302	Housing Production Process.....	3
HUD 362	Housing and Urban Development Studio II: Community Design and Development.....	2
HUD 364	Housing and Urban Development Seminar II: Community Design and Development.....	3
Approved elective	in computers*.....	3
Total	.....	14

Summer

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

Fourth Year

Fall

CON 495	Construction Planning and Scheduling <i>N3</i>	3
HUD 401	Assisted Housing.....	3
HUD 461	Housing and Urban Development Studio III: Comprehensive Housing Development Process.....	2
HUD 463	Housing and Urban Development Seminar III: Comprehensive Housing Development Process.....	3
PUP 433	Zoning Ordinances, Subdivision Regulations, and Building Codes..... or PUP 432 Planning and Development Control Law (3)	3
Total	.....	14

Spring

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: Neighborhood Revitalization Process.....	2

HUD 464 Housing and Urban Development Seminar IV: Neighborhood Revitalization Process	3
PUP 452 Ethics and Professional Practice L2	3
Total	14
Upper-division minimum total	57
B.S.D.-HUD total	120

* CON 251 Microcomputer Applications for Construction is suggested.

Bachelor of Science in Environmental Resources

Lower-division courses	61
Upper-division courses core	31
Approved electives	28
Total	120

General Studies Requirement. The following curriculum includes sufficient approved course work to fulfill the General Studies requirement. See “General Studies,” page 85, for General Studies requirements and a list of approved courses. Note that all three General Studies awareness areas are required. Consult your advisor for an approved list of courses.

Graduation Requirements. In addition to fulfilling college and major requirements, students must meet all university graduation and college degree requirements. See “University Graduation Requirements,” page 81.

**Bachelor of Science in Environmental Resources
Lower-Division Requirements**

First Year

Fall	
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 S1/S2	4
Approved N3 computer course ¹	3
Total	14

Spring	
BIO 182 General Biology S2	4
CHM 101 Introductory Chemistry S1/S2	4
ENG 102 First-Year Composition	3
or HU elective if ENG 105 is taken (3)	
HU elective ²	3
Total	14

Second Year

Fall	
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 course ²	3
Total	16

Spring	
CHM 231 Elementary Organic Chemistry S1/S2 ³	3
CHM 235 Elementary Organic Chemistry Laboratory S1/S2 ³	1
ERS 246 Introduction to the Environmental Sciences G	3
MAT 210 Brief Calculus N1	3

PLB 310 The Flora of Arizona	4
HU elective ²	3
Total	17
Lower-division minimum total	61

¹ See an advisor.

² These electives must also satisfy the global, historical, and cultural diversity in the United States awareness areas.

³ Both CHM 231 and 235 must be taken to secure S1 or S2 credit.

**Bachelor of Science in Environmental Resources
Upper-Division Requirements**

Third Year

Fall

ENG 301 Writing for the Professions L1	3
ERS 360 Range Ecosystem Management	3
ERS 407 Wildland Plants and Habitats	4
Approved elective*	4
Total	14

Spring

ERS 333 Water Resources Management	3
or ERS 365 Watershed Management (3)	
ERS 402 Vegetation Measurement	4
ERS 475 Wildlife and Range Animal Management	3
Approved electives*	6
Total	16

Fourth Year

Fall

ERS 410 Wildlife Habitat Relations	4
or ERS 460 Applied Systems Ecology (3)	
ERS 490 Recent Advances in Environmental Resources	1
Approved electives	6 or 7
HU or SB elective	3
Minimum total	14

Spring

ERS 480 Ecosystem Management and Planning L2	3
PUP 442 Environmental Planning	3
Approved electives	9
Total	15
Upper-division minimum total	59
B.S.-ER total	120

* See a faculty advisor.

INQUIRIES

For more information, contact a college academic advisor:

COLLEGE OF ARCHITECTURE AND ENVIRONMENTAL DESIGN
ARIZONA STATE UNIVERSITY
PO BOX 871605
TEMPE AZ 85287-1605

ENVIRONMENTAL DESIGN AND PLANNING (EPD)

See the *Graduate Catalog* for EPD courses.

