

2017-18 Bulletin

Graduate School of Architecture & Urban Design



Washington University in St. Louis



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About This Bulletin

The graduate and professional bulletins are the catalogs of programs, degree requirements and policies of the following schools of Washington University in St. Louis: Architecture & Urban Design; Art; Arts & Sciences; Engineering & Applied Science; Law; Medicine; and Social Work & Public Health.

The *University College Bulletin* is the catalog of University College, the professional and continuing education division of Arts & Sciences at Washington University in St. Louis. The catalog includes programs, degree requirements, course descriptions, and pertinent university policies for students earning a degree through University College.

The 2017-18 bulletins are entirely online but may be downloaded in PDF format for printing. Individual pages may be downloaded in PDF format using the "Download This Page as a PDF" option on each page. To download a full PDF, please choose from the following:

- Architecture & Urban Design (PDF: coming soon)
- Art (PDF: coming soon)
- Arts & Sciences (PDF: coming soon)
- Engineering & Applied Science (PDF: coming soon)
- Law (PDF: coming soon)
- Medicine (PDF: coming soon)
- Social Work & Public Health (PDF: coming soon)
- University College (undergraduate and graduate) (PDF: coming soon)

The degree requirements and policies in the *2017-18 Bulletin* apply to students entering Washington University during the 2017-18 academic year.

Every effort is made to ensure that the information, applicable policies and other materials presented in the *Bulletin* are accurate and correct as of the date of publication (June 29, 2017). Washington University reserves the right to make changes at any time without prior notice. Therefore, the electronic version of the *Bulletin* may change from time to time without notice. The governing document at any given time is the then-current version of the *Bulletin*, as published online, and then-currently applicable policies and information are those contained in that *Bulletin*.

For the most current information about available courses and class scheduling, visit WebSTAC (<https://acadinfo.wustl.edu>). Questions concerning the *Bulletin* may be addressed to bulletin_editor@wustl.edu.

For more graduate and professional programs, please visit the following website:

- Olin Business School (<http://olin.wustl.edu>)

About Washington University in St. Louis

Who We Are Today

Washington University in St. Louis, a medium-sized, independent university, is dedicated to challenging its faculty and students alike to seek new knowledge and greater understanding of an ever-changing, multicultural world. The university is counted among the world's leaders in teaching and research, and draws students from all 50 states, the District of Columbia, Guam, Puerto Rico and the Virgin Islands. Students and faculty come from more than 100 countries around the world.

The university offers more than 90 programs and almost 1,500 courses leading to bachelor's, master's and doctoral degrees in a broad spectrum of traditional and interdisciplinary fields, with additional opportunities for minor concentrations and individualized programs. For more information about the university, please visit the University Facts page (<http://wustl.edu/about/facts>) of our website.

Enrollment by School

For enrollment information, please visit the University Facts page (<http://wustl.edu/about/facts/#students>) of our website.

Committed to Our Students: Mission Statement

Washington University's mission is to discover and disseminate knowledge, and protect the freedom of inquiry through research, teaching and learning. Washington University creates an environment to encourage and support an ethos of wide-ranging exploration. Washington University's faculty and staff strive to enhance the lives and livelihoods of students, the people of the greater St. Louis community, the country and the world.

Our goals are:

- to welcome students, faculty and staff from all backgrounds to create an inclusive community that is welcoming, nurturing and intellectually rigorous;
- to foster excellence in our teaching, research, scholarship and service;
- to prepare students with attitudes, skills and habits of lifelong learning and leadership thereby enabling them to be productive members of a global society; and
- to be an institution that excels by its accomplishments in our home community, St. Louis, as well as in the nation and the world.

To this end we intend:

- to judge ourselves by the most exacting standards;
- to attract people of great ability from diverse backgrounds;
- to encourage faculty and students to be bold, independent and creative thinkers;
- to provide an exemplary, respectful and responsive environment for living, teaching, learning and working for present and future generations; and
- to focus on meaningful measurable results for all of our endeavors.

Trustees & Administration

Board of Trustees

Please visit the Board of Trustees website (<http://boardoftrustees.wustl.edu>) for more information.

University Administration

In 1871, Washington University co-founder and then-Chancellor William Greenleaf Eliot sought a gift from Hudson E. Bridge, charter member of the university's Board of Directors, to endow the chancellorship. Soon it was renamed the "Hudson E. Bridge Chancellorship."

Led by the chancellor, the officers of the university administration are detailed on the university website (<http://wustl.edu/about/leadership>).

Academic Calendar

The academic calendar of Washington University in St. Louis is designed to provide an optimal amount of classroom instruction and examination within a manageable time frame, facilitating our educational mission to promote learning among both students and faculty. Individual schools, particularly our graduate and professional schools, may have varying calendars due to the nature of particular fields of study. Please refer to each school's website for more information.

Fall Semester 2017

Date	Day	Description
August 28	Monday	Classes begin
September 4	Monday	Labor Day holiday
October 14-17	Saturday-Tuesday	Fall Break
November 22-26	Wednesday-Sunday	Thanksgiving Break
December 8	Friday	Last day of classes
December 11-13	Monday-Wednesday	Reading Days
December 14-20	Thursday-Wednesday	Final Examinations

Spring Semester 2018

Date	Day	Description
January 15	Monday	Martin Luther King Jr. holiday
January 16	Tuesday	Classes begin
March 11-17	Sunday-Saturday	Spring Break
April 27	Friday	Last day of classes
April 30 - May 2	Monday-Wednesday	Reading Days
May 3-9	Thursday-Wednesday	Final Examinations
May 18	Friday	Commencement

Summer Semester 2018

Date	Day	Description
May 21	Monday	First Summer Session begins
May 28	Monday	Memorial Day holiday
July 4	Wednesday	Independence Day holiday
August 16	Thursday	Last Summer Session ends

Washington University recognizes the individual student's choice in observing religious holidays that occur during periods when classes are scheduled. Students are encouraged to arrange with their instructors to make up work missed as a result of religious observance, and instructors are asked to make every reasonable effort to accommodate such requests.

Campus Resources

Student Support Services

Cornerstone: The Learning Center. Located on the first floor of Gregg House on the South 40, Cornerstone is the hub of academic support at Washington University. We provide undergraduate students with help in a variety of forms, including course-specific structured study groups and highly trained academic peer mentors who provide support in locations, at times, and in formats that are convenient for students. Other services include workshops and individual consultations on study skills, time management, and note-taking. Cornerstone also offers fee-based graduate and professional school entrance exam preparation courses. Additionally, Cornerstone administers TRiO, a federally-funded program that offers advising, leadership development, financial assistance, and other support to undergraduate students who are low-income, the first in their family to go to college, and/or have a documented disability. On Sundays and weekday evenings, we offer flexible space where students can study, work on class projects, or relax. Most services are free, and each year, more than 2,000

students participate in one or more of our programs. For more information, visit our website (<http://cornerstone.wustl.edu>) or call 314-935-5970.

Disability Resources. Cornerstone is also home to Disability Resources, which assists students with disabilities and students with suspected disabilities by providing guidance and accommodations to ensure equal access to our campus, both physically and academically. Disability Resources serves both undergraduate and graduate students enrolled in the schools on the Danforth Campus. Students enrolled as students in the School of Medicine should contact their program director or their program's Student Affairs staff member. Students enrolled in the Division of Biology & Biomedical Sciences (DBBS) are considered graduate students in Arts & Sciences and are served by Disability Resources. Students may visit our website (<http://disability.wustl.edu>) or call Cornerstone at 314-935-5970 for more information.

Office for International Students and Scholars. If a student is joining the university from a country other than the United States, this office can assist that individual through its orientation programs, by issuing certificates of eligibility (visa documents), and by offering special services for non-native English speakers in the English Language Programs. In addition, the office provides personal and cross-cultural counseling and arranges social, cultural and recreational activities that foster international understanding on campus.

The Office for International Students and Scholars is located in the Stix International House at 6470 Forsyth Boulevard and on the Medical School campus in the Mid Campus Center (MCC Building), 4590 Children's Place, Room 2043. For more information, visit our website (<http://oiss.wustl.edu>) or call 314-935-5910.

Medical Student Support Services. For information about Medical Student Support Services, please visit the School of Medicine website (<https://medicine.wustl.edu>).

The Writing Center. The Writing Center, a free service, offers writing advice to all Washington University undergraduate and graduate students. Tutors will read and discuss any kind of work in progress, including student papers, senior theses, application materials, dissertations, and oral presentations. The Writing Center staff is trained to work with students at any stage of the writing process, including brainstorming, developing and clarifying an argument, organizing evidence, and improving style. Rather than editing or proofreading, tutors will emphasize the process of revision and teach students how to edit their own work. Appointments are preferred and can be made online (<http://writingcenter.wustl.edu>).

The Writing Center is located in Olin Library on level one.

Student Health Services, Danforth Campus

Student Health Services (SHS) provides medical and mental health care for undergraduate and graduate students. Student Health Services staff members include licensed professionals in Medical Services, Mental Health Services, and Health Promotion Services. Please visit us in Dardick House on the South 40, or visit our website (<http://shs.wustl.edu>) for more information about each of our services and staff members.

Hours:

Monday, Tuesday and Thursday 8 a.m.-6 p.m.

Wednesday 10 a.m.-6 p.m.

Friday 8 a.m.-5 p.m.

Saturday 9 a.m.-1 p.m.

A nurse answer line is available to answer any medical questions a student may have when SHS is closed. For after-hours care, please call: 314-935-6666.

Medical Services staff members provide care for the evaluation and treatment of an illness or injury, preventive health care and health education, and nutrition, physical therapy, travel medicine and women's health services. Student Health Services' providers are considered in-network and are participating members of the Washington University in St. Louis Physician's Network. Any condition requiring specialized medical services will be referred to an appropriate community specialist. Student Health Services accepts most health insurance plans and will be able to bill the plan according to plan benefits when care is accessed at SHS. The student health insurance plan requires a referral any time care is not provided at SHS. Call 314-935-6666 or visit our website (<http://shs.wustl.edu>) to schedule an appointment for medical care, including allergy injections prescribed by your allergist, health consultations, for HIV or other STD testing, or for immunizations.

Appointments also are available for assessment, treatment and referral for students who are struggling with substance abuse.

The SHS pharmacy is available to all Washington University students and their dependents who participate in the student health insurance plan. The pharmacy accepts most prescription insurance plans; please check with the pharmacist to see if your prescription plan is accepted at the pharmacy.

The SHS lab provides full laboratory services. Approximately 20 tests can be performed in the SHS lab. The remainder of all testing that is ordered by SHS is completed by LabCorp. LabCorp serves as our reference lab and is on the student health insurance plan as a preferred provider. The SHS lab can collect any test ordered by our providers.

All incoming students must provide proof of immunization for two measles, mumps, rubella vaccines after the age of one year old. (A titer may be provided in lieu of the immunizations.) Meningococcal vaccine proof is required for all incoming

undergraduate students. A PPD skin test in the past six months is required for students entering the university from certain countries. This list of countries may be found on our website. We suggest all students also have Tetanus Diphtheria immunization within the past five years, Hepatitis A vaccine series, Hepatitis B vaccine series and Varicella vaccine. Medical History Forms are available online (<http://shs.wustl.edu>). Failure to complete the required forms will delay registration and will prevent entrance into housing assignment. Please visit our website (<http://shs.wustl.edu>) for complete information about requirements and deadlines.

Mental Health Services staff members work with students to resolve personal and interpersonal difficulties, including conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety and depression. Although some concerns are more frequent than others, students' experiences are as varied as the students themselves. Staff members help each person figure out their own situation. Services include individual, group and couples counseling; crisis counseling; psychiatric consultation; and referral for off-campus counseling. Call 314-935-6666 or visit our website (<http://shs.wustl.edu>) to schedule an appointment.

Health Promotion Services staff members provide information and resources on issues of interest to Washington University students including alcohol and other drugs, weight and body image, sexual health, sleep and stress; customize professional health education programs for groups; and work with groups of students dedicated to educating their peers about healthy decision making. Call 314-935-7139 for more information.

Important Information About Health Insurance, Danforth Campus

Washington University has a student health fee designed to improve the health and wellness of the entire Washington University community. This fee supports health and wellness services and programs on campus. In addition, all full-time, degree-seeking Washington University students are automatically enrolled in the Student Health Insurance Plan upon completion of registration. Students may opt out of this coverage if there is proof of existing comprehensive insurance coverage. Information concerning opting out of the student health insurance plan can be found online (<http://shs.wustl.edu>) after June 1 of each year. Student Health Services does provide billing services to many of the major insurance companies in the United States. Specific fees and co-pays apply to students using Medical Services and Mental Health Services; these fees may be billable to your insurance plan. More information is available on our website (<http://shs.wustl.edu>).

Student Health Services, Medical Campus

For information about student health services on the Medical Campus, please visit the Student Health Services page (<http://shs.wustl.edu>).

bulletin.wustl.edu/medicine/departments/student-health) of the medical school *Bulletin*.

Campus Security

The Washington University campus is among the most attractive in the nation and enjoys a safe, relaxed atmosphere. Your personal safety and the security of your property while on campus is a shared responsibility. Washington University has made safety and security a priority through our commitment to a full-time professional police department, use of closed circuit television, card access, good lighting, shuttle services, emergency telephones, and ongoing educational safety awareness programs. The vast majority of crimes that occur on college campuses are crimes of opportunity, which can be prevented.

The best protection against crime is an informed, alert campus community. Washington University has developed several programs to help make your experience here a safe and secure one. An extensive network of emergency telephones, including more than 200 "blue light" telephones, is connected directly to the University Police Department and can alert the police to your exact location. In addition to the regular shuttle service, an evening walking escort service or mobile Campus Circulator is available on the Danforth Campus.

The Campus2Home shuttle will provide a safe ride home for those living in four designated areas off campus — Skinker-DeBaliviere, Loop South, north of The Loop and just south of the campus — from 7:00 p.m. to 4:00 a.m. seven days a week. The shuttle leaves from both the Mallinckrodt Center and the Brookings Drive steps and takes passengers directly to the front doors of their buildings. Shuttle drivers then will wait and watch to make sure passengers get into their buildings safely.

The University Police Department is a full-service organization staffed by certified police officers who patrol the campus 24 hours a day throughout the entire year. The Police Department offers a variety of crime prevention programs including a high-security bicycle lock program, free personal-safety whistles, computer security tags, personal safety classes for women and men, property inventory services and security surveys. For more information on these programs, check out the Washington University Police Department website (<http://police.wustl.edu>).

In compliance with the Campus Crime Awareness and Security Act of 1990, Washington University publishes online (<http://police.wustl.edu/clerylogsandreports/Pages/default.aspx>) an annual report, *Safety & Security: Guide for Students, Faculty, and Staff & Annual Campus Security and Fire Safety Reports*, which is available to all current and prospective students on the Danforth Campus and university employees on the Danforth, North and West campuses. To request a hard copy, contact the Washington University Police Department, CB 1038, One Brookings Drive, St. Louis, MO 63130-4899, 314-935-9011.

For information regarding protective services at the School of Medicine, please visit the Security page (<https://facilities.med.wustl.edu/security>) of the Washington University Operations & Facility Management Department.

University Policies

Washington University has various policies and procedures that govern our faculty, staff and students. Highlighted below are several key policies of the university. Web links to key policies and procedures are available on the Office of the University Registrar website (<http://registrar.wustl.edu>) and on the university's Compliance and Policies page (<http://wustl.edu/policies>). Please note that the policies identified on these websites and in this *Bulletin* do not represent an entire repository of university policies, as schools, offices and departments may implement policies that are not listed. In addition, policies may be amended throughout the year.

Nondiscrimination Statement

Washington University encourages and gives full consideration to all applicants for admission, financial aid and employment. The university does not discriminate in access to, or treatment or employment in, its programs and activities on the basis of race, color, age, religion, sex, sexual orientation, gender identity or expression, national origin, veteran status, disability or genetic information.

Policy on Discrimination and Harassment

Washington University is committed to having a positive learning and working environment for its students, faculty and staff. University policy prohibits discrimination on the basis of race, color, age, religion, sex, sexual orientation, gender identity or expression, national origin, veteran status, disability or genetic information. Harassment based on any of these classifications is a form of discrimination and violates university policy and will not be tolerated. In some circumstances such discriminatory harassment may also violate federal, state or local law. A copy of the Policy on Discrimination and Harassment (<http://hr.wustl.edu/policies/Pages/DiscriminationAndHarassment.aspx>) is available on the Human Resources website.

Sexual Harassment

Sexual harassment is a form of discrimination that violates university policy and will not be tolerated. It is also illegal under state and federal law. Title IX of the Education Amendments of 1972 prohibits discrimination based on sex (including sexual harassment and sexual violence) in the university's educational programs and activities. Title IX also prohibits retaliation for asserting claims of sex discrimination. The university has designated the Title IX Coordinator identified below to coordinate its compliance with and response to inquiries concerning Title IX.

For more information or to report a violation under the Policy on Discrimination and Harassment, please contact:

Discrimination and Harassment Response Coordinators

Apryle Cotton, Asst. Vice Chancellor for Human Resources
Section 504 Coordinator
Phone: 314-362-6774
Email: apryle.cotton@wustl.edu

Leanne Stewart, Employee Relations Manager
Phone: 314-362-8278
Email: leannerstewart@wustl.edu

Title IX Coordinator

Jessica Kennedy, Director of Title IX Office
Title IX Coordinator
Phone: 314-935-3118
Email: jwkennedy@wustl.edu

You may also submit inquiries or a complaint regarding civil rights to the United States Department of Education's Office of Civil Rights at 400 Maryland Avenue, SW, Washington, DC 20202-1100 or by visiting the U.S. Department of Education website (<http://ed.gov>) or calling 800-421-3481.

Student Health

Drug and Alcohol Policy

Washington University is committed to maintaining a safe and healthful environment for members of the university community by promoting a drug-free environment as well as one free of the abuse of alcohol. Violations of the Washington University Drug and Alcohol Policy (<http://hr.wustl.edu/policies/Pages/DrugandAlcoholPolicy.aspx>) or Alcohol Service Policy (<http://pages.wustl.edu/prograds/alcohol-service-policy>) will be handled according to existing policies and procedures concerning the conduct of faculty, staff and students. This policy is adopted in accordance with the Drug-Free Workplace Act and the Drug-Free Schools and Communities Act.

Tobacco-Free Policy

Washington University is committed to providing a healthy, comfortable and productive work and learning environment for all students, faculty and staff. Research shows that tobacco use in general, including smoking and breathing secondhand smoke, constitutes a significant health hazard. The university strictly prohibits all smoking and other uses of tobacco products within all university buildings and on university property, at all times. A copy of our complete tobacco-free policy (<http://hr.wustl.edu/policies/Pages/tobaccofreepolicy.aspx>) is available on the Human Resources website.

Medical Examinations

Entering students must provide medical information to Student Health Services. This will include completion of a health history

and a record of all current immunizations. The university strongly recommends appropriate vaccination for meningococcal disease.

If students fail to comply with these requirements prior to registration, they will be required to obtain vaccinations for measles, mumps and rubella at Student Health Services, if there is no evidence of immunity. They will be assessed the cost of the vaccinations. Students will be unable to complete registration for classes until all health requirements have been satisfied.

If students are unimmunized, they may be barred from classes and from all university facilities, including housing units, if in the judgment of the university their continued presence would pose a health risk to themselves or to the university community.

Medical and immunization information is to be given via the Student Health Services (<http://shs.wustl.edu>) website. All students who have completed the registration process should access the website and create a student profile by using their WUSTL key. Creating a student profile enables a student to securely access the medical history form. Fill out the form and follow the instructions for transmitting it to Student Health Services. Student information is treated securely and confidentially.

Student Conduct

The University Student Conduct Code sets forth community standards and expectations for Washington University students. These community standards and expectations are intended to foster an environment conducive to learning and inquiry. Freedom of thought and expression is essential to the university's academic mission.

Disciplinary proceedings are meant to be informal, fair and expeditious. Charges of non-serious misconduct are generally heard by the student conduct officer. With limited exceptions, serious or repeated allegations are heard by the campuswide University Student Conduct Board or the University Sexual Assault Investigative Board where applicable.

Complaints against students that include allegations of sexual assault or certain complaints that include allegations of sexual harassment in violation of the University Student Conduct Code are governed by the procedures found in the University Sexual Assault Investigative Board Policy (<https://wustl.edu/about/compliance-policies/governance/usaib-procedures-complaints-sexual-assault-filed-students>), which is available online or in hard copy from the Title IX coordinator or the director of Student Conduct and Community Standards.

Students may be accountable to both governmental authorities and to the university for acts that constitute violations of law and the University Student Conduct Code.

For a complete copy of the University Student Conduct Code (<https://wustl.edu/about/compliance-policies/academic-policies>), visit the university website.

Undergraduate Student Academic Integrity Policy

Effective learning, teaching and research all depend upon the ability of members of the academic community to trust one another and to trust the integrity of work that is submitted for academic credit or conducted in the wider arena of scholarly research. Such an atmosphere of mutual trust fosters the free exchange of ideas and enables all members of the community to achieve their highest potential.

In all academic work, the ideas and contributions of others must be appropriately acknowledged, and work that is presented as original must be, in fact, original. Faculty, students and administrative staff all share the responsibility of ensuring the honesty and fairness of the intellectual environment at Washington University.

Scope and Purpose

This statement on academic integrity applies to all undergraduate students at Washington University. Graduate students are governed by policies in each graduate school or division. All students are expected to adhere to the highest standards of behavior.

The purpose of the statement is twofold:

- To clarify the university's expectations with regard to undergraduate students' academic behavior, and
- To provide specific examples of dishonest conduct. The examples are only illustrative, *not* exhaustive.

Violations of This Policy Include, but Are Not Limited To:

1. Plagiarism

Plagiarism consists of taking someone else's ideas, words or other types of work product and presenting them as one's own. To avoid plagiarism, students are expected to be attentive to proper methods of documentation and acknowledgment. To avoid even the suspicion of plagiarism, a student must always:

- Enclose every quotation in quotation marks and acknowledge its source.
- Cite the source of every summary, paraphrase, abstraction or adaptation of material originally prepared by another person and any factual data that is not considered common knowledge. Include the name of author, title of work, publication information and page reference.
- Acknowledge material obtained from lectures, interviews or other oral communication by citing the source (name of the speaker, the occasion, the place and the date).
- Cite material from the internet as if it were from a traditionally published source. Follow the citation style or requirements of the instructor for whom the work is produced.

2. Cheating on an Examination

A student must not receive or provide any unauthorized assistance on an examination. During an examination a student may use only materials authorized by the faculty.

3. Copying or Collaborating on Assignments without Permission

When a student submits work with their name on it, this is a written statement that credit for the work belongs to that student alone. If the work was a product of collaboration, each student is expected to clearly acknowledge in writing all persons who contributed to its completion.

Unless the instructor explicitly states otherwise, it is dishonest to collaborate with others when completing any assignment or test, performing laboratory experiments, writing and/or documenting computer programs, writing papers or reports, and completing problem sets.

If the instructor allows group work in some circumstances but not others, it is the student's responsibility to understand the degree of acceptable collaboration for each assignment, and to ask for clarification if necessary.

To avoid cheating or unauthorized collaboration, a student should never:

- Use, copy or paraphrase the results of another person's work and represent that work as one's own, regardless of the circumstances.
- Refer to, study from or copy archival files (e.g., old tests, homework, solutions manuals or backfiles) that were not approved by the instructor.
- Copy another's work, or permit another student to copy one's work.
- Submit work as a collaborative effort if they did not contribute a fair share of the effort.

4. Fabrication or Falsification of Data or Records

It is dishonest to fabricate or falsify data in laboratory experiments, research papers or reports or in any other circumstances; to fabricate source material in a bibliography or "works cited" list; or to provide false information on a résumé or other document in connection with academic efforts. It is also dishonest to take data developed by someone else and present them as one's own.

Examples of falsification include:

- Altering information on any exam, problem set or class assignment being submitted for a re-grade.
- Altering, omitting or inventing laboratory data to submit as one's own findings. This includes copying laboratory data from another student to present as one's own; modifying

data in a write-up; and providing data to another student to submit as one's own.

5. Other Forms of Deceit, Dishonesty or Inappropriate Conduct

Under no circumstances is it acceptable for a student to:

- Submit the same work, or essentially the same work, for more than one course without explicitly obtaining permission from all instructors. A student must disclose when a paper or project builds on work completed earlier in their academic career.
- Request an academic benefit based on false information or deception. This includes requesting an extension of time, a better grade or a recommendation from an instructor.
- Make any changes (including adding material or erasing material) on any test paper, problem set or class assignment being submitted for a re-grade.
- Willfully damage the efforts or work of other students.
- Steal, deface or damage academic facilities or materials.
- Collaborate with other students planning or engaging in any form of academic misconduct.
- Submit any academic work under someone else's name other than one's own. This includes but is not limited to sitting for another person's exam; both parties will be held responsible.
- Engage in any other form of academic misconduct not covered here.

This list is not intended to be exhaustive. To seek clarification, students should ask the professor or the assistant to the instructor for guidance.

Reporting Misconduct

Faculty Responsibility

Faculty and instructors are strongly encouraged to report incidents of student academic misconduct to the academic integrity officer in their school or college in a timely manner so that the incident may be handled fairly and consistently across schools and departments. Assistants to the instructor are expected to report instances of student misconduct to their supervising instructors. Faculty members are expected to respond to student concerns about academic dishonesty in their courses.

Student Responsibility

If a student observes others violating this policy, the student is strongly encouraged to report the misconduct to the instructor, to seek advice from the academic integrity officer of the school or college that offers the course in question, or to address the student(s) directly.

Exam Proctor Responsibility

Exam proctors are expected to report incidents of suspected student misconduct to the course instructor and/or the Disability Resource Center, if applicable.

Procedure

Jurisdiction

This policy covers all undergraduate students, regardless of their college of enrollment. Cases will be heard by school-specific committees according to the school in which the class is listed, not the school in which the student is enrolled. All violations and sanctions will be reported to the student's college of enrollment.

Administrative Procedures

Individual undergraduate colleges and schools may design specific procedures to resolve allegations of academic misconduct by students in courses offered by that school, so long as the procedures are consistent with this policy and with the University Student Conduct Code.

Student Rights and Responsibilities in a Hearing

A student accused of an academic integrity violation, whether by a professor, assistant to instructor, academic integrity officer or student, is entitled to:

- Review the written evidence in support of the charge.
- Ask any questions.
- Offer an explanation as to what occurred.
- Present any material that would cast doubt on the correctness of the charge.
- Determination of the validity of the charge without reference to any past record of misconduct.

When responding to a charge of academic misconduct, a student may:

- Deny the charges and request a hearing in front of the appropriate academic integrity officer or committee.
- Admit the charges and request a hearing to determine sanction(s).
- Admit the charges and accept the imposition of sanctions without a hearing.
- Request a leave of absence from the university. The academic integrity matter must be resolved prior to re-enrollment.
- Request to withdraw permanently from the university with a transcript notation that there is an unresolved academic integrity matter pending.

A student has the following responsibilities in resolving the charge of academic misconduct:

- Admit or deny the charge. This will determine the course of action to be pursued.

- Provide truthful information regarding the charges. It is a University Student Conduct Code violation to provide false information to the university or anyone acting on its behalf.

Sanctions

If Found *Not* in Violation of the Academic Integrity Policy

If the charges of academic misconduct are not proven, no record of the allegation will appear on the transcript.

If Found in Violation of the Academic Integrity Policy

If, after a hearing, a student is found to have acted dishonestly, or if a student has admitted to the charges prior to a hearing, the school's academic integrity officer or committee may impose sanctions, including but not limited to the following:

- Issue a formal written reprimand.
- Impose educational sanctions, such as completing a workshop on plagiarism or academic ethics.
- Recommend to the instructor that the student fail the assignment. (A grade is ultimately the prerogative of the instructor.)
- Recommend to the instructor that the student fail the course.
- Recommend to the instructor that the student receive a course grade penalty less severe than failure of the course.
- Place the student on disciplinary probation for a specified period of time or until defined conditions are met. The probation will be noted on the student's transcript and internal record while it is in force.
- In cases serious enough to warrant suspension or expulsion from the university, refer the matter to the University Student Conduct Board for consideration.

Additional educational sanctions may be imposed. This list is not intended to be exhaustive.

Withdrawing from the course will not prevent the academic integrity officer or hearing panel from adjudicating the case, imposing sanctions or recommending grade penalties, including a failing grade in the course.

A copy of the sanction letter will be placed in the student's academic file.

Appeals

If a student believes the academic integrity officer or the committee did not conduct a fair hearing, or if a student believes the sanction imposed for misconduct is excessive, they may appeal to the University Student Conduct Board within 14 days of the original decision. Appeals are governed by Section VII C of the University Student Conduct Code.

Records

Administrative Record-Keeping Responsibilities

It is the responsibility of the academic integrity officer in each school to keep accurate, confidential records concerning academic integrity violations. When a student has been found to have acted dishonestly, a letter summarizing the allegation, the outcome and the sanction shall be placed in the student's official file in the office of the school or college in which the student is enrolled.

Additionally, each school's academic integrity officer shall make a report of the outcome of every formal accusation of student academic misconduct to the director of Student Conduct and Community Standards, who shall maintain a record of each incident.

Multiple Offenses

When a student is formally accused of academic misconduct and a hearing is to be held by an academic integrity officer, a committee, or the Office of Student Conduct and Community Standards, the person in charge of administering the hearing shall query the Office of Student Conduct and Community Standards about the student(s) accused of misconduct. The director shall provide any information in the records concerning that student to the integrity officer. Such information will be used in determining sanctions *only* if the student is found to have acted dishonestly in the present case. Evidence of past misconduct may not be used to resolve the issue of whether a student has acted dishonestly in a subsequent case.

Reports to Faculty and Student Body

School and college academic integrity officers are encouraged to make periodic (at least annual) reports to the students and faculty of their school concerning accusations of academic misconduct and the outcomes, without disclosing specific information that would allow identification of the student(s) involved.

Graduate Student Academic Integrity Policies

For graduate student academic integrity policies, please refer to each individual graduate school.

Statement of Intent to Graduate

Students are required to file an Intent to Graduate at WebSTAC (<https://acadinfo.wustl.edu>) prior to the semester in which they intend to graduate. Additional information is available in the dean's offices of each school and in the Office of the University Registrar (<http://registrar.wustl.edu>).

Student Academic Records and Transcripts

The Family Educational Rights and Privacy Act of 1974 (FERPA) — Title 20 of the United States Code, Section 1232g, as amended — provides current and former students of the university with specific rights of access to and control over their student record information. In compliance with the statute, appropriate federal regulations and guidelines recommended by the American Association of Collegiate Registrars and Admissions Officers, the university has adopted procedures that implement these rights.

A copy of the university policies regarding educational records and the release of student record information is available from the Office of the University Registrar (<http://registrar.wustl.edu>) and the university website (<http://www.wustl.edu>).

Transcript requests may be submitted to the Office of the University Registrar through WebSTAC. Instructions and additional information are available on the University Registrar website (<http://registrar.wustl.edu>).

University Affiliations

Washington University is accredited by the Higher Learning Commission (<https://www.hlcommission.org>) (800-621-7440). Washington University is a member of the Association of American Universities, the American Council on Education, the College Board, and the Independent Colleges and Universities of Missouri.

The College of Arts & Sciences is a member of the Center for Academic Integrity and the American Association of College Registrars.

The College of Architecture was one of the eight founding members of the Association of Collegiate Schools of Architecture (ACSA) in 1912.

The Graduate School is a founding member of both the Association of Graduate Schools and the Council of Graduate Schools.

The Graduate School of Architecture & Urban Design's Master of Architecture degree is accredited by the National Architectural Accreditation Board (NAAB).

The Sam Fox School of Visual Arts & Design (Art) is a founding member of, and is accredited by, the National Association of Schools of Art and Design (NASAD).

The Olin Business School is a charter member of the Association to Advance Collegiate Schools of Business International (1921) (AACSB).

In the School of Engineering & Applied Science, many of the professional degrees are accredited by the Engineering Accreditation Commission of ABET (<http://abet.org>).

University College is a member of the University Professional and Continuing Education Association, the North American Association of Summer Sessions, the Association of University Summer Sessions and the Center for Academic Integrity. Business-related programs in University College are not accredited by the Association to Advance Collegiate Schools of Business (AACSB International).

The School of Law is accredited by the American Bar Association. The School of Law is a member of the Association of American Law Schools, the American Society of Comparative Law, the Clinical Legal Education Association, the Southeastern Association of Law Schools, the Central Law Schools Association, the Mid-America Law Library Consortium, the American Association of Law Libraries, and the American Society of International Law.

The School of Medicine is a member of the Liaison Committee on Medical Education.

The Brown School at Washington University is accredited by the Council on Social Work Education and the Council on Education for Public Health.

The University Libraries are a member of the Association of Research Libraries.

The Mildred Lane Kemper Art Museum is nationally accredited by the American Alliance of Museums.

Graduate School of Architecture & Urban Design

The Graduate School of Architecture & Urban Design cultivates the designer's identity as a leader: as both an expressive individual and a socially responsible citizen. Our programs emphasize the physicality of design through regard to site, purpose, material, technique and meaning. Our commitment to the ethical practice of architecture, landscape architecture, and urban design spans disciplines, contending cultural theories and the range of representational media.

The Graduate School of Architecture & Urban Design provides an intimate environment for learning, with individualized attention in the design studios, and correspondingly small lectures and seminars. The independent character of a student's abilities is demonstrated and tested in the final semester through the Degree Project, in which students work individually with faculty tutors and critics. The graduate school also has a strong teaching and research assistant program, with approximately one out of every four students engaged in this learning experience.