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see “General Studies,” page 85. For graduation requirements, see “University Graduation Requirements,” page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see “Classification of Courses,” page 58.

ENVIRONMENTAL RESOURCES (ERS)

ERS 130 Soils and Environmental Quality. (4) F

Introduction to soil resources, their physical and chemical properties, classification, energy dynamics, and the role they play in environmental quality. Lecture, lab. *General Studies: S1/S2.*

ERS 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.

ERS 226 Soils Laboratory. (1) F

Selected exercises to broaden the background and understanding of basic soil principles. Lab. Corequisite: ERS 225.

ERS 246 Introduction to the Environmental Sciences. (3) F

A global and ecological perspective on environmental conservation and management. *General Studies: G.*

ERS 333 Water Resources Management. (3) N

Sources, their development, and conservation in arid regions for agricultural, natural resources, and urban uses. Prerequisite: CHM 101 or 113.

ERS 350 Environmental Statistics. (3) F

Statistical methods with applications in natural resource management and the environmental sciences. Use of computers and the Internet. Prerequisites: CSE 180; MAT 117. *General Studies: N2.*

ERS 353 Wildlife Nutrition. (3) N

Principles of nutrient metabolism in wildlife species, with emphasis on understanding the interaction of wildlife with their environment. Prerequisites: BIO 181 and 182 and CHM 101 or instructor approval.

ERS 360 Range Ecosystem Management. (3) F

Ecosystem management principles applied to rangelands. Herbivory as an ecological process, evaluation of rangeland health, multiple use of rangelands. Lecture, recitation. Prerequisites: BIO 320 (or equivalent); ERS 246.

ERS 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, 246.

ERS 370 Forest Ecosystem Dynamics. (3) N

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 246, 350.

ERS 402 Vegetation Measurement. (4) S

Vegetation sampling and inventory as related to animal-habitat relations. Lecture, lab, 1 weekend field trip. Prerequisites: CSE 180 and ERS 350 and 360 and department major or instructor approval.

ERS 407 Wildland Plants and Habitats. (4) F

The distribution, ecological characteristics, identification of key plants, and values of habitats of western rangelands and forests. Laboratory emphasis on grass identification. Lecture, lab. Prerequisite: PLB 310 or equivalent.

ERS 410 Wildlife Habitat Relations. (4) N

Interactions among animal populations and their habitat. Systems simulation of population dynamics as influenced by competition and management strategies. Lecture, lab, 1 weekend field trip. Prerequisite: ERS 360.

ERS 415 Wildlife Life Histories. (3) S

Life histories of the major mammal, reptile/amphibian, and avian species found in the Southwest, with emphasis on management. Lecture, lab. Prerequisites: BIO 370 or 385 and ERS 360.

ERS 420 Ecological Restoration. (3) S

Techniques of ecological restoration applied for the improvement of arid and semi-arid land and sensitive habitats. Weekend field trips. Prerequisite: ERS 360.

ERS 425 Soil Classification and Management. (3) N

Principles of soil genesis, morphology, and classification. Management and conservation practices will be presented. Prerequisite: ERS 225.

ERS 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.

ERS 434 Wetland Ecosystems and Soils. (3) N

Wetland ecosystems structure and function including hydrology and biogeochemistry with special emphasis on soils. Lecture, weekend field trip. Prerequisite: ERS 225 or instructor approval.

ERS 446 Soil Fertility. (3) N

Ability of soils to retain and supply plant nutrients. Reactions of fertilizers in soils. Prerequisites: ERS 225, 226.

ERS 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.

ERS 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.

ERS 460 Applied Systems Ecology. (3) N

The systems approach applied to analysis and management of natural resource ecosystems. Use of simulation models. 2 hours lecture, 3 hours lab. Prerequisites: ERS 350 or equivalent; 1 course in ecology.

ERS 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.

ERS 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.

ERS 477 Environmental Risk Assessment and Management. (3) N

Survey of methods related to identification, evaluation, comparison, and management of environmental risks. Prerequisite: senior standing.