Contact Information

Graduate School of Architecture & Urban Design
CB 1079
One Brookings Drive
St. Louis, MO 63130-4899
Phone: 314-935-6227
Website: <http://samfoxschool.wustl.edu/archprograms>
Email: wuarch@wustl.edu
Contact Form: http://samfoxschool.wustl.edu/gradarch_contact

Faculty

Endowed Professors

Kathryn Dean (<http://samfoxschool.wustl.edu/directory/242>)
JoAnne Stolaroff Cotsen Professor
MArch, Oregon School of Architecture & Allied Arts

Bruce Lindsey, AIA (http://samfoxschool.wustl.edu/portfolios/faculty/bruce_lindsey)
E. Desmond Lee Professor for Community Collaboration
MFA, University of Utah
MArch, Harvard University

Adrian Luchini (<http://samfoxschool.wustl.edu/directory/479>)
Raymond E. Maritz Professor of Architecture
MArch, Harvard University

Robert McCarter (<http://samfoxschool.wustl.edu/directory/298>)
Ruth & Norman Moore Professor
MArch, Columbia University

Eric Mumford (<http://samfoxschool.wustl.edu/directory/487>)
Rebecca and John Voyles Professor of Architecture
PhD, Princeton University

Professors

Rod Barnett (http://samfoxschool.wustl.edu/portfolios/rod_barnett)
PhD, University of Auckland

John Hoal (http://samfoxschool.wustl.edu/portfolios/faculty/john_hoal)
PhD, Washington University

Sung Ho Kim (<http://samfoxschool.wustl.edu/directory/139>)
MSci, Massachusetts Institute of Technology

Stephen P. Leet (<http://samfoxschool.wustl.edu/directory/473>)
BArch, University of Kentucky

Igor Marjanovic (http://samfoxschool.wustl.edu/portfolios/faculty/igor_marjanovic)
PhD, Bartlett School of Architecture, University College of London

Heather Woofter (http://samfoxschool.wustl.edu/portfolios/faculty/heather_woofter)
MArch, Harvard University

Professors of Practice

Valerie Greer (http://www.samfoxschool.wustl.edu/portfolios/valerie_greer)
MArch, Washington University

Eric R. Hoffman (<http://samfoxschool.wustl.edu/directory/469>)
MArch, Washington University

Philip Holden (<http://samfoxschool.wustl.edu/directory/471>)
MArch, Washington University

Xiaobo Quan
PhD, Texas A&M University

Associate Professors

Gia Daskalakis (<http://samfoxschool.wustl.edu/directory/1589>)
Dipl de Postgrado, Universidad Politecnica de Catalunia

Robert Hansman (<http://samfoxschool.wustl.edu/directory/58>)
BFA, University of Kansas

Patricia Heyda (<http://samfoxschool.wustl.edu/directory/59>)
MArch, Harvard University

Derek Hoeflerlin (<http://samfoxschool.wustl.edu/directory/61>)
MArch, Tulane University

Zeuler Lima (<http://samfoxschool.wustl.edu/directory/474>)
PhD, Universidade de São Paulo

Linda C. Samuels (http://samfoxschool.wustl.edu/portfolios/linda_samuels)
PhD, University of California, Los Angeles

Hongxi Yin
PhD, Carnegie Mellon University

Assistant Professors

Chandler Ahrens (<http://samfoxschool.wustl.edu/directory/7147>)
MArch, University of California, Los Angeles

Eric Ellingsen (<http://samfoxschool.wustl.edu/directory/52>)
MArch, MLA, University of Pennsylvania
MA, St. John's College

Catalina Freixas (<http://samfoxschool.wustl.edu/directory/52>)
Dipl Arch, Universidad de Buenos Aires

Constance Vale
MArch, Yale University

Jesse Vogler (http://www.samfoxschool.wustl.edu/portfolios/faculty/jesse_vogler)
MArch, University of California, Berkeley

Visiting Professor

Peter Rose
MArch, Yale University

Visiting Assistant Professor

Jonathan Stitelman (http://samfoxschool.wustl.edu/portfolios/jonathan_stitelman)
MArch, Washington University
MUD, Washington University

Senior Lecturers

Ryan Abendroth
MArch, University of Illinois at Urbana-Champaign

Michael Allen
BA, Union Institute and University

Don Koster
MArch, Washington University

Doug Ladd
MS, Southern Illinois University at Carbondale

Gay Lorberbaum
MArch, Washington University

Jacqueline Margetts
MPhil, University of Auckland (New Zealand)

Bob Moore
PhD, Washington University

Pablo Moyano (http://samfoxschool.wustl.edu/portfolios/faculty/pablo_moyano)
MArch, Washington University

Phillip Shinn
BSE, Princeton University

Lindsey Stouffer
MFA, Washington University

Ian Trivers
PhD, University of Michigan

Jan Ulmer
MArch, University of the Arts, Berlin

Professors Emeriti

Paul Donnelly

Iain A. Fraser

Gerald Gutenschwager

James Harris

Sheldon S. Helfman

Udo Kultermann

Leslie J. Laskey

Donald Royse

Thomas L. Thomson

Dean Emeritus

Constantine E. Michaelides
FAIA

Courses

Below are listings for course levels 500 and above. For available 300- and 400-level courses, please visit our online course listings (<https://courses.wustl.edu/CourseInfo.aspx?sch=A&crslvl=3:4>).

A46 ARCH (p. 13): Architecture

A48 LAND (p. 24): Landscape Architecture

A49 MUD (p. 27): Urban Design

Architecture

Visit online course listings to view semester offerings for A46 ARCH (<https://courses.wustl.edu/CourseInfo.aspx?sch=A&dept=A46&crslvl=5:8>).

A46 ARCH 501A Designing With Words

Writing is a creative act; a means by which designers craft the story of their vision with words. Writing is also a critical act; a way of thinking that refines and sculpts our ideas, sharpening and shaping the depth and clarity of the design process. And yet, writing at times can feel treacherous. We can frequently feel as if we are stumbling over words or even swimming up a river against them. How do we transform words into another way of designing? How do we put writing at our own command? This course will help to develop writing skills as another tool

for the designer by addressing how we use writing in our own field, particularly in portfolios, presentations and research. We will practice techniques to make writing meaningful as a critical and creative practice so that words are not barriers or add-ons, but a colorful complement to creative vision. This course will be geared toward supporting students at all writing levels, particularly students writing in English as a second language. Credit 3 units. Arch: GARW, HT

A46 ARCH 5080 Community Arts and Social Practice: An Introduction

This seminar brings together several different disciplines and methodologies to look at the practice of the arts in the context of community. The seminar combines hands-on work and observation, theoretical analysis and reflection, and specific proposals. For our case studies, we concentrate on several programs and places currently existing or developing in the St. Louis region. We discuss both ends and means, and systems of evaluation that draw on, among other things, art, architecture, social work and community development.

Credit 3 units.

A46 ARCH 511 Architectural Design V

Prerequisite: satisfactory completion of Arch 419 or equivalent. Twelve hours of studio work a week.

Credit 6 units.

A46 ARCH 511B Architectural Design V (Buenos Aires)

Prerequisite: satisfactory completion of Arch 419 or equivalent. Twelve hours of studio work a week.

Credit 6 units.

A46 ARCH 511H Architectural Design V (Berlin)

Prerequisite: satisfactory completion of Arch 419 or equivalent. Twelve hours of studio work a week.

Credit 6 units.

A46 ARCH 512 Architectural Design VI

Prerequisite: satisfactory completion of Arch 511. Twelve hours of studio work a week.

Credit 6 units.

A46 ARCH 512B Architectural Design VI (Buenos Aires)

Prerequisite: satisfactory completion of Arch 511. Twelve hours of studio work a week.

Credit 6 units.

A46 ARCH 512H Architectural Design VI (Berlin)

Prerequisite: satisfactory completion of Arch 511. Twelve hours of studio work a week.

Credit 6 units.

A46 ARCH 520 Shifting from Lines to Surfaces/Virtual to Empirical

Digital Media Design: Introduction to Exploring Digital and CAD/CAM Technology. This is a course in computing theory and techniques on 2-dimensional digital software and advanced 3-dimensional modeling software. Weekly demonstrations on software operations and individual projects are developed. This course bridges the gap between 2-D computational tools that define lines and the 3-D tools that develop complex

surfaces. These surfaces explore the possibilities of creating and articulating the nonlinear geometries manipulated on the digital environment. The final project consists of 2-dimensional drawings, digital models and physical models produced by advanced CAD/CAM technology. By employing alternative techniques and emerging technologies of manufacturing, new forms of objects and perceptions redefine multiple design processes.

Credit 3 units.

A46 ARCH 521H Topics in Advanced Architectural Computing: Performative Skins

Course participants will explore the materiality and environmental suitability of skins, and will be encouraged to find the answers to questions about their topological performance in the context of dynamic environments and in the reality of their anthropospheric state of existence. Building Performance Analysis will facilitate the morphing of architectural design through various phases of environmental simulations: insolation, light, wind and acoustics, for the purpose of creating a digitally altered tectonic that is most suitable of in situ conditions.

Prerequisites for the class are an advanced knowledge of various digital modeling techniques and a basic understanding of sustainable design principles. An attempt will be made to establish a direct link between analytical results obtained with Ecotect and various applications supporting Smart Geometry (Generative components).

Credit 3 units.

A46 ARCH 521M Surface of Affect/Effect

This course is a digital design and fabrication seminar that introduces the notion of architecture affecting human senses as well as the effects generated by the architectural entity. The affective ability will focus on tactility since it is the sense perceived by the entire body and opticality due to the visual nature of architecture. Both affect and effect focus on the surface as a plane of contact between people and their architectural environment. The class will develop digital modeling techniques that will lead to the development of physical prototypes that explore dynamic conditions responding to environmental variables that continually modify the visual and tactile boundary of the surface as division between a person and the exterior environment. In particular the class will develop surfaces that explore physical movement, implied movement and perceived movement. The course will involve readings and discussion along with the production of digital and physical prototypes.

Credit 3 units.

A46 ARCH 523J Berlin Bricks: Paradigm Shifts and Continuity (Berlin)

In this course, Berlin will be considered as an architectural manual. According to the uniqueness of every city, on the example of Berlin we will try to focus on significant contradictory attitudes in architecture and urbanism to study their effects. "Weiterbauen": how to continue building the city. What are the time-transcending narrations? Which programmatic shifts can we observe and what are their lessons? Karl Scheffler, a German art historian in the first half of 20th century, made a clear distinction in his book, *The Spirit of Gothic* from 1917, between two alternating fundamental attitudes in design: Gothic and Romanesque. The pendulum over the centuries, he argues, swings permanently from one side to the other. It's never a stagnation — and never an progression. In architecture, fighting, influencing and overlaying of attitudes with their contradictory

potential makes the city as a whole — especially in Berlin, following another word by Scheffler — as a city "always to become and never to be." The situation today is much more chaotic than in 1917, but thinking in black-and-white terms seems to be over. We want to read important aspects — literally, by visual perceptions and through abstractions, interpretations and applications — to learn and to adapt knowledge by understanding how knowledge is generated and was adapted so far.

Credit 3 units. Arch: GAUI

A46 ARCH 524E Ordinance: Territorial Rules & Urban Administration

What is the link between rules and form? What is the relationship between form and politics? This course will essay an administrative history of the built environment, taking as its starting point the rules, codes, ordinances, laws and guidelines that shape the landscape. We will turn a critical yet curious eye toward historic and contemporary case studies that shape or are shaped by a robust regulatory framework — from the French Forest Ordinance of 1669 to the work of MVRDV and contemporaries. We will examine both the built results and the theories and philosophies of design by which they are animated. In the arc of our readings we will seek to link our territorial, urban and architectural understanding with broader historical and economic moments. In addition to carrying out readings, discussions and analyses, students will work toward *Ordonnance*, a collective publication that will historicize and diagram this administrative impulse.

Credit 3 units.

A46 ARCH 524F Critical Spatial Practice: Art / Architecture / Landscape / Urbanism

Critical Spatial Practice reads the history of art, architecture, landscape and urbanism across the grain in an effort to tease out latent affinities and to heighten meaningful antagonisms. In particular, this class takes a critical look at the ways in which creative practice has situated itself in relation to politics, power, society and space, while maintaining a certain autonomy from each of these registers. Themes such as: historic and collective memory; empire and war; publics and counterpublics; city and countryside; institutions and the everyday; will all be central tropes as we ask questions of what, exactly, provokes one to make. Each of these disciplines shares a certain projective and critical orientation to the world — but what is it that makes their methods so distinct? What might we learn from knowledge of these differences? Where do shared passions break down? As critical practitioners, we look to make sense of the world — while our search for meaning may take radically different forms. Throughout the term, we will be focusing on a range of projects, movements, artists/practitioners and groups that take seriously the situatedness of their work. We will cover practices that might fall under more recognized categories, such as: performance, land art, ecology, social practice, everyday urbanism, pedagogy, curation and installation. We will interrogate the modes of production as well as modes of distribution that creative practitioners work within and against. We will look at the history of artists and designers engaging the built and natural worlds in ways that exceed the disciplinary frameworks of their time. From the Dada excursions to the Situationist Derives, from the urban representation of the CIAM grille to the urban choreography of Daniel Buren, and from the Romantic geography of Humboldt to the displaced geography of the Atlas Group. Throughout, we will be reading foundational texts — theoretical, historical and methodological — that help situate these projects and

movements within their contemporary milieu. By focusing on the context of these practices, this course has its eye on the many conceptual elisions and canonical lacunas that emerge in disciplinary-specific histories from the early 20th century to the present — while also operating as a retroactive genealogy of the aspirations of the Sam Fox School. Weekly meetings will be structured around an organizing theme with related readings, screenings and viewings. Each class will consist of a short lecture by the instructor framing the topic, a student presentation weaving a network of thought around a single specific work/project, and subsequent discussion. Final projects will critically engage the themes of the course as students produce a publication, installation, video or performance that takes a position.

Credit 3 units.

A46 ARCH 524G American Cultural Landscapes

Whether we are designing buildings, landscapes or neighborhoods, we are working on a cultural landscape — a place built from customs, memories, histories and associations as much as visual design itself. This course provides an overview of American cultural landscapes and their alteration, through readings, visual art, site visits and field surveys. Symbolic, utilitarian, architectural, scenographic or personal meanings will be explored alongside site histories. Throughout the semester, the course will interrogate the concept of vernacular landscapes, more broadly defined as landscapes of everyday life. From roadsides to homesteads to tourist attractions to landfills to urban neighborhoods, vernacular landscapes define the image of America to large extent. Readings will unpack the contingencies between design, economics, cultural politics, agriculture, consumption and technology that inscribe culture across the land. Course work will be informed by the work of geographers, historians, writers, preservationists, filmmakers and visual artists. J.B. Jackson and Lucy Lippard's theories about the cultural uses of land will be anchors. Along the way, course readings and experiences (including fieldwork) will make stops along the way to examine local landscapes including a radioactive landfill, the neighborhoods of Detroit, the "wild" west, Appalachian terrain, the Mississippi River, the Sunset Strip, the Buffalo Bayou in Houston and more. The course will pose a taxonomy of the types of cultural landscapes while presenting various methods for decoding, recording, interpreting, preserving and altering these places.

Same as A48 LAND 524G

Credit 3 units. Arch: GACS

A46 ARCH 524J Berlin Thinks: Laboratory of Ideas in Pre-War Berlin and Beyond (Berlin)

The course investigates principle phenomena about architecture and will put them in comparison to questions of art. The study will focus on philosophical ideas of architecture that have been invented in pre-war Berlin and beyond. The development of modern Architecture Theory was accompanied by a vivid discussion of why styles change, how we perceive physical objects, what is the idea of space, what movies have to do with architecture. We will learn about the invention of psychology, of film theory, of conceptualising architecture and about how the construction of our brain relates to architecture. The course will acquire knowledge by experiencing phenomena (movies), by lectures of relevant texts and authors, by reading texts and extracting a thesis, by analyzing and working on a conceptual diagram, by transfer of ideas to different media.

Credit 3 units. Arch: GACS

**A46 ARCH 525K LAND Arch URB:
landscapearchitectureurbanism**

New Disciplinary Dynamics: Blurs and Exchanges. Over the past decade, the various professions engaged in the construction of the built environment have been investigating (both in theory and practice) a specific and deliberate blurring, hybridization and expansion of the traditional semantic and historical categories of landscape, architecture and urbanism in an attempt to confront changing situations, environments and cultures. Across geographical and cultural boundaries, the proliferation of projects (speculative and built) and essays appearing in recent years makes this phenomenon more than a passing trend or the product of individual reflection. Architecture, for example, as a conventional discipline with its own tasks, internal logic, and modus operandi has become so heterogeneous that it can no longer adequately authenticate its products from within the limits of its historical category. The same holds true of the allied fields of landscape and urbanism. Strict disciplinary boundaries are no longer capable of attending to the complexity of contemporary demands produced by mobility, density, de-urbanization, hybrid programs, changing uses, and ecological concerns. The contemporary world forcibly imposes the need for greater flexibility and indeterminacy and for new techniques of practice that are anticipatory, receptive to change, and capable of opening an aperture to the future. This course will explore these disciplinary slippages and hybrid contacts between until-now distinct categories through essays and built or speculative works. Fulfills History/Theory elective. Fulfills Urban Issues elective.

Credit 3 units.

A46 ARCH 525L The Architecture of Le Corbusier

A seminar course examining the works of Le Corbusier (1889-1965), one of the most important architects of the modern era whose works continue to exercise enormous influence on contemporary architecture. The seminar will explore Le Corbusier's entire career, including both built works, such as the Monastery of La Tourette, and unbuilt projects, such as the Venice Hospital. Students will analyze and present 20 selected architectural works dating from 1920 to 1965. Introductory lectures by the professor, followed by two student presentations in each class, and each team of two students will be required to present two buildings (one earlier work and one later work). Analytical methods employed in the student presentations in the course will cover the full range of contextual, cultural, material, constructive, and experiential attributes of buildings, and students will employ the graphic analysis standards developed by the professor. Individual research papers, as well as hard copies and CDs of the two in-class presentations will be due at the end of the semester. Students will be credited in the professor's book, *Le Corbusier*. Fulfills Master of Architecture History and Theory elective distribution requirement. Enrollment limited to 20 students.

Credit 3 units.

**A46 ARCH 527M Louis L. Kahn and Contemporary
Architecture: Comparative Critical Analyses of Built Works**

A graduate seminar employing comparative critical analyses to explore 10 works of the American architect Louis Kahn (1901-1974) and works by 10 contemporary architects who have been influenced in some way by the works of Kahn, selected from a list including Steven Holl, Tod Williams and Billie Tsien, Peter Zumthor, Herman Hertzberger, Grafton Architects, Brad

Cloepfil/Allied Works, Wiel Arets, Stanley Saitowitz, Thomas Phifer and Nieto Sobejano. Kahn was one of the most influential of the "second generation" of Modern architects, and this course will explore the architectural ordering principles structuring his work, how these were often derived from Kahn's perceptions regarding the works of his predecessors, and the manner in which these ordering principles have been employed by contemporary architects. Analytical methods employed in the course will cover that full range of contextual, cultural, material, constructive, and experiential attributes of buildings, with particular emphasis on Kahn's focus on the manner in which the spaces of a building are ordered by the patterns of occupation and the poetics of use, as well as the poetics of construction, or the way in which a building is built, and of what materials it is made, and how all these combine to construct the experience of those who inhabit it. Following introductory lectures by the faculty, each of the subsequent 10 class meetings will consist of a presentation of a selected pair of buildings, one by Kahn and one by a contemporary architect, to be presented by teams of two students. Each student team will present two buildings, one by Kahn and one by a contemporary architect; one presentation in the first half of the semester, and one presentation in the second half of the semester. Students will be evaluated on both the quality of their team presentations, and on the quality of their participation in the class discussions accompanying each presentation. Summary papers and CDs of the PowerPoint presentations will be due at the end of the semester. Maximum enrollment: 20 students. Fulfills History and Theory elective distribution requirement.

Credit 3 units.

**A46 ARCH 527N Design at an Impasse: The Experience of
Lina Bo Bardi**

This seminar will address timely conceptual and practical issues about architecture by studying the design and theoretical works of Italian-born Brazilian architect, Lina Bo Bardi (1914-1992). As one of the very few prominent women architects in the 20th century, she articulated many important questions that remain open in contemporary architecture. Her work ranged from editorial to curatorial projects, from furniture to urban design, and from new buildings to restoration and adaptive reuse projects. The title of this course refers to a posthumous book she organized in the later years of her life, in which she addressed the dilemmas of designing in a world in which basic human needs and shared social values are often at odds with the pervasiveness of individualism, images and commodities in a globalized Western culture. The seminar will be divided in three modes: lectures, individual research, and an exhibition project. Lectures will focus on a comprehensive approach to her life, work and ideas. Individual research will focus on analyzing specific works organized by categories with access to both secondary and primary sources. The results of the research will be incorporated into a curatorial project for a pilot exhibition investigating the significance of her legacy to contemporary architects and designers. Fulfills History/Theory elective requirement.

Credit 3 units.

A46 ARCH 527S Urbanism Since 1850

Since the beginning of the industrial railroad era, architects have attempted to shape the form of cities in a variety of ways. Through lectures, field trips, discussions and films, this course will examine some of the most important episodes in urbanism since the urban and technological transformations of the mid-19th century, including Haussmann's Paris and Cerda's

extension of Barcelona, the Vienna Ringstrasse and the critical response to it in the work of Camillo Sitte; the American City Beautiful and English Garden City movements; early modern efforts in housing and planning, such as those of CIAM, the International Congress of Modern Architecture; urbanism and regionalism under the American New Deal; the era of massive metropolitan change after the Second World War, including postwar replanning efforts in various situations; the development of the discipline of urban design under Josep Lluís Sert at Harvard and elsewhere; visionary projects of the 1960s; the ideas and influence of Kevin Lynch, Colin Rowe, and Aldo Rossi and the work of the Congress for the New Urbanism; and more recent directions in urbanism. Fulfills History/Theory elective requirement for MArch students.

Credit 3 units. Arch: GARW, GAUI, HT, UI

A46 ARCH 527T The Architecture of Steven Holl, 1974-2014

A seminar course examining the works of Steven Holl (1947-), one of the most important architects practicing today. During his 40-year career, 1974-2014, Holl's ordering principles and designs have exercised considerable influence over contemporary developments in architecture around the world. Today Holl is rightly considered the greatest of the third generation of American modern architects, following the first generation of Louis Sullivan, and the second generation of Louis Kahn, architects whose work has served as both a source of inspiration and a standard for Holl's work. In addition to teaching continuously at Columbia University since 1981, where he developed innovative design studio projects, Holl also co-founded in 1976 the influential critical journal *Pamphlet Architecture*. The course will be structured on the five sections of the proposed book, and will examine important early works such as the Hybrid Building at Seaside, the American Library in Berlin, and the five Edge of the City proposals; mid-career works such as the Housing at Fukuoka, the Stretto House in Dallas, the Chapel of St. Ignatius in Seattle, the Kiasma Museum in Helsinki, and Higgins Hall at Pratt Institute; and later works such as the School of Art at the University of Iowa, the Nelson-Atkins Museum addition in Kansas City, the Linked Hybrid in Beijing, and the Horizontal Skyscraper at Shenzhen. Analytical methods employed in the student presentations in the course will cover the full range of contextual, cultural, material, constructive and experiential attributes of buildings, with particular emphasis on the manner in which the spaces of a building are ordered by the patterns of occupation and "the poetics of use," as well as "the poetics of construction," or the way in which a building is built, and of what materials it is made, and how all these combine to construct the experience of those who inhabit it. Students will employ the graphic analysis standards developed by the professor. Following introductory lectures by the professor, each of the subsequent 10 class meetings will consist of two student presentations of building analyses, and each team of two students will be required to present two buildings: one work from early in the career to be presented in the first half of the semester, and one work from later in the career to be presented in the second half of the semester. Students will be evaluated on both the quality of their team presentations and on the quality of their individual participation in the class discussions accompanying each presentation. Individual research papers, as well as hard copies and CDs of the two in-class presentations, will be due at the end of the semester. As an integral part of the course, the professor will lead an "optional" field trip to the School of Art at the University of Iowa; this field trip will take place on a weekend. Fulfills History/Theory elective requirement. Credit 3 units.

A46 ARCH 527U Alvar Aalto and Contemporary**Architecture: Comparative Critical Analyses of Built Works**

A graduate seminar employing comparative critical analyses to explore 10 works of the Finnish architect Alvar Aalto (1898-1976) and works by 10 contemporary architects that share disciplinary ordering principles with the works of Aalto, selected from a list including Alvaro Siza, Steven Holl, Tod Williams and Billie Tsien, John and Patricia Patkau, Juha Leiviska, Sverre Fehn, Sheila O'Donnell and John Tuomey, Jorn Utzon, Eduardo Souto da Moura and Fuensanta Nieto and Enrique Sobejano. Aalto was one of the most influential of the "second generation" of Modern architects, and this course will explore the architectural ordering principles structuring his work, how these were often derived both from Aalto's response to the Nordic environment and from Aalto's insights into the works of his predecessors, and the manner in which these ordering principles have been employed by contemporary architects. Analytical methods employed in the course will cover the full range of contextual, cultural, material, constructive, and experiential attributes of buildings, with particular emphasis on Aalto's focus on the manner in which the spaces of a building are ordered by the patterns of occupation and the poetics of use, as well as the poetics of construction, or the way in which a building is built, and of what materials it is made, and how all these combine to construct the experience of those who inhabit it. Following introductory lectures by the faculty, each of the subsequent 10 class meetings will consist of a presentation of a selected pairing of buildings, one by Aalto and one to three by a contemporary architect, to be presented by a team of two students. Students will be evaluated on both the quality of their individual presentations, and on the quality of their participation in the class discussions. Two summary research papers (one on each presentation) and CDs of PowerPoint presentations will be due at the end of the semester. Fulfills History & Theory Case Study Elective Distribution requirement. Credit 3 units. Arch: GACS

A46 ARCH 528M Architectural Association, 1971-1990:**Texts, Buildings and Drawings**

This seminar will examine the convergence of curatorial, publishing and professional practices at the Architectural Association (AA) in London under the chairmanship of Alvin Boyarsky. Through a focused study of the international network of AA notables in the 1970s and 80s — Zaha Hadid, OMA/Rem Koolhaas, Bernard Tschumi, Daniel Libeskind, Peter Eisenman, John Hajduk, Peter Cook, Robin Evans and others — the seminar will establish a broader relationship between architectural theory and practice. The course will integrate a set of primary theoretical texts with a selection of AA publications, illuminating the relationship between architecture and theories of image production, collection and dissemination. Course requirements include weekly reading summaries, discussions, in-class presentations and a research paper. Open to graduate and upper-level undergraduate students. Fulfills History/Theory elective requirement. Credit 3 units.

A46 ARCH 528S Everyday Urbanism: Global and Local Practices

This course explores how qualities of urbanism are shaped through the aggregation of consistent, repetitive building typologies which subsequently gain difference and character over time through occupation by varied cultures, rituals and behaviors. Among the relevant methodologies to study the relationship between built form and urban quality are those

developed by John Stilgoe, who reads the history and culture of a place in terms of repeated features of development, and Tsukamoto Yoshiharu, founder of Atelier Bow-Wow, who notes how changes in the building typologies of Tokyo have had significant impacts on the public realm of the city. Observations derived from this form of research have a direct impact on how we understand the temporal and experiential qualities of the city and, subsequently, design. The maximum enrollment for this course will be 12. MUD students have priority.
Same as A49 MUD 528S

Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 529E CELLULAR_TRANSFORMATIONS

Throughout history, design has always played an important role in technological development; however, within the context of modernity, contemporary design has seen its limits since the urgency of environmental and sustainable issues has inflicted a great impact in our lives. There is a shift in design process, not only to invent new materials, but to reorganize and transform the materials that currently exist in our world. The CELLULAR_TRANSFORMATIONS research is a project that hybrids organic and synthetic interfaces by developing a cohesive materialism where both biological and artificial enhancements are produced. The CELLULAR_TRANSFORMATIONS research explores the process of cells attaching to substrates and scaffolds by promoting organic tissue growth. The infrastructural scaffolds and manipulation of the structural experiments impact the surface heterogeneity that could be articulated for maximum control within a design process. Our goal is to invent new formations of substrates and scaffolding techniques that allow cells to fabricate their own natural matrix and structural integrity by holding their own mechanical loads. This course will enroll students from architecture, biology, and mechanical engineering to develop a collaborative research laboratory for experimenting with cellular growth techniques. The course will be working from the Architecture School's Digital Fabrication Lab and Biology's Cellular Incubator Lab. There will be visits and lectures from the faculty of Washington University's Medical and Engineering Schools throughout the semester.

Credit 3 units.

A46 ARCH 529F New Vision: Designing for New Tools

This course is a research project between the School of Architecture and the Computer Science Department at Washington University in St. Louis. The course starts with lectures on fundamentals of architectural perception with spatial context and Computer Vision based 3-D modeling methods. We will introduce state-of-the-art imaging applications on tablets and PCs, and explain the underlying technologies. The final project/research is to develop digital models and translations of an un-built architectural project through experimental visual tools that will alter 3-D modeling with Computer Vision as aids. This interdisciplinary course offering will have a potential to significantly broaden the interests and knowledge of our students in both departments, and create new research and education opportunities at an interesting intersection of two different fields.

Credit 3 units.

A46 ARCH 529G The Unruly City

The history of the American city is the history of conquering the "unruly": real estate parcels, neighborhoods, buildings, and even people that represent decay, obstacles to capital, unlawfulness or disorder. Designers denigrated unruliness in the pursuit of modernization in the 20th century, but today seem

more conflicted on the constitution and remedies for disorder. Is disorder in the eye of the beholder? What disrupts urban life more, the broken windows of vacant houses or the arrival of Whole Foods in a poor neighborhood? Neighborhoods that have lost most of their population and buildings, or new football stadiums offered as economic and architectural solutions to blight? Programs of "right-sizing," urban agriculture, tactical urbanism, infrastructure planning, police reform, upzoning (or unzoning), historic preservation and mass transportation have operative impacts that can either squelch and protect the "unruly." This course examines the divergent definitions of order and disorder that are shaping contemporary approaches to urban planning, governance and cultural production. Readings will include examination of the framing ideological debate between Robert Moses and Jane Jacobs. There will be several field trips to connect course readings to physical conditions around St. Louis.

Same as A48 LAND 529G

Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 530J Special Topics in History & Theory

Credit 3 units. Arch: GACS

A46 ARCH 538A Technology Transfer

The course will explore design, manufacturing, and production strategies employed for the development of technology in industries typically outside of the architectural domain. The performance characteristics of these technologies will be considered as they relate to desired impact, technical theory and process. The course will investigate the role of computation in design and production through an analysis of industry techniques related to computer modeling, performance analysis, CAD/CAM, rapid prototyping and robotics. The class will explore recent developments in the automotive, aerospace and shipbuilding industries among others for this research. In addition to analysis, students will be asked to develop and critique postulations related to the appropriate engagement of these technologies, design methodologies and production techniques in the "making" of architecture. Students will be asked to participate in discussions regarding their findings, write a report and make a formal presentation of their work.

Credit 3 units.

A46 ARCH 538C Advanced Building Systems

The capstone course in the technology sequence. The course is comprised of a series of lectures related to technical theory, an analysis of technical precedent and an integration exercise. The lectures focus on structure and enclosure systems, active and passive climate control systems, natural and artificial lighting systems, mechanical and electrical services for buildings. During the first half of the course, students conduct the analysis of technical precedent in architecture exercise. Technical precedents will be analyzed relative to their performance characteristics and their relationship to other technologies in the building. During the second half of the semester, students conduct an integration exercise. Students will identify with the help of the instructor, a schematic design suitable for development. Technical systems will be selected based on architectural issues, performance characteristics and systems integration. Prerequisites: Students should complete Structures I & II, Environmental Systems I & II, and Building Systems before enrolling in Advanced Building Systems. Students who do not meet the prerequisites must receive the permission of the graduate chair in order to enroll.

Credit 3 units.

A46 ARCH 540B Advanced Building Systems (Buenos Aires)

The capstone course in the technology sequence. The course is comprised of a series of lectures related to technical theory, an analysis of technical precedent and an integration exercise. The lectures focus on structure and enclosure systems, active and passive climate control systems, natural and artificial lighting systems, mechanical and electrical services for buildings. During the first half of the course, students conduct the analysis of technical precedent in architecture exercise. Technical precedents will be analyzed relative to their performance characteristics and their relationship to other technologies in the building. During the second half of the semester, students conduct an integration exercise. Students will identify with the help of the instructor, a schematic design suitable for development. Technical systems will be selected based on architectural issues, performance characteristics and systems integration. Prerequisites: Students should complete Structures I & II, Environmental Systems I & II, and Building Systems before enrolling in Advanced Building Systems. Students who do not meet the prerequisites must receive the permission of the graduate chair in order to enroll.

Credit 3 units.

A46 ARCH 552D Contested Edge: River - City Couplings

This seminar will investigate the contested edge between the Mississippi River and the adjacent occupied land — between development and commerce based on our human needs and desires, and a river indifferent to our presence. Over 100 years ago, Twain warned us about the futility of our attempts to control the volatile Mississippi River: "Ten thousand River Commissions cannot tame that lawless stream, cannot curb or confine it, cannot say to it, Go here or Go there, and make it obey." For reasons of river navigation, irrigation, hydropower and flood protection, the river has been dammed, straightened, deepened and segregated from its natural floodplain. These massive engineering feats have caused severe and perhaps irreparable ecological damage by upsetting natural flooding cycles, disrupting flows, draining wetlands and inundating habitats. The results, while temporarily beneficial to some communities, are the progressive intensification of floods and the destruction of riparian zones. Traditional static infrastructures will continue to play a necessary role but cannot adequately handle increased floods and droughts resulting from global warming and our own intransigence. Rather than continually building harder and higher to protect communities from high waters, knowing from experience that the wild Mississippi will continually topple our efforts, this seminar will explore gentler, smoother transitions between land and water, city and river. Looking toward a more resilient condition, we will explore this ecological crisis as an opportunity for constructing a more livable, coupled, edge as a continuum between river and settlement — one requiring us to bend, accommodate, refrain, and think more creatively and strategically. The work of the seminar will be to create both a River Manual and to initiate an interactive web repository of data, strategies, maps, history, river city coupling examples, focused on the Mississippi River at the St. Louis region. Students will contribute with research, mapping, graphic design and web construction.

Credit 3 units. Arch: GACS, HT

A46 ARCH 555C The Observer & The Observed

This seminar is intended to put students in contact with the urban and architectural culture or cultures in South America.

The discovery and observation of the many local ways of doing and thinking will take place through observation of the urban landscape and the appreciation of concrete works by local architects. Activities will be focused on critical observation of the urban context and architecture, including the development of graphic exploration instruments and techniques. The relation between the observer and the observed will be intensified through graphic exploration. In this way, the seminar will purposefully avoid published written criticism as a way to approach the cases and bodies of work to be studied. This will be in order to construct a vision more closely attached to the practice of design and the confrontation with concrete design issues and less "contaminated" by pre-established historical or theoretical interpretation. The choice of case studies coincides with the array of buildings to be visited in field trips in Buenos Aires, Brazil and Uruguay. Buildings and practices to be "observed" will represent different scales, different degrees of intervention and the construction of different landscapes. The seminar is based in three class settings: site visits, professor and guest lectures, and in-class presentations and discussion. Rather than a cold, systematized, technical instruction on graphics, the development of personal observation/drawing tools and techniques is stressed. This includes sketching on the site and redrawing assignments based on personal sketches.

Credit 1 unit.

A46 ARCH 561D Contemporary Urbanity and Urban Public Spaces

The seminar will review and discuss how the construction of the contemporary public urban space has developed from late 20th century to the present and considers possible future developments. The reinterpretation of the use of the public space and its dynamics will be the focus point of the seminar which will incorporate a wide variety of perspectives while following the international debate and discourse of public space and using St. Louis as a case study of how low-density urban configurations figure into the global conversation. The seminar will proceed in a multilayered approach including the following fields: historical emerging concepts of public space, the shifting and diffused boundaries between urban and non-urban environments; physical and geometrical magnitudes and accountable parameters (scale, density, economic, social and politic statistics); other non-apparent/non-physical conditions. Relevant case studies will be introduced as examples of possible strategies able to produce celebrated qualified and diverse public spaces, along with a review of examples taken from other cities. A comparison of mutual effects with contemporary American cities using St. Louis as reference. A close look to the particular performance of the city of St. Louis and its pulses of contemporary urbanity and its shared spaces will introduce the debate into the local circumstances. The case study work will use graphic (mapping) and written techniques but also through the detection of the local agent's debates about urban activities. The educational objectives of the course are to provide tools and basic knowledge to understand, analyze and propose contemporary public spaces as well as to develop the capacities to distill the various elements that compose urbanity, and to recognize the interactions between them.

Credit 3 units.

A46 ARCH 562D Community Development I

Not-for-profit organizations are a major force in the development of urban areas. These groups range from neighborhood-based Community Development Corporations (CDC) to the St. Louis Alliance of Community Organizations (SLACO) and other

governmental and private funding agencies and foundations. Housing, small business opportunities, job centers, transitional housing, neighborhood development, homeless shelters, and other types of projects are generally the concern of these corporations. It is the intent of this course to examine the role of not-for-profit corporations and the other players in the development of projects where not-for-profits played a significant role either as organizer, owner or developer. Representatives of various organizations, governmental agencies and foundations describing their institutional, legal and ethical roles in the projects make presentations throughout the semester. The case studies of specific projects are presented by teams at the end of the semester and a report is filed as part of an archive on urban and community development. The question that we ask is: How does community development occur using not-for-profit corporations? Open to juniors, seniors and graduate students; however, Master of Urban Design students are given preference. Fulfills Urban Issues elective requirement.
Credit 3 units.