ERS 480 Ecosystem Management and 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. *General Studies: L2.*

ERS 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.

ERS 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 Landsat imagery in resource management. Lecture, lab. Prerequisite: ERS 485 or equivalent.

ERS 490 Recent Advances in Environmental Resources. (1) F, S

Current literature and significant developments involving environmental resources. May be repeated for credit.

ERS 533 Riparian Ecology. (3) N

Review of recent literature, developments, and methods related to riparian ecology. Applications of soil and landscape ecology to riparian systems. Lecture, discussion, field trips.

ERS 540 Plant Responses to Environmental Stresses. (3) N

Reaction of plants to environmental stresses; aerial pollutants, fire, herbivores, mechanical treatments, pesticides, and soil amendments. 1 weekend field trip. Prerequisite: ERS 360 or instructor approval.

ERS 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.

ERS 550 Vegetation Dynamics Studio. (4) F

Dynamics of vegetation emphasizing ecological succession, applications of landscape ecology and GIS, and analysis of vegetation data. Field trips, studio. Prerequisite: introductory statistics course.

ERS 551 Environmental Statistics Studio. (4) S

Advanced statistical procedures for environmental resources. Techniques for analyzing research data that do not meet assumptions. Studio. Prerequisite: ERS 350 or equivalent.

ERS 553 Advanced Animal Nutrition. (4) N

Metabolic and physiological interactions of nutrients in wild and domesticated animals consuming natural feeds. Lecture, lab.

ERS 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.

ERS 585 Spatial Modeling with GIS. (3) F

GIS technology for spatial modeling of natural resources. Practical application of GIS technology for problem solving. Lecture, lab. Prerequisites: ERS 485 or equivalent or instructor approval.

HOUSING AND URBAN DEVELOPMENT (HUD)**HUD 161 Graphic Communication I.** (3) F

Development of drawing skills and understanding of the graphic communication systems used by planning, homebuilding, and landscape architecture professionals.

HUD 162 Graphic Communication II. (3) F, S

Development of sketching techniques and watercolor application used in concept development and final presentation. Prerequisite: HUD 161.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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.

HUD 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, 464; upper-division HUD major.

HUD 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.

HUD 484 Internship. (1) SS**LANDSCAPE ARCHITECTURE (PLA)****PLA 201 Landscape Architecture and Society.** (3) F

The relevance of landscape architecture to the creation of humanized environments, with emphasis on natural factors.

PLA 210 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. Credit is allowed for only APH 411 or PLA 210. *General Studies: H.*

PLA 242 Landscape Construction I. (4) S

Landscape constructions focusing on landform transformations. Topics include landform analysis, grading, and earthwork. Studio. Prerequisite: admission to professional program.

PLA 261 Landscape Architecture I. (4) S

Reading the landscape: observing, experiencing, and graphically expressing the symbolic and aesthetic significance of natural landscapes. Studio. Prerequisites: ADE 120; GPH 111.

PLA 264 Landscape Architecture II. (4) F

Landscape communication: communication techniques for urban planning and landscape architecture communication. Prerequisites: ADE 120; PLA/PUP 261.

PLA 294 ST: Landscape Survey Techniques. (3) F

Development of landscape survey skills including aerial photography, satellite images, georeferencing and land surveys, and field data collection.

PLA 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. Credit is allowed for only PLA 322 or PUP 322.

PLA 344 Landscape Construction II. (4) F

Characteristics of materials and methods used in landscape architectural construction. Studio. Prerequisite: PLA 242 or instructor approval.

PLA 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.

PLA 361 Landscape Architecture III. (4) F

Site planning: analysis of natural and cultural features; site systems and implications for plan making and design. Studio. Prerequisite: admission to professional program.

PLA 362 Landscape Architecture IV. (4) S

Site design: site specific design of configured space by the creative development of form. Studio. Prerequisite: admission to professional program.

PLA 363 Landscape Planting Design. (4) S

Functional and aesthetic use of plants in arid region landscape design. Design philosophies are explored through planting design problems. Studio. Prerequisite: admission to professional program.