A46 ARCH 563D Reconsidering the Margin: Places of Meeting, Spaces of Transformation

The financial crisis of 2008 and subsequent recession exposed the frailty of conventional modes of practice. The freezing of credit markets set off a contraction of increasingly bureaucratized creative fields such as architecture and fine arts and led to massive layoffs and underemployment. This extreme disruption coincides with an ongoing governmental disengagement from social assistance. The combination of the surplus of talent left by immobilized corporate practice and the vacuum created by a retreating government presents an opportunity to reconsider practice for a new generation in a way that engages a broader set of issues and problems. The seminar builds upon existing relationships and a body of previous engagement in the Pagedale community while laying the ground work for new action. This seminar challenges traditional modes and focuses of creative effort to arrive at a radical new form for creative practice. By challenging common assumptions and using creative production to confront the challenges facing residents and decision-makers, the course seeks to break down physical and disciplinary boundaries to achieve a radical new production. The seminar will include the following: examination of entrenched assumptions by students and community members through reading and discussion; involvement in the community, including volunteer work and civic participation; research into pressing issues that will culminate in a creative project; and dissemination of information to both classmates and the community as a whole. This course is open to disciplines outside of architecture. Students in Art and Social Work are encouraged to register. The course will meet periodically in the community. This course fulfills the Urban Issues or MUD Track elective requirement.

Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 563E Urban Theory & Cities in Latin America

This course proposes to explore the relationship between urban theories and the spatial construction of the city by using a number of Latin American cities as case studies. Some of the theories that will be examined here have been proposed as a way of reading and explaining the form, structure and functioning of existing cities. Others have been put forward as models for the planning of new ones. In one way or another, all of these urban theories have influenced and shaped the form and structure of our current cities and our ability to conceptualize them. The urban theories and cases reviewed will span from the colonial

city to the contemporary metropolis and urban region. The disciplines from which this course will draw upon will include urban planning, architecture, geography, urban sociology and anthropology. The scope of this course is intentionally broad and diverse as it aims to reflect the multitude of factors that are involved in urban phenomena. Some of the themes that will be examined include: the Spanish and Portuguese Colonial City; planned cities in the 19th century (the case of La Plata); modernization in Latin America; modernism and planned cities in the 20th century (the case of Brasilia); the "favelas" in Brasil and "villas miseria" in Argentina; postmodernism and globalization in urban studies; urban fragmentation in the contemporary metropolis (using the cases of São Paulo and Buenos Aires), and the debate on the sustainable urban form. The aim of this course is to provide a forum in which to discuss general theories and issues in urban thought, using primarily the cases of the cities that students will visit and experience first-hand over the course of the program. This course fulfills the Urban Issues elective requirement.

Credit 3 units. Arch: GAUI

A46 ARCH 563L Design as a Social Practice: Community Practice in Pagedale

This course will strive to understand our community through examining the inequities, divisions and tension within the St. Louis Metropolitan region and harness design as an agent for change and empowerment. The social and economic upheaval experienced in inner city neighborhoods and underserved communities over the last half century are the result of government and social services having withered in a period marked by dramatic social, demographic and technological changes effectively restructuring the U.S. economy. These issues may seem unrelated to the practice of architecture and urban design, however they are fundamental to how design shapes community. At this moment we are challenged as design professionals with the opportunity to engage and serve communities that have been marginalized by conventional modes of thinking and creative practice. The seminar builds upon existing relationships and a body work and engagement in the Pagedale community while laying the ground work for new action. This seminar questions traditional modes of practice and common assumptions through focusing creative production to confront the challenges facing residents and decision-makers. The course seeks to break down physical and disciplinary boundaries to achieve a radical new production. The seminar will include the following: examination of entrenched assumptions by students and community members through reading and discussion; involvement in the community, including volunteer work, community engagement and civic participation; research into pressing issues that will culminate in a creative project; and dissemination of information to both classmates and the community as a whole. This course is open to disciplines outside of architecture. Students in Art and Social Work are encouraged to register. The course will meet periodically in the community. CET (<https://gephardtinsttute.wustl.edu/cec/sam-fox-school-of-design-and-visual-arts>) course.

Credit 3 units.

A46 ARCH 564A Urban Development Seminar

Project-based research and discussions focus on the legal policy, social and architectural issues affecting the redevelopment of St. Louis and suburban areas such as Darst Webbe, Westminster Place, Clayton, and prototypical redevelopment of public housing projects of Carr Square, Darst Webbe and Vaughn into tenant ownership and market-rate

housing neighborhoods. Topics include public policy issues affecting development, the availability and types of housing, transportation linkages, business, zoning issues, social and historical precursors. Through interaction with community leaders, teams of students from each discipline prepare a design proposal for an actual problem in the St. Louis area. This seminar is an interdisciplinary effort taught by faculty members of Washington University School of Architecture and the St. Louis University School of Law, Social Work and Department of Public Policy Studies. Prerequisite: 400 level and above. Limit 8 students. Fulfills Urban Issues elective for MArch degree. Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 564K European/Contemporary/Urban Public Spaces

The aim of this seminar is to describe and understand contemporary urban public space in Europe from the late 20th century to the present, as well as to anticipate possible future developments. The seminar will examine this complex subject by investigating the following complementary topics: historical considerations of elements of public space generation; the continually evolving definition of public space; possible boundaries between urban, non-urban and landscape; scale and other parameters (density, urban fabric); physical and geometrical magnitudes of urban public space; social and political parameters; and other non-apparent/non-physical conditions. Barcelona, Amsterdam and Berlin will be used as examples of cities able to produce celebrated qualified and diverse public spaces. In addition, a series of 12 relevant case studies will be examined. The possibility of mutual interactions with American cities will be considered, using St. Louis as a reference. The educational objectives of the course are to provide some tools and basic knowledge to understand, analyze and propose a contemporary public space. We will learn how to distill the various elements that compose "urbanity," and to recognize the interactions between them. Fulfills Urban Issues elective requirement.

Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 565D Advanced Seminar in Urban Sustainability I

This seminar will investigate contemporary theories and methods of sustainable urbanism. Cities are increasingly the means through which a sustainable future for the anthropocene era is constructed. Within the sustainable urbanism paradigm, cities are understood as complex self-organizing open systems responding to socially constructed processes, conflicting values, natural resource limitations, extreme natural phenomena, man-made hazards, climate change and competing economic interests that inform urban change, design and development. Consideration will be given to the history, definition and reasoning for the urban sustainability paradigm; the theoretical constructs of sustainability, resiliency, adaptation and regeneration for post-carbon cities; the methods of analysis and measurement for urban sustainability; and the design of cities for livability, social inclusion, environmental performance, cultural diversity and economic equity. The course fulfills an Urban Design and Urban Issues elective for MUD, MArch & MLA degrees.

Same as A49 MUD 765D

Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 566A Informal Cities: the Future of Global Urbanism

This seminar will research the morphology & the morphogenesis of the Informal City as it evolves to be an integral phenomenon of global urbanism, and the corresponding economic, social, architectural and urban theory. Today, one billion people live in informal cities (36 percent of the world's population) and this is expected to grow another one billion over the next 30 years. As it is currently evolving, the informal city is an urban phenomenon set up within the planned city's territory and increasingly an integral part of it — often comprising up to 75 percent of the city and one of the elements of urban morphology that shapes city design. Thus, it is no longer possible to accept a concept of the informal city that centered on negative parameters (ghettos/slums/poverty/crime, etc.), but there is a need to find sustainable spatial solutions to integrate these settlements into the "formal" urban/architectural tissue leading to the dissolution of urban and symbolic boundaries between the "informal" areas and "formal" districts. To this end, the course will review various architecture and urban strategies and projects of informal urbanism in Asia, Africa and South America supported with an optional field trip to South America favelas/barrios in order to define a place of action for architects and urbanists in the informal city. The course fulfills the Urban Issue elective requirement for the MArch degree. Undergraduate enrollment is allowed by arrangement with the instructor.

Same as A49 MUD 566A

Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 566D Advanced Seminar in Urban Sustainability II

Same as A49 MUD 766D

Credit 3 units.

A46 ARCH 568F House and Home: Habits and Habitation

House and Home are broad categories of thought that have multiple meanings. The words encompass not only terms of building, belonging and place, but also terms of order, action and affection. The house has also been the site of conception and invention for the architectural projects of many significant modern master architects. In many contemporary practices, house and home have retained many ideas of these masters. However, many practices have simultaneously probed new meanings that investigate the relationship between habits and habitation with investigations of gender, sexuality and political order. This course fulfills the History/Theory elective requirement.

Credit 3 units. Arch: GARW, HT

A46 ARCH 571A Landscape History II: Prehistory to 1850

Current work in landscape architecture draws from a wider range of references than conventional landscape gardening, engaging the deeper roots of urban design, planning and infrastructure in order to create spaces that fully integrate with and inform the surrounding context. Accordingly, this course broadens the field of historical inquiry, taking in topics ranging from cultural understandings of space to the design of sacred sites, military installations and water systems. The survey begins with prehistoric settlements and ends with the dawn of professionalized landscape design in the 19th century. Students will work through class discussion and writing projects to trace the cultural currents linking the first endeavors in land-making to today's practice.

Same as A48 LAND 571

Credit 3 units. Arch: HT

A46 ARCH 573B Alternative Modes of Professional Practice

This course endeavors to reconsider the approach, means and delivery methods — the modes if you will — of architecture and its construction. Beginning with an overview of traditional project delivery, the course will serve as a foundation for future research by investigating, interviewing and compiling known methods of emerging practice trends and critical speculation of unproven types. The second stage will include reaching-out and bringing-forth a cross-section of experts and individuals spearheading similar strategies around the United States.

Credit 3 units.

A46 ARCH 573C Material / Practice

The seminar will provide each student a heightened understanding of material translation and detailing strategies that amplify conceptual design intent and that is sympathetic to the needs of professional practice. Content will endeavor to examine, at an advanced level, the intersections of design strategies with modes of professional practice. The semester will begin with an investigation of emerging practice trends; researching impacts on collaboration models, design approach, delivery methods and construction. The course will then shift to analysis and translation of conceptual design thought through to material, performative and experiential realization. Critical speculation of the underlying modes of practice and project delivery will parallel the analysis. The semester will conclude with material and detailing discourse in support of each student's studio work. Seminar dialogue will examine the overlap of practice and project delivery through the lens of design-thinking in lieu of the traditional lens of risk management. Where possible the course will bring forth experts from leading practices around the United States.

Credit 3 units.

A46 ARCH 574B Principles of the Virtual Design and Construction (VDC) Process

Virtual Design and Construction (VDC) is the use of multidisciplinary performance assessing models of the design/construct/own-operate process to support a variety of objectives. Intended for students who wish to explore the optimization potential of the VDC process, this course investigates VDC as managers/leaders in the Built Environment. The course focuses on developing models of integrating all perspectives: Design (architects/engineers/consultants), Construction (managers, contractors, subcontractors), Business (develop, own, operate) to overcome the technological and institutional changes and challenges of implementing VDC. Students will develop and implement fair-minded critical-thinking problem-solving techniques to advance contemporary decisions to improve virtual collaboration while reducing fragmentation and interoperability.

Credit 3 units.

A46 ARCH 579 Ecological Economics

This course is designed to give students an appropriate graduate-level understanding of the fundamental assumptions, the conceptual novelties, and the distinctive tools of analysis that comprise the emerging discipline of ecological economics, and to explore the role this new paradigm is playing in the movement toward a sustainable society. Standard economics — the neoclassical model — sees the economy as the whole that contains all other values; nature has value because some people will pay to experience it or to enjoy its services. Ecological

economics reverses that relationship by acknowledging the environment, not the economy, as the containing whole. This it does through its grounding in the laws of energy — the laws that model the behavior of both natural and built systems. (While matter can be recycled, energy can't. No machine can take its own exhaust outputs as fresh inputs; no animal can survive by eating its own excrement.) Fulfills Urban Issues elective requirement. Fulfills MUD Track elective requirement.

Credit 3 units.

A46 ARCH 579A Ecological Economics for Sustainable Cities and Landscapes

This course is designed to provide students with an understanding of the fundamental assumptions, the conceptual novelties, and the distinctive tools of analysis that comprise the emerging discipline of ecological economics as it applies to cities and landscapes, and to explore the role this new paradigm is playing in the movement to convert our society from a high-throughput, unsustainable society to a lower-throughput, sustainable system. Standard economics (including the subfield of environmental economics) sees the economy as the whole that contains all other values. In this view nature has value because some people will pay to experience it or to enjoy its services. Ecological Economics reverses that relationship by acknowledging that the environment, not the economy, is the containing whole. This approach comprises a revolutionary challenge to the foundational premises of contemporary economics. Economics has never undergone the thermodynamic revolution that swept through the physical, life, and social sciences in the late 19th and early 20th century. The course will look briefly at this intellectual history in order to place our studies into their broader social, historical, political, and disciplinary context — and to give students the conceptual background and tools they need to engage the old paradigm in ways that will promote its adaptation to physical reality.

Same as A49 MUD 579A

Credit 3 units. Arch: GAMUD, GAUI, UI

A46 ARCH 580 Design Thinking: Research and Design Methods

Covers the fundamentals of project planning, proposal writing and alternative research and design methods. This course is a prerequisite for Design Project (Arch 616). Grade of B- or better required in preceding two studios.

Credit 3 units.

A46 ARCH 601 Theories & Methods of Historical Research

What is architectural history? This is an advanced reading, writing and discussion seminar intended to better prepare students for research in the history and theory of architecture and urbanism. It is based on the premise that since contemporary design practices are not only data-driven, neutral and ahistorical, the ways that designers' conceptualize their work can benefit from a historically-informed understanding of how various approaches to architectural history have emerged over time. It seeks to consider how architecture and architectural history have been understood in the past, and how the development of the discipline informs contemporary research in architectural history by examining how recent and contemporary historians of the built environment do their work. This course fulfills the History/Theory elective requirement.

Credit 3 units. Arch: GARW

A46 ARCH 611 Architectural Design VII

Prerequisite: satisfactory completion of Arch 512. Twelve hours of studio work a week.
Credit 6 units.

A46 ARCH 611B Architectural Design VII (Buenos Aires)

Prerequisite: satisfactory completion of Arch 512. Twelve hours of studio work a week.
Credit 6 units.

A46 ARCH 611H Architectural Design VII (Berlin)

Prerequisite: satisfactory completion of Arch 512. Twelve hours of studio work a week.
Credit 6 units.

A46 ARCH 616 Degree Project

Independently initiated design and research projects based on Design Thinking (Arch 580) Proposal to fulfill final requirements for degree award. Prerequisite: Design Thinking (Arch 580).
Credit 6 units.

A46 ARCH 623B History of Urban Design

Examines the history of urban design, with an emphasis on the period 1890 to the present. Major topics include the urbanism of the Spanish Laws of the Indies; the development of the row house and the urban square; the park, parkway and suburban planning of Frederick Law Olmsted and others; the urban planning ideas of Camillo Sitte, Ebenezer Howard, Otto Wagner, Antonio Sant'Elia, Eric Mendelssohn, Tony Garnier, Le Corbusier, the Soviet urbanists and disurbanists, CIAM (Congrès Internationaux d'Architecture Moderne), Team 10, Aldo Rossi, Venturi and Scott-Brown, the Situationists and New Urbanism; and various other approaches to be determined.
Credit 3 units.

A46 ARCH 646 Professional Practice I

Develops awareness and understanding of architectural practice including the relation of the profession to society as well as the organization, management and documentation of the process of providing professional services. Covers the areas of (1) project process and economics, (2) business practice and management, and (3) laws and regulations. Prerequisite: 500-level studio placement or above.
Credit 3 units.

A46 ARCH 648F Project Design Realization: From Concept to Construction

Advanced study of professional practice topics focusing particularly on project management, construction documents production, and construction phase services and responsibilities of the architect. Students will select a project which they have produced previously in design studio and will create construction documents for this project. Likewise, the individual projects will be used to discuss project management processes and construction administration. This is not a technology course, but rather focuses on concepts and systems used by the architectural profession to describe architectural designs for the purpose of bidding the project and creating a legally binding document on behalf of architectural clients.
Credit 3 units.

A46 ARCH 652H Metropolitan Development: What's in a Plan?

This course explores pluralist, pragmatic and progressive planning strategies for American urbanism. It provides students with an introduction to the design and planning of American cities in the context of this country's democratic tradition, its multicultural society and the particular morphology of its urban areas. Contemporary American cities have urbanized in unprecedented and distinctive ways that suggest the creation of a unique urban culture, despite the seeming globalization of urban trends or the apparent universalization of urban forms. Identifying the role design can play in this culture requires a lucid appraisal of the context in which metropolitan development takes place. Four study modules introduce basic issues in planning law, real estate finance, urban economics and environmental planning through lectures and research projects, as well the presentation of Metropolitan St. Louis development case studies by professional and political leaders.

Same as A49 MUD 652H
Credit 3 units. Arch: GAUI, UI

A46 ARCH 656 Metropolitan Urbanism

The seminar course investigates the morphology and morphogenesis of the contemporary America metropolitan urban landscape. The investigation attempts to define and understand the changing pattern, form and use of the metropolitan transect from the central city to the rural fringe. The objective of the course is to understand the indeterminate complexity and richness of morphological layering and traces in the urban landscape as a basis for critical practice. Required for MUD students. Fulfills Urban Issues elective requirement.

Same as A49 MUD 656
Credit 3 units. Arch: GAUI, UI

A46 ARCH 664 Historic Preservation/Urban Design

This class explores the history and current practice of historic preservation in the United States and relates them to local issues of contextual architecture, sustainable development, cultural tourism, and urban design. Emphasis is placed on the practical knowledge needed to participate professionally in historic preservation: how to evaluate the associative and architectural significance of a property or district, how to provide legal protection and redevelopment incentives for historic resources, how to appropriately restore, rehabilitate, adapt, and add to historic buildings, and how to incorporate historic preservation into the sometimes contentious framework of community planning. The course focuses on readings, student discussion, and case studies that draw extensively on real preservation situations in the region, including trips to the innovative Cupples Warehouse and Bohemian Hill projects, the endangered Old North St. Louis neighborhood, and a charrette in the Central West End.