PLA 394 ST: Contemporary Landscape Architecture. (3) F

Exploration of concerns, projects, and movements in landscape architecture of the late 20th century focusing on understanding of the social, ecological, regional, and historical influences.

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

PLA 411 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 210, 361, 362, 420, 461.

PLA 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. Prerequisite: junior standing. *General Studies: HU.*

PLA 461 Landscape Architecture V. (4) F
Landscape ecological planning: collection and application of ecological data relevant to planning and design at landscape scale. Studio. Prerequisite: PLA 362.

PLA 462 Landscape Architecture VI. (4) S
Advanced landscape architecture: integrative capstone studio with multifaceted design problems. Prerequisite: PLA 461.

PLA 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.

PLA 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. Credit is allowed for only PLA 485 or PUP 485.

- PLA 494 ST: Special Topics.** (3) F, S
- Landscape Construction III. (3) S
Landscape construction focusing on low technology, biotechnical, regional, and experimental techniques or systems.
 - Landscape Ecology and Planning. (3) S
Landscape ecology is examined for its value in the landscape planning process. Review of the evolution of landscape ecology and landscape planning.
 - Social Factors in Landscape and Urban Planning. (3) F
Examination of the influence of social factors in landscape architecture and urban planning.
 - Southwest Landscape Interpretation. (3) S
Explorations in methods and implications of landscape interpretation within the American Southwest focusing on how people interpret landscape, the tools they use, and how these methods and mechanisms influence land use decisions.

PLA 498 PS: Professional Senior Seminar. (1) S

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

URBAN AND ENVIRONMENTAL PLANNING (PUP)

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

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

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

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

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

PUP 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.*

PUP 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. Credit is allowed for only PLA 322 or PUP 322.

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

PUP 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. Prerequisite: department major or instructor approval.

PUP 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. Credit is allowed for only APH 414 or PUP 412. *General Studies: H.*

PUP 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. Prerequisite: junior standing. *General Studies: HU.*

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

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

PUP 430 Transportation Planning and the Environment. (3) S
Overview of transportation planning from the perspective of land use planning, economic development, environmental planning, and social needs. Lecture, discussion. Prerequisite: junior standing or instructor approval.

PUP 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.

PUP 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.

PUP 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.

PUP 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.

PUP 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.*

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

PUP 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.

NOTE: For the General Studies requirement, courses, and codes (such as L1, N3, C, and H), see "General Studies," page 85. For graduation requirements, see "University Graduation Requirements," page 81. For an explanation of additional omnibus courses offered but not listed in this catalog, see "Classification of Courses," page 58.

PUP 462 Urban Planning VI. (5) S

Capstone studio: project focusing on synthesis aspects of plan making. Studio. Prerequisite: PUP 461 or instructor approval.

PUP 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.

PUP 484 Internship. (1–12) 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.

PUP 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. Credit is allowed for only PLA 485 or PUP 485.

PUP 494 ST: Special Topics. (3) F, S

(a) Environmental Planning Economics

PUP 498 PS: Senior Pro-Seminar. (1) F**PUP 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.

PUP 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.

PUP 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.

PUP 525 Urban Housing Analysis. (3) F

Nature, dimensions, and problems of urban housing, government policy environment, and underlying economics of the housing market.

PUP 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.

PUP 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.

PUP 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.

PUP 546 Urban Design Policy. (3) N

Advanced study of local, state, and federal urban design policy. Cross-listed as PLA 546. Credit is allowed for only PLA 546 or PUP 546. Prerequisite: PLA/PUP 420.

PUP 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.

PUP 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 major or instructor approval.

PUP 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.

PUP 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.

PUP 584 Internship. (3) F, S, SS (SS1 only)

Internship under the supervision of practitioners in the Phoenix area or other locales. Credit/no credit.

PUP 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.

PUP 642 Land Economics. (3) F

Land use and locational impact of economic activity and the urban real property market. Prerequisite: instructor approval.

PUP 644 Public Sector Planning. (3) S

Urban fiscal problems and public goods provision in state and local governments. Prerequisites: instructor approval; 1 course in micro-economics.