Credit 3 units. Arch: GACS, GAMUD, GAUI, UI

A46 ARCH 711 Elements of Urban Design

The first of a three-semester sequence of design studios for students in the Master of Urban Design program.
Credit 6 units.

A46 ARCH 714 Metropolitan Urban Design

The third in a three-semester sequence of design studios for students in the Master of Urban Design program. This is a summer studio held in an urban location away from St. Louis.

Credit 6 units.

A46 ARCH 760 Thesis Research

Credit 3 units.

Landscape Architecture

Visit online course listings to view semester offerings for A48 LAND (<https://courses.wustl.edu/CourseInfo.aspx?sch=A&dept=A48&crslvl=5:8>).

A48 LAND 501 Landscape Architecture Design Studio III

This studio investigates the planning and design of a post-industrial site in Saint Louis city, through reclamation strategies and an understanding of the site's ecological, historical and cultural underpinnings. Students will propose a design that addresses both the specificity of site and the larger environment through conceptual and analytical research. Examination of program, infrastructure, natural processes and reclamation will lead to a generative process to shape the landscape at multiple scales — from urban context to site concepts to personal experience.

Credit 6 units.

A48 LAND 520 Landscape Representation II: Digital Tools

In the second course of the MLA representation series, students will be introduced to digital landscape illustration with a focus on representation of the phenomenological. This course will explore hybrid representation combining hand-drawing and digital techniques, diagramming as dynamic process (using tools such as Adobe After Effects), landscape entourage techniques, and their implementation within traditional architectural drawings, such as plan, section, elevation and perspective. Focus will be placed on exquisite craft, intelligent methods of creation and clarity of conveyance. Open to all graduate and undergraduate students interested in representing site and landscape, with the permission of the instructor.

Credit 3 units.

A48 LAND 521A Visualizing Ecological Processes

This course focuses on building skills in 3-D modeling, animation and simulation to add 4-D (time) processes into analysis, experimentation and presentation. Following the introduction and basic skills preparation, the course will focus on aspects important to creating animations and illustrations that depict landscape environments and dynamic processes. Projects will explore graphics techniques from various visual arts industries in order to expand the repertoire of skills. Techniques incorporating 3ds Max, After Effects, ArcGIS, Photoshop and/or Illustrator will be examined to illustrate chronological, phenomenological, experiential and conceptual ideas in design. Course projects will focus on development of narrative and emphasize the art of storytelling as they pertain to representation and illustration of design intent. Fulfills Digital elective requirement. Prerequisite: A48.520 or equivalent course(s) approved by instructor.

Credit 3 units.

A48 LAND 524E Ordinance: Territorial Rules & Urban Administration

What is the link between rules and form? What is the relationship between form and politics? This course will essay

an administrative history of the built environment, taking as its starting point the rules, codes, ordinances, laws and guidelines that shape the landscape. We will turn a critical yet curious eye toward historic and contemporary case studies that shape or are shaped by a robust regulatory framework — from the French Forest Ordinance of 1669 to the work of MVRDV and contemporaries. We will examine both the built results and the theories and philosophies of design by which they are animated. In the arc of our readings we will seek to link our territorial, urban and architectural understanding with broader historical and economic moments. In addition to carrying out readings, discussions and analyses, students will work toward *Ordonnance*, a collective publication that will historicize and diagram this administrative impulse.

Same as A46 ARCH 524E

Credit 3 units.

A48 LAND 524F Critical Spatial Practice: Art / Architecture / Landscape / Urbanism

Critical Spatial Practice reads the history of art, architecture, landscape and urbanism across the grain in an effort to tease out latent affinities and to heighten meaningful antagonisms. In particular, this class takes a critical look at the ways in which creative practice has situated itself in relation to politics, power, society and space, while maintaining a certain autonomy from each of these registers. Themes such as: historic and collective memory; empire and war; publics and counterpublics; city and countryside; institutions and the everyday; will all be central tropes as we ask questions of what, exactly, provokes one to make. Each of these disciplines shares a certain projective and critical orientation to the world — but what is it that makes their methods so distinct? What might we learn from knowledge of these differences? Where do shared passions break down? As critical practitioners, we look to make sense of the world — while our search for meaning may take radically different forms. Throughout the term, we will be focusing on a range of projects, movements, artists/practitioners and groups that take seriously the situatedness of their work. We will cover practices that might fall under more recognized categories, such as: performance, land art, ecology, social practice, everyday urbanism, pedagogy, curation and installation. We will interrogate the modes of production as well as modes of distribution that creative practitioners work within and against. We will look at the history of artists and designers engaging the built and natural worlds in ways that exceed the disciplinary frameworks of their time. From the Dada excursions to the Situationist Derives, from the urban representation of the CIAM grille to the urban choreography of Daniel Buren, and from the Romantic geography of Humboldt to the displaced geography of the Atlas Group. Throughout, we will be reading foundational texts — theoretical, historical and methodological — that help situate these projects and movements within their contemporary milieu. By focusing on the context of these practices, this course has its eye on the many conceptual elisions and canonical lacunas that emerge in disciplinary-specific histories from the early 20th century to the present — while also operating as a retroactive genealogy of the aspirations of the Sam Fox School. Weekly meetings will be structured around an organizing theme with related readings, screenings and viewings. Each class will consist of a short lecture by the instructor framing the topic, a student presentation weaving a network of thought around a single specific work/project, and subsequent discussion. Final projects will critically engage the themes of the course as students produce a publication, installation, video or performance that takes a position.

Same as A46 ARCH 524F

Credit 3 units.

A48 LAND 524G American Cultural Landscapes

Whether we are designing buildings, landscapes or neighborhoods, we are working on a cultural landscape — a place built from customs, memories, histories and associations as much as visual design itself. This course provides an overview of American cultural landscapes and their alteration, through readings, visual art, site visits and field surveys. Symbolic, utilitarian, architectural, scenographic or personal meanings will be explored alongside site histories. Throughout the semester, the course will interrogate the concept of vernacular landscapes, more broadly defined as landscapes of everyday life. From roadsides to homesteads to tourist attractions to landfills to urban neighborhoods, vernacular landscapes define the image of America to large extent. Readings will unpack the contingencies between design, economics, cultural politics, agriculture, consumption and technology that inscribe culture across the land. Course work will be informed by the work of geographers, historians, writers, preservationists, filmmakers and visual artists. J.B. Jackson and Lucy Lippard's theories about the cultural uses of land will be anchors. Along the way, course readings and experiences (including fieldwork) will make stops along the way to examine local landscapes including a radioactive landfill, the neighborhoods of Detroit, the "wild" west, Appalachian terrain, the Mississippi River, the Sunset Strip, the Buffalo Bayou in Houston and more. The course will pose a taxonomy of the types of cultural landscapes while presenting various methods for decoding, recording, interpreting, preserving and altering these places.

Credit 3 units. Arch: GACS

A48 LAND 529G The Unruly City

The history of the American city is the history of conquering the "unruly": real estate parcels, neighborhoods, buildings, and even people that represent decay, obstacles to capital, unlawfulness or disorder. Designers denigrated unruliness in the pursuit of modernization in the 20th century, but today seem more conflicted on the constitution and remedies for disorder. Is disorder in the eye of the beholder? What disrupts urban life more, the broken windows of vacant houses or the arrival of Whole Foods in a poor neighborhood? Neighborhoods that have lost most of their population and buildings, or new football stadiums offered as economic and architectural solutions to blight? Programs of "right-sizing," urban agriculture, tactical urbanism, infrastructure planning, police reform, upzoning (or unzoning), historic preservation and mass transportation have operative impacts that can either squelch and protect the "unruly." This course examines the divergent definitions of order and disorder that are shaping contemporary approaches to urban planning, governance and cultural production. Readings will include examination of the framing ideological debate between Robert Moses and Jane Jacobs. There will be several field trips to connect course readings to physical conditions around St. Louis.

Credit 3 units. Arch: GAMUD, GAUI, UI

A48 LAND 530A Special Topics: American Cultural Landscapes

Whether we are designing buildings, landscapes or neighborhoods, we are working on a cultural landscape — a place built from customs, memories, histories and associations as much as visual design itself. This course provides an

overview of American cultural landscapes and their alteration, through readings, visual art, site visits and field surveys.

Symbolic, utilitarian, architectural, scenographic or personal meanings will be explored alongside site histories. Throughout the semester, the course will interrogate the concept of vernacular landscapes, more broadly defined as landscapes of everyday life. From roadsides to homesteads to tourist attractions to landfills to urban neighborhoods, vernacular landscapes define the image of America to large extent. Readings will unpack the contingencies between design, economics, cultural politics, agriculture, consumption and technology that inscribe culture across the land. Course work will be informed by the work of geographers, historians, writers, preservationists, filmmakers and visual artists. J.B. Jackson and Lucy Lippard's theories about the cultural uses of land will be anchors. Along the way, course readings and experiences (including fieldwork) will make stops along the way to examine local landscapes including a radioactive landfill, the neighborhoods of Detroit, the "wild" west, Appalachian terrain, the Mississippi River, the Sunset Strip, the Buffalo Bayou in Houston and more. The course will pose a taxonomy of the types of cultural landscapes while presenting various methods for decoding, recording, interpreting, preserving and altering these places.

Credit 3 units.

A48 LAND 530B Special Topics: Anti-Development: Vacancy, Wilderness and Ruin

What if we let the city decline, change or go wild? Is land development truly "sustainable urbanism," or are depopulating cities like St. Louis and Detroit trying to speak another path to us? This seminar examines anti-growth urban land management and preservation practices — practices that embrace systems of emergent, wild and unexpected urbanism. With some readings as guide, students will explore topics of state landbanking and autonomous land trusts, managed depletion (including St. Louis' infamous "Team Four" memorandum), wilderness conservation and "greenway" creation, watershed reintroduction, agricultural land reclamation, experimental historic preservation projects that eschew restoration or even rehabilitation and even land taxation policies. The seminar will probe the question of what makes the city whole, with field outings in St. Louis and beyond. Work in the seminar will be based on site-specific interventions developed throughout the semester, proposing ways to undevelop sites and realize latent ecological vitalities.

Credit 3 units.

A48 LAND 541A Plants & Environment

Students will learn to identify plants found in the natural communities and built environments of Missouri and the Midwest, both exotic and native, in order to form a base palette of landscape plants for the region. In addition to learning the plants' spatial characteristics, students will gain a basic understanding of the biological factors and horticultural practices influencing plant growth. While addressing the roles of individual species and selections, plants are also examined as parts of an interdependent community. The final goal will be to assess, and begin to practice, the appropriate use of plants in landscape design.

Credit 1.5 units.

A48 LAND 541B Grading + Landform

This introductory course in earthwork and grading combines the study of historical and contemporary landforms in designed

landscapes and artworks with the technical aspects of surveying, contours, formulas, drainage and graphic representation. Students will gain a basic understanding of three-dimensional form, contour manipulation, the concept of drainage, and the relationship between planting and landform. The observation, measuring and experience of landform in case studies will demonstrate how topography shapes our perception and use of space.

Credit 1.5 units.

A48 LAND 542A GIS for Site Design

This course module will introduce GIS mapping software and its application to methods used in site planning and design. The focus of this half-semester course is to understand the potential of GIS to visualize, analyze and utilize complex data. Students will learn techniques and tools in ArcGIS software, and explore how these can be applied to projects specific to individual sites. This course will introduce new skills and analytical complexity while building upon previously learned representation techniques. MLA students have priority.

Credit 1.5 units.

A48 LAND 542B Planting Design

The Planting Design module builds upon the Plants and Environment class, applying and expanding the vocabulary of plant material to understand the definition and construction of landscapes. Students will gain an awareness of planting typologies and strategies through function (micro-climate control, water consumption, hardiness) and perception (shade, color, density, texture). A series of design exercises will inform strategic plants specification in order to suit, define or reinvent landscape typologies — from parks and gardens to green roofs and restorative landscapes. Conceptual thinking and an understanding of management and sustainability are emphasized. The maximum enrollment for this course will be 12. MLA students have priority.

Credit 1.5 units.

A48 LAND 551A Landscape Ecology

Effective and sustainable design requires knowledge of the unique combination of systems, processes and organisms that define specific regions, as well as the basic principles governing ecosystems. Applied ecology and design must also consider the role of human cultural interactions in shaping these systems. This course provides a broad understanding of ecological concepts focused through the genesis, character and cultural relationships of contemporary ecosystems. Students will learn to use concepts of ecology, conservation biology, evolutionary theory, and natural and cultural history to determine the factors and system constraints influencing the design of landscapes. The course focuses on local ecosystems: their origins, composition, process regimes, and historic and contemporary cultural interactions. Through this immersion in local landscapes and habitats, students will gain an understanding of biological systems and ecological concepts, and acquire the tools to inform ecologically relevant and sustainable design anywhere in the world. The class incorporates lectures, guest presentations, field trips, and extensive readings and class discussions, along with assignments combining research and analysis in a design context. The maximum enrollment for this course will be 12. MLA students have priority.

Credit 3 units.

A48 LAND 553 Integrated Planting Design

This course focuses on both the cultural, environmental, scientific and the technical aspects of planting design. The course will be taught in three modular sessions: horticulture and the science of plants; typologies and design such as bosque, grove, glade, allee, meadow, wetlands, hedgerow, etc., and their origins in productive landscapes, and application to contemporary landscape architecture; and the practical hands-on experience in the field with both design documentation to installation techniques. The course will offer several field trips to experience urban revitalization, various design typologies, sustainable land use, reclamation and restoration.

Credit 3 units.

A48 LAND 560 Introduction to Arboriculture

Trees play a significant role in the overall ecosystem of our planet. They function both globally as well as microscopically. By better understanding the anatomy, physiology, growth habits and needs of trees, we can make more informed decisions as designers. There are finite, quantifiable aspects to how a tree develops, yet there are also environmental and human factors that can disturb or interrupt normal functions and patterns. It is the charge of the designer to delve into the science of trees in order to better inform our design solutions and make appropriate sustainable choices.

Credit 3 units.

A48 LAND 560A Trees, Soils, & Systems: Introduction to Arboriculture

Trees play a significant role in the overall ecosystem of our planet. They function both globally as well as microscopically. There are finite, quantifiable aspects to how a tree develops, yet there are also environmental and human factors that can disturb or interrupt normal functions and patterns. It is the charge of the designer to delve into the science of trees in order to better inform our design solutions and make appropriate sustainable choices. The course objectives are to make the student familiar with the anatomy of trees, to understand soils and their effects on trees and vice versa, to increase their abilities to identify trees, especially during the winter months, to understand the business of how trees are managed, whether it be growing, maintenance or specification of appropriate local nursery stock and to gather knowledge of trees and their relationship in our sustainable environment. Each class will have an informal lecture component that will present the latest in technologies of arboriculture practices. The class readings and assignments will correspond with the lecture topics and a subsequent discussion will follow or be intertwined into the lecture presentation itself. The application of the information will be in clear, concise weekly exercises. There will be several field trips to the Missouri Botanical Garden, a trip to Forest Park to look at the varied tree habitats and what worked and what is not working, as well as a trip to a local tree nursery.

Credit 3 units.

A48 LAND 565 Landscape Technology

Throughout the world of spatial design, there has been a strong resurgence of interest in landscape methods as a comprehensive and innovative approach toward defining and engineering sites. Techniques of working the land engage dynamic processes, molding conditions and creating forms in order to control erosion, conserve water, and minimize human impacts. As such, landscape methods have created new standards of performance for sites of all sizes and

circumstances. Accordingly, this course, intended for students across disciplines, presents an integrated approach to site planning through the intensive study of applied landscape systems. The material covers the spatial and functional systems of designed landscapes and their associated computational and technical aspects: micro- and macrograding, path alignment, and drainage calculation. Through studying these techniques, students will learn to implement and quantify water management, microclimate manipulation, and low-impact circulation, parking and servicing. The principles and methods are presented through short lectures and supported by case studies, class workshops and design exercises, tying theory to practical applications. The maximum enrollment for this course will be 12. MLA students have priority.
Credit 3 units.

A48 LAND 571 Landscape History II: Prehistory to 1850

Current work in landscape architecture draws from a wider range of references than conventional landscape gardening, engaging the deeper roots of urban design, planning and infrastructure in order to create spaces that fully integrate with and inform the surrounding context. Accordingly, this course broadens the field of historical inquiry, taking in topics ranging from cultural understandings of space to the design of sacred sites, military installations and water systems. The survey begins with prehistoric settlements and ends with the dawn of professionalized landscape design in the 19th century. Students will work through class discussion and writing projects to trace the cultural currents linking the first endeavors in land-making to today's practice.

Credit 3 units. Arch: HT

A48 LAND 571A Landscape Architecture History & Theory

Current work in landscape architecture draws from a wider range of references than conventional landscape gardening, engaging the deeper roots of urban design, planning, and infrastructure in order to create spaces that fully integrate with and inform the surrounding context. Accordingly, this course broadens the field of historical inquiry, taking in topics ranging from cultural understandings of space to the design of sacred sites, military installations, and water systems. The survey begins with prehistoric settlements and ends with the dawn of professionalized landscape design in the 19th century. Students will work through class discussion and writing projects to trace the cultural currents linking the first endeavors in land-making to today's practice.

Credit 3 units. Arch: GACS, HT

A48 LAND 574A Modern and Contemporary Landscape Architecture

This course examines significant theories and discourses in modern landscape architecture that have informed contemporary modes of practice. Organized around specific topics and lenses (such as site, ecology, art and sustainability), the course aims to provide a number of critical perspectives on the relevance of landscape architecture as a cultural practice. Readings and discussions will supplement lectures to trace back contemporary ideas to the late 19th and early 20th centuries. We will look at how broader transformations in social, environmental, economic and technological realms have affected discourse in landscape. To this end, students will be introduced to definitions that distinguish between landscape as a medium, landscape as an ideology, and landscape as a profession. Through weekly reviews of seminal projects and built works, we will

examine significant styles, movements and design principles in landscape architecture. The course incorporates field trips and presentations by visitors, as well as applied research. It is open to both undergraduate and graduate students in the disciplines of landscape architecture, urban design and architecture. Priority is given to MLA students and undergraduate landscape architecture minors. Can count as a History/Theory elective.
Credit 3 units. Arch: GACS, HT

A48 LAND 575 Research in the Landscape: Methods and Practices

This course is intended to cultivate the research methods essential to practice and study in the landscape today. As the culmination of the landscape history/theory sequence, we will build on prior curricular study and experience in research to create coherent frameworks for the theory and practice of research. In such a way, we will form an overview of the varied ways by which useful information can be derived from existing sources in order to advance the design and study of landscapes. Students will engage and practice a variety of research activities including archival research, textual and visual interpretation, on-site environmental analysis, and social survey. Working with a high degree of independence and initiative, students will engage scholarly works both as objects of critical reflection and as potential models for their own explorations. Though open to all design students, this course will optimize prior experience with ecology, GIS, and the discipline of landscape architecture.
Credit 3 units.

A48 LAND 601 Landscape Architecture Design Studio V

Credit 6 units.

A48 LAND 602 Landscape Architecture Design Studio VI

Credit 6 units.

A48 LAND 645 Professional Practice for Landscape Architecture: Business, Practice and Management

Advanced study of professional practice topics focusing on firm management and project management for landscape architecture projects. Firm-related topics include starting a practice, financial management, legal structures, marketing, staffing, professional ethics and risk management. Project-related topics include fee negotiation, project structures and participants, scheduling, use of contracts and management documents, and construction document systems. Course activities include project site visits and visits to local firms with landscape architecture design services.

Credit 3 units.

Urban Design

Visit online course listings to view semester offerings for A49 MUD (<https://courses.wustl.edu/CourseInfo.aspx?sch=A&dept=A49&crslvl=4:8>).

A49 MUD 4102 Lively City: Behavioral Studies & Public Space Design

During this three-day masterclass in Berlin, Germany, 20 students will have the opportunity to learn about behavioral studies and the design of public spaces. Working alone and

in small groups, students will acquire new perspectives and skills that put people and their needs at the heart of the creative process of re-imagining and transforming cities. Livability, lively cities, public life and other concepts describing inviting, vibrant and stimulating urban environments are frequently communicated in new visions for the future of cities today. This focus on "urban life" is a direct reaction to the urban realities created in the 20th century, where increases in our standards of living and the associated city building processes have created areas in which large and increasing numbers of people have become isolated from each other, socially and geographically. Despite our new awareness for the need to plan for a shared and intensified urban life in sustainable cities, we continue to have difficulties in understanding exactly what this "urban life" is, how much of it we truly want and need, and how we can reconcile the often conflicting and simultaneous needs of people for privacy and social stimulation. Employing the examples of University City and the Gateway Arch/Archgrounds the class will study behavior in accessing and using defined sections of both urban areas as a way of dealing with complex urban design challenges in St. Louis. Through field studies and observations each student will explore cost-effective and culturally sensitive solutions that can improve the integration of these important urban assets in the City of St. Louis. Open to all graduate students, with priority given to MUD studio and seminar students. Visas are required to travel to England, depending on the passport country of the student. Preparation for visa applications begins on the first day of classes during the spring semester. There is a minimum enrollment of eight by February 1.
Credit 2 units.

A49 MUD 463B Emergent Urbanisms

This course surveys emergent models of urbanization in globalizing cities that thus far defy categorization or exist peripherally in studies of urban form. The goal of the course is to equip students with the theoretical and historical background, the analytical tactics, and the critical awareness necessary to reposition themselves as designers in these increasingly challenging contexts. Through case study examples and supporting readings, the course will decipher the formal, social, and environmental effects of particular processes defining new urban spatial configurations in city-regions around the globe. Most of these processes are driven by discourses of "efficiency," such that urban forms are increasingly inflected by economic operating systems as they are subsequently detached from traditional concerns of livability and public interest. Emerging urban assemblages include: massive manufacturing warehouse landscapes or logistical distribution centers and "aerotropolis" transit hubs as well as those spaces left behind by regional restructuring: de-urbanizing (or deliberately erased) environments which contradictorily "enable growth" in other areas (or over the same areas); and the informal settlements that emerge more spontaneously on the margins of mainstream urban policy. Students will use their understanding of these spatial and logistical configurations to project creative models for redirection or engagement. Sources and analytical tactics will be drawn from across fields including design, sociology, geography and history. Fulfills Urban Issues elective requirement, MUD-Track elective requirement.
Credit 3 units.

A49 MUD 463C Invisible Cities

This graduate and advanced undergraduate seminar takes as a point of departure the famous 1972 Italo Calvino text that reframes a single city (Venice) as multiple cities, told through

a sequence of discrete narratives and descriptions. Each of Calvino's invisible "cities" reflect different emotional and physical environments and possibilities — or impossibilities — for their inhabitants, yet are all still connected through an overarching narrative. Invisible Cities, the course, builds on this premise that a city is not a one-size-fits-all experience (nor a monolithic construct with a uniform constituency), but instead is composed of radically different environments all selectively accessed, depending on one's positionality or relationship to urban redevelopment processes. In places like St. Louis — but in fact in all American cities — residents live out different urban realities or imaginaries, with unequal access to the same services, provisions and processes. A highly visible instance of this occurs along Delmar Blvd in St. Louis where two contrasting lived experiences play out in neighborhoods across from each other on the north-south divide. But this class posits that much less visible instances of the duplicitous city also exist, in spaces not geographically divided, but (more insidiously) overlaid. The course will focus on this conceptualization of inequality where both privileged and underserved populations co-exist in much more intertwined ways. Within any given block, neighbors live according to different opportunities, for education, health access, police services, or routes to property acquisition and financing. These are the invisible, spatially simultaneous cities; the urban realities that are much harder to see — at least to those who do not live those realities on a day-to-day basis. Like in Calvino's world, urban and lived space is endlessly continuous and accessible for some; for others it is fragmented, even disorienting or opaque. This course will examine, frame, collect and document the various manifestations of invisibility together with the political instruments and policies that produce — and reproduce — it. We will use the St. Louis region as our primary focus, with comparisons to other sites. Our studies will involve a close re/reading of many of the mechanisms of daily governance and urban design such as policies, planning tools, legal, financial and real estate protocols and of course design decisions and processes; i.e., the apparatuses of urban redevelopment that exist right before our eyes. The seminar welcomes both graduate students and advanced undergraduate students from across disciplines. Support for Invisible Cities is provided by the Washington University in St. Louis Ferguson Academic Seed Grant Program granted through the Offices of the Chancellor and Provost and the Olin Business School. Fulfills Urban Issues and MUD Track elective requirement.
Same as A46 ARCH 463C
Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 5078 Developing Sustainable Urban Communities

Across the country, there is a drive to develop high-quality, economically and racially diverse, vibrant and sustainable urban communities. St. Louis is no exception to this trend. For reasons of sustainability, poverty alleviation and city building, community leaders and public officials in St. Louis are working to develop neighborhoods and communities that incorporate these factors. Developing Sustainable Urban Communities is a project-based course for graduate students and advanced undergraduates which asks interdisciplinary groups of students to contribute solutions to substantively and politically challenging place-based urban redevelopment challenges in St. Louis. Students will work in small teams to develop their projects over the course of the semester through research, dialogue with a team of interdisciplinary faculty, examination of relevant case studies, and engagement with client organizations in the community. Course participants will choose one of three semester-long projects, the subject of which will be developed by course instructors and client organizations in advance of the semester.

The course will meet both on-campus and at various community sites. For MSW Program SED Concentration students, this course fulfills the SED concentration Practice Methods requirement. Enrollment is limited to 24 students with prior course work in community development, urban design or related fields. Preference is given to graduate architecture and social work students; other students will be admitted by permission of the instructors. Upon registering in the course, please send a brief statement (1-2 paragraphs) about your interest in the course and previous course work or experience that has prepared you for participation. Statements should be emailed to ljenks@wustl.edu. CET (<https://gephardtstitute.wustl.edu/cec/sam-fox-school-of-design-and-visual-arts>) course. Same as S60 SWCD 5078
Credit 3 units. Arch: GAMUD, GAUI

A49 MUD 5079 Community Development & American Cities

The world is becoming increasingly urban. Recently for the first time more than half of the world's population lived in cities. While urbanization has brought great opportunities it also comes with significant challenges. The goal of this course is to introduce and analyze interventions that improve the quality of life of Americans by improving their neighborhoods, and that strengthen neighborhoods as essential components of competitive regional economies. We will focus both on strategies to alleviate urban poverty and on strategies to make urban neighborhoods attractive to large numbers of potential residents of all races and classes. The course will include a rigorous introduction to community development strategies with specific attention to the role of community organizations, the need for strengthening key service areas such as schools and safety, and the importance of density and place-making. While the focus of the course will be on St. Louis and other older industrial cities, the lessons learned are applicable to all cities throughout the world. In addition to St. Louis, we will also spend concentrated time on New York City as an example of a fast-growth, strong market city. Course pedagogy will emphasize intense interaction between students and between the students and instructor, using lectures, small group discussions and active debates. Class assignments will include the requirement to write five short (3-4 page) papers over the course of the semester. All papers will be based on class reading. For MSW Program SED Concentration students, this course fulfills the SED Theories, Problems, and Issues requirement. For MSW Policy Specialization students, this course fulfills the elective requirement. For Master of Architecture students, this course fulfills the Urban Issues elective requirement. For Master of Urban Design students, this course fulfills the MUD Track elective requirement. MSW Pre/corequisite: S15-5038. CET (<https://gephardtstitute.wustl.edu/cec/sam-fox-school-of-design-and-visual-arts>) course. Same as S20 SWHS 5079
Credit 3 units. Arch: GAMUD, GAUI, UI

**A49 MUD 525K LAND ARCH URB:
LandscapeArchitectureUrbanism**

New Disciplinary Dynamics: Blurs and Exchanges. Over the past decade, the various professions engaged in the construction of the built environment have been investigating (both in theory and practice) a specific and deliberate blurring, hybridization and expansion of the traditional semantic and historical categories of landscape, architecture and urbanism in an attempt to confront changing situations, environments and cultures. Across geographical and cultural boundaries, the proliferation of projects (speculative and built) and essays appearing in recent years

makes this phenomenon more than a passing trend or the product of individual reflection. Architecture, for example, as a conventional discipline with its own tasks, internal logic, and modus operandi has become so heterogeneous that it can no longer adequately authenticate its products from within the limits of its historical category. The same holds true of the allied fields of landscape and urbanism. Strict disciplinary boundaries are no longer capable of attending to the complexity of contemporary demands produced by mobility, density, de-urbanization, hybrid programs, changing uses, and ecological concerns. The contemporary world forcibly imposes the need for greater flexibility and indeterminacy and for new techniques of practice that are anticipatory, receptive to change, and capable of opening an aperture to the future. This course will explore these disciplinary slippages and hybrid contacts between until now distinct categories through essays and built or speculative works. Fulfills History/Theory elective. Fulfills Urban Issues elective.
Same as A46 ARCH 525K
Credit 3 units.

A49 MUD 528S Everyday Urbanism: Global and Local Practices

This course explores how qualities of urbanism are shaped through the aggregation of consistent, repetitive building typologies which subsequently gain difference and character over time through occupation by varied cultures, rituals and behaviors. Among the relevant methodologies to study the relationship between built form and urban quality are those developed by John Stilgoe, who reads the history and culture of a place in terms of repeated features of development, and Tsukamoto Yoshiharu, founder of Atelier Bow-Wow, who notes how changes in the building typologies of Tokyo have had significant impacts of the public realm of the city. Observations derived from this form of research have a direct impact on how we understand the temporal and experiential qualities of the city and, subsequently, design. The maximum enrollment for this course will be 12. MUD students have priority.
Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 529G The Unruly City

The history of the American city is the history of conquering the "unruly": real estate parcels, neighborhoods, buildings, and even people that represent decay, obstacles to capital, unlawfulness or disorder. Designers denigrated unruliness in the pursuit of modernization in the 20th century, but today seem more conflicted on the constitution and remedies for disorder. Is disorder in the eye of the beholder? What disrupts urban life more, the broken windows of vacant houses or the arrival of Whole Foods in a poor neighborhood? Neighborhoods that have lost most of their population and buildings, or new football stadiums offered as economic and architectural solutions to blight? Programs of "right-sizing," urban agriculture, tactical urbanism, infrastructure planning, police reform, upzoning (or unzoning), historic preservation and mass transportation have operative impacts that can either squelch and protect the "unruly." This course examines the divergent definitions of order and disorder that are shaping contemporary approaches to urban planning, governance and cultural production. Readings will include examination of the framing ideological debate between Robert Moses and Jane Jacobs. There will be several field trips to connect course readings to physical conditions around St. Louis.
Same as A48 LAND 529G
Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 562H Informal Cities Workshop: Designing Urbanity: Collective Housing in Emergent Cities

This seminar will research the morphology & the morphogenesis of the Informal City as it evolves to be an integral phenomenon of global urbanism, and the corresponding economic, social, architectural and urban theory. Today, one billion people live in informal cities (36 percent of the world's population), and this is expected to grow another one billion over the next 30 years. As it is currently evolving, the informal city is an urban phenomenon set up within the planned city's territory and increasingly an integral part of it — often comprising up to 75 percent of the city and one of the elements of urban morphology that shapes city design. Thus, it is no longer possible to accept a concept of the informal city that centered on negative parameters (ghettos/slums/poverty/crime, etc.), but there is a need to find sustainable spatial solutions to integrate these settlements into the "formal" urban/architectural tissue leading to the dissolution of urban and symbolic boundaries between the "informal" areas and "formal" districts. To this end, the course will review various architecture and urban strategies and projects of informal urbanism in Asia, Africa and South America supported with a field trip to help further understand and define a place of action for architects and urbanists in the informal city. The completion of both the Informal Cities (fall semester, 1 unit) and the Lively City (spring semester, 2 units) masterclasses may fulfill the Urban Issues elective requirement for the MArch degree.
Credit 1 unit. Arch: GAUI

A49 MUD 563D Reconsidering the Margin: Places of Meeting, Spaces of Transformation

The financial crisis of 2008 and subsequent recession exposed the frailty of conventional modes of practice. The freezing of credit markets set off a contraction of increasingly bureaucratized creative fields such as architecture and fine arts and led to massive layoffs and underemployment. This extreme disruption coincides with an ongoing governmental disengagement from social assistance. The combination of the surplus of talent left by immobilized corporate practice and the vacuum created by a retreating government presents an opportunity to reconsider practice for a new generation in a way that engages a broader set of issues and problems. The seminar builds upon existing relationships and a body of previous engagement in the Pagedale community while laying the ground work for new action. This seminar challenges traditional modes and focuses of creative effort to arrive at a radical new form for creative practice. By challenging common assumptions and using creative production to confront the challenges facing residents and decision-makers, the course seeks to break down physical and disciplinary boundaries to achieve a radical new production. The seminar will include the following: examination of entrenched assumptions by students and community members through reading and discussion; involvement in the community, including volunteer work and civic participation; research into pressing issues that will culminate in a creative project; and dissemination of information to both classmates and the community as a whole. This course is open to disciplines outside of architecture. Students in Art and Social Work are encouraged to register. The course will meet periodically in the community. This course fulfills the Urban Issues or MUD Track elective requirement.

Same as A46 ARCH 563D
Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 564A Urban Development Seminar

Project-based research and discussions focus on the legal policy, social and architectural issues affecting the redevelopment of St. Louis and suburban areas such as Darst Webbe, Clayton, Westminster Place and prototypical redevelopment of public housing projects of Carr Square, Darst Webbe and Vaughn into tenant ownership and market rate housing neighborhoods. Topics include public policy issues affecting development, the availability and types of housing, transportation linkages, business, zoning issues, social and historical precursors. Through interaction with community leaders, teams of students from each discipline prepare a design proposal for an actual problem in the St. Louis area. This seminar is an interdisciplinary effort taught by faculty members of Washington University School of Architecture and the St. Louis University School of Law, Social Work and Department of Public Policy Studies. Prerequisite: 400 level and above. Limit 8 students. Fulfills Urban Issues elective for MArch degree. CET (<https://gephardtinsttute.wustl.edu/cec/sam-fox-school-of-design-and-visual-arts>) course.

Same as A46 ARCH 564A
Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 564K European/Contemporary/Urban Public Spaces

The aim of this seminar is to describe and understand contemporary urban public space in Europe from the late 20th century to the present, as well as to anticipate possible future developments. The seminar will examine this complex subject by investigating the following complementary topics: historical considerations of elements of public space generation; the continually evolving definition of public space; possible boundaries between urban, non-urban, and landscape; scale and other parameters (density, urban fabric); physical and geometrical magnitudes of urban public space; social and political parameters; and other non-apparent/non-physical conditions. Barcelona, Amsterdam and Berlin will be used as examples of cities able to produce celebrated qualified and diverse public spaces. In addition, a series of 12 relevant case studies will be examined. The possibility of mutual interactions with American cities will be considered, using St. Louis as a reference. The educational objectives of the course are to provide some tools and basic knowledge to understand, analyze and propose a contemporary public space. We will learn how to distill the various elements that compose "urbanity," and to recognize the interactions between them. Fulfills Urban Issues elective requirement.

Same as A46 ARCH 564K
Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 565D Advanced Seminar in Urban Sustainability I

This seminar will investigate contemporary theories and methods of sustainable urbanism. Cities are increasingly the means through which a sustainable future for the anthropocene era is constructed. Within the sustainable urbanism paradigm cities are understood as complex self-organizing open systems responding to socially constructed processes, conflicting values, natural resource limitations, extreme natural phenomena, man-made hazards, climate change and competing economic interests that inform urban change, design and development. Consideration will be given to the history, definition and reasoning for the urban sustainability paradigm; the theoretical constructs of sustainability, resiliency, adaptation and regeneration for post-carbon cities; the methods of analysis and measurement for urban sustainability; and the design of cities for livability, social

inclusion, environmental performance, cultural diversity and economic equity. The course fulfills an Urban Design and Urban Issues elective for MUD, MArch & MLA degrees.

Same as A49 MUD 765D

Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 566A Informal Cities: The Future of Global Urbanism

This seminar will research the morphology & the morphogenesis of the Informal City as it evolves to be an integral phenomenon of global urbanism, and the corresponding economic, social, architectural and urban theory. Today, one billion people live in informal cities (36 percent of the world's population) and this is expected to grow another one billion over the next 30 years. As it is currently evolving, the informal city is an urban phenomenon set up within the planned city's territory and increasingly an integral part of it — often comprising up to 75 percent of the city and one of the elements of urban morphology that shapes city design. Thus, it is no longer possible to accept a concept of the informal city that centered on negative parameters (ghettos/slums/poverty/crime, etc.), but there is a need to find sustainable spatial solutions to integrate these settlements into the "formal" urban/architectural tissue leading to the dissolution of urban and symbolic boundaries between the "informal" areas and "formal" districts. To this end, the course will review various architecture and urban strategies and projects of informal urbanism in Asia, Africa and South America supported with an optional field trip to South America favelas/barrios in order to define a place of action for architects and urbanists in the informal city. The course fulfills the Urban Issue elective requirement for the MArch degree. Undergraduate enrollment is allowed by arrangement with the instructor.

Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 566D Advanced Seminar in Urban Sustainability II

Same as A49 MUD 766D

Credit 3 units.

A49 MUD 568 Theories & Methods of Architecture, Landscape and Urbanism Research

This seminar focuses on the fundamentals of transdisciplinary empirical research in architecture, landscape and urbanism design, and urbanism. Through studying research examples, it examines the entire research process from conducting literature review and precedent studies, generating research question and hypothesis, creating study design, collecting and analyzing data with valid and reliable research tools, to communicating findings. A survey of quantitative and qualitative research methods used in disciplines such as social sciences, public policy, and public health that are relevant to environmental issues is provided to address the application of research methods on a wide range of problems in architecture, landscape and urbanism. The seminar enables students to effectively engage in empirical research (including research assistantships) as well as the practice of evidence-based design. This course is required for the Doctor of Sustainable Urbanism students and is open to all MArch, MLA and MUD students. Fulfills an Urban Issues and MUD elective requirement. Permission from the instructor required for undergraduates.

Same as A49 MUD 768

Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 569 Theories & Methods of Sustainable Urbanism

This seminar focuses on the fundamentals of transdisciplinary research in sustainability as it applies to the design, development and management of cities. The objective is to introduce students to fundamental research methods of urban sustainability including methods to: analyze the impact of urbanization on natural systems; understand the physical organization of cities; analyze the effect of socio-economic trends on cities; apply analytical systems to understand the performance of urban elements; and how various scales of the city contribute to sustainability. This course is required for the Doctor of Sustainable Urbanism students and is open to all MArch, MLA and MUD students. Fulfills an urban design and urban elective requirement. Permission from the instructor required for undergraduates.

Same as A49 MUD 769

Credit 3 units. Arch: GAMUD, GAUI

A49 MUD 574A Modern and Contemporary Landscape Architecture

This course examines significant theories and discourses in modern landscape architecture that have informed contemporary modes of practice. Organized around specific topics and lenses (such as site, ecology, art, and sustainability), the course aims to provide a number of critical perspectives on the relevance of landscape architecture as a cultural practice. Readings and discussions will supplement lectures to trace back contemporary ideas to the late 19th and early 20th centuries. We will look at how broader transformations in social, environmental, economic and technological realms have affected discourse in landscape. To this end, students will be introduced to definitions that distinguish between landscape as a medium, landscape as an ideology, and landscape as a profession. Through weekly reviews of seminal projects and built works, we will examine significant styles, movements and design principles in landscape architecture. The course incorporates field trips and presentations by visitors, as well as applied research. It is open to both undergraduate and graduate students in the disciplines of landscape architecture, urban design and architecture. Priority is given to MLA students and undergraduate Landscape Architecture minors. Can count as a History/Theory elective.

Same as A48 LAND 574A

Credit 3 units. Arch: GACS, HT

A49 MUD 579 Ecological Economics

This course is designed to give students an appropriate graduate-level understanding of the fundamental assumptions, the conceptual novelties, and the distinctive tools of analysis that comprise the emerging discipline of ecological economics, and to explore the role this new paradigm is playing in the movement toward a sustainable society. Standard economics — the neoclassical model — sees the economy as the whole that contains all other values; nature has value because some people will pay to experience it or to enjoy its services. Ecological economics reverses that relationship by acknowledging the environment, not the economy, as the containing whole. This it does through its grounding in the laws of energy — the laws that model the behavior of both natural and built systems. (While matter can be recycled, energy can't. No machine can take its own exhaust outputs as fresh inputs; no animal can survive by eating its own excrement.) Fulfills Urban Issues elective requirement. Fulfills MUD Track elective requirement.

Same as A46 ARCH 579

Credit 3 units.

A49 MUD 579A Ecological Economics for Sustainable Cities and Landscapes

This course is designed to provide students with an understanding of the fundamental assumptions, the conceptual novelties, and the distinctive tools of analysis that comprise the emerging discipline of ecological economics as it applies to cities and landscapes, and to explore the role this new paradigm is playing in the movement to convert our society from a high-throughput, unsustainable society to a lower-throughput, sustainable system. Standard economics (including the subfield of environmental economics) sees the economy as the whole that contains all other values. In this view nature has value because some people will pay to experience it or to enjoy its services. Ecological Economics reverses that relationship by acknowledging that the environment, not the economy, is the containing whole. This approach comprises a revolutionary challenge to the foundational premises of contemporary economics. Economics has never undergone the thermodynamic revolution that swept through the physical, life, and social sciences in the late 19th and early 20th century. The course will look briefly at this intellectual history in order to place our studies into their broader social, historical, political, and disciplinary context — and to give students the conceptual background and tools they need to engage the old paradigm in ways that will promote its adaptation to physical reality.

Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 652H Metropolitan Development: What's in a Plan?

This course explores pluralist, pragmatic and progressive planning strategies for American urbanism. It will provide students with an introduction to the design and planning of American cities in the context of this country's democratic tradition, its multicultural society, and the particular morphology of its urban areas. Contemporary American cities have urbanized in unprecedented and distinctive ways that suggest the creation of a unique urban culture, despite the seeming globalization of urban trends, or the apparent universalization of urban forms. Identifying the role design can play in this culture requires a lucid appraisal of the context in which metropolitan development takes place. Four study modules will introduce basic issues in planning law, real estate finance, urban economics and environmental planning through lectures and research projects, as well the presentation of Metropolitan St. Louis development case studies by professional and political leaders.

Credit 3 units. Arch: GAUI, UI

A49 MUD 656 Metropolitan Urbanism

The seminar course will investigate the morphology and morphogenesis of the contemporary America metropolitan urban landscape. The investigation will attempt to define and understand the changing pattern, form and use of the metropolitan transect from the central city to the rural fringe. The objective of the course is to understand the indeterminate complexity and richness of morphological layering and traces in the urban landscape as a basis for critical practice. Required for MUD students. Fulfills Urban Issues elective requirement.

Credit 3 units. Arch: GAUI, UI

A49 MUD 658 Metropolitan Sustainability

This seminar will investigate contemporary theory and practice of the design and development of sustainable regions, cities, communities, infrastructures and landscapes. By 2050 three-quarters of the world's population will be living in cities, and with

cities being the world's largest consumer of resources and a focus of climate change impact, it will be the design of cities that frame the essential theory and practice of sustainability. Consideration will be given to the definition and reasons for the sustainability paradigm; conceptual frameworks for urban sustainability; indicators & measures of sustainability; different sustainability functional categories (water, air, food, energy, transportation, social capital, equity, development patterns & density, etc.); and various approaches to urban sustainability including Regenerative Urbanism, Healthy Cities, Ecological Urbanism, Eco-Urbanity, Resilient Cities, Smart Cities, LEED ND, the Natural Step, ICLEI and ZED Cities. The maximum enrollment for this course will be 12. MUD students and urban design minors have priority.

Credit 3 units.

A49 MUD 664 Historic Preservation/Urban Design

This class will explore the history and current practice of historic preservation in the United States and will relate them to local issues of contextual architecture, sustainable development, cultural tourism and urban design. Emphasis will be placed on the practical knowledge needed to participate professionally in historic preservation: how to evaluate the associative and architectural significance of a property or district, how to provide legal protection and redevelopment incentives for historic resources, how to appropriately restore, rehabilitate, adapt and add to historic buildings, and how to incorporate historic preservation into the sometimes contentious framework of community planning. The course will focus on readings, student discussion and case studies that draw extensively on real preservation situations in the region including trips to the innovative Cupples Warehouse and Bohemian Hill projects, the endangered Old North St. Louis neighborhood and a charrette in the Central West End.

Same as A46 ARCH 664

Credit 3 units. Arch: GACS, GAMUD, GAUI, UI

A49 MUD 701 Theories & Methods of Historical Research

What is architectural history? This is an advanced reading, writing and discussion seminar intended to better prepare students for research in the history and theory of architecture and urbanism. It is based on the premise that since contemporary design practices are not only data-driven, neutral and ahistorical, the ways that designers' conceptualize their work can benefit from a historically-informed understanding of how various approaches to architectural history have emerged over time. It seeks to consider how architecture and architectural history have been understood in the past, and how the development of the discipline informs contemporary research in architectural history by examining how recent and contemporary historians of the built environment do their work. This course fulfills the History/Theory elective requirement.

Same as A46 ARCH 601

Credit 3 units. Arch: GARW

A49 MUD 711 Elements of Urban Design

The first in a three-semester sequence of design studios for students in the Master of Urban Design program.

Credit 6 units.

A49 MUD 713 Metropolitan Design Elements

The second in a three-semester sequence of design studios for students in the Master of Urban Design program.

Credit 6 units.

A49 MUD 765D Advanced Seminar in Urban Sustainability I

This seminar will investigate contemporary theories and methods of sustainable urbanism. Cities are increasingly the means through which a sustainable future for the anthropocene era is constructed. Within the sustainable urbanism paradigm cities are understood as complex self-organizing open systems responding to socially constructed processes, conflicting values, natural resource limitations, extreme natural phenomena, man-made hazards, climate change and competing economic interests that inform urban change, design and development. Consideration will be given to the history, definition and reasoning for the urban sustainability paradigm; the theoretical constructs of sustainability, resiliency, adaptation and regeneration for post-carbon cities; the methods of analysis and measurement for urban sustainability; and the design of cities for livability, social inclusion, environmental performance, cultural diversity and economic equity. The course fulfills an Urban Design and Urban Issues elective for MUD, MArch & MLA degrees.

Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 766D Advanced Seminar in Urban Sustainability II

Credit 3 units.

A49 MUD 768 Theories & Methods of Architecture, Landscape and Urbanism Research

This seminar focuses on the fundamentals of transdisciplinary empirical research in architecture, landscape and urbanism design, and urbanism. Through studying research examples, it examines the entire research process from conducting literature review and precedent studies, generating research question and hypothesis, creating study design, collecting and analyzing data with valid and reliable research tools, to communicating findings. A survey of quantitative and qualitative research methods used in disciplines such as social sciences, public policy, and public health that are relevant to environmental issues is provided to address the application of research methods on a wide range of problems in architecture, landscape and urbanism. The seminar enables students to effectively engage in empirical research (including research assistantships) as well as the practice of evidence-based design. This course is required for the Doctor of Sustainable Urbanism students and is open to all MArch, MLA and MUD students. Fulfills an Urban Issues and MUD elective requirement. Permission from the instructor required for undergraduates.

Credit 3 units. Arch: GAMUD, GAUI, UI

A49 MUD 769 Theories & Methods of Sustainable Urbanism

This seminar focuses on the fundamentals of transdisciplinary research in sustainability as it applies to the design, development and management of cities. The objective is to introduce students to fundamental research methods of urban sustainability including methods to: analyze the impact of urbanization on natural systems; understand the physical organization of cities; analyze the effect of socio-economic trends on cities; apply analytical systems to understand the performance of urban elements; and how various scales of the city contribute to sustainability. This course is required for the Doctor of Sustainable Urbanism students and is open to all MArch, MLA and MUD students. Fulfills an urban design and urban elective requirement. Permission from the instructor required for undergraduates.

Credit 3 units. Arch: GAMUD, GAUI

A49 MUD 781 Directed Readings in Sustainable Urbanism I

This is a special topics course intended for graduate students to read, research and critique key contemporary texts that examine the relationship between sustainability, cities and the design disciplines. The course content is personalized to the individual student's background and interest, and is intended to broaden the student's disciplinary knowledge base in sustainable urbanism. This is a required course for students in the Doctor of Sustainable Urbanism program. Students in the Master of Urban Design, Master of Science in Architectural Studies, and Master of Science in Architectural Design degree programs may enroll with the permission of the instructor.

Credit 3 units.

A49 MUD 782 Directed Readings in Sustainable Urbanism II

This is a special topics course intended for graduate students to read, research and critique key contemporary texts that examine the relationship between sustainability, cities and the design disciplines. The course content is personalized to the individual student's background and interest, and is intended to broaden the student's disciplinary knowledge base in sustainable urbanism.

Credit 3 units.

A49 MUD 791 Directed Research in Sustainable Urbanism I

This is a special topics course intended for doctorate students to work individually with a designated faculty member and to earn credit for individually designed course content in the discipline of sustainable urbanism. The course content is personalized to the individual student's background and research interest, and is intended to broaden the student's disciplinary knowledge base in sustainable urbanism and the development of a publishable academic paper that results in a significant scholarly contribution in the discipline. The student will prepare and submit a course proposal, schedule and work product prospectus for approval by the chair of Urban Design. Registration permitted for students in the Doctor of Sustainable Urbanism (required).

Credit 3 units.

Sam Fox School of Design & Visual Arts

The Sam Fox School of Design & Visual Arts (<http://samfoxschool.wustl.edu>) is a unique collaboration in architecture, art and design education, linking professional studio programs with one of the country's finest university art museums in the context of an internationally recognized research university.

The Sam Fox School is composed of the College of Architecture, the Graduate School of Architecture & Urban Design, the College of Art, the Graduate School of Art, and the Mildred Lane Kemper Art Museum (<http://www.kemperartmuseum.wustl.edu>).

Website: <http://samfoxschool.wustl.edu>

Master's Degrees

The Graduate School of Architecture & Urban Design's degree programs include a range of curricula for students with a variety

of educational backgrounds, professional degree needs, and career ambitions.

Most states require that an individual intending to become an architect hold an accredited professional degree. The National Architectural Accrediting Board (NAAB) accredits two types of degrees: (1) the Bachelor of Architecture (not offered by this College 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 of study following a related pre-professional bachelor's degree. These professional degrees are structured to educate those who aspire to registration/licensure as architects.

The graduate school's Master of Architecture degree (MArch 3 and MArch 2 programs) is an NAAB-accredited professional degree. The school's NAAB-accreditation status was evaluated and confirmed in the spring of 2005.

Master's Degrees

Students holding bachelor's degrees in fields other than architecture are invited to apply to the graduate school's accredited professional MArch 3 degree program. Elementary calculus and physics are required as prerequisites for enrollment. While the curriculum typically spans seven semesters, students may complete this professional studies program in a minimum of three years including two summers.

Students with the Bachelor of Arts degree with a major in architecture, including studios at both the 300 and 400 levels, or the equivalent, are placed within the MArch 3 curriculum on the basis of their previous design studio experience and overall academic record.

The Graduate School of Architecture & Urban Design welcomes graduates of other schools with the undergraduate degrees in architecture (Bachelor of Science in Architecture) or the equivalent as candidates for the accredited professional Master of Architecture degree program (MArch 2). This curriculum typically spans four semesters.

We offer the following programs:

Master of Architecture: MArch 3 (p. 34) (seven semesters)

Master of Architecture: MArch 2+ (p. 35) (five semesters)

Master of Architecture: MArch 2 (p. 36) (four semesters)

Master of Landscape Architecture (p. 37)

Master of Urban Design (p. 39)

MS in Advanced Architectural Design (p. 40) (three semesters)

MS in Architectural Studies (p. 40) (30 credits)

Fundamental to the graduate curriculum is the architectural design studio sequence. Each semester, students select from

a range of vertical studio options organized around projects and topics offered by different design instructors. These studios emphasize the development of strong conceptual abilities, thoughtful integration of technical information, and convincing representations of architectural ideas in two- and three-dimensional form, and through a variety of media. The ultimate goal is for each student to develop clear design principles, strong technical resources, and an independent, critical position on the making of architecture in the world. The independent character of a student's abilities is demonstrated and tested in the final semester through the Degree Project.

Informing and enriching the studio experience for students in the MArch program are courses in architectural history and theory, building technology and structural principles, urban design, professional practice, landscape design, and representational and digital media studies. Great emphasis is placed on a student's ability to integrate and synthesize the information in these courses into appropriate architectural form in the design studio. While these topics have consistently been a part of the graduate curriculum, their specific content, sequence, and method of instruction is under constant review and development.

Dual Degrees

For graduate students who want to broaden their education at the graduate and post-professional levels, the Graduate School of Architecture & Urban Design offers several dual degree programs in conjunction with other divisions of Washington University in St. Louis. To apply for a dual degree program, students must submit separate applications to both programs. Each program makes admission decisions independently. The dual degree programs currently available:

Master of Business Administration/Master of Architecture (p. 40) (MBA/MArch)

Master of Construction Management/Master of Architecture (p. 40) (MCM/MArch)

Master of Landscape Architecture/Master of Architecture (p. 41) (MLA/MArch)

Master of Landscape Architecture/Master of Urban Design (p. 41) (MLA/MUD)

Master of Social Work/Master of Architecture (p. 41) (MSW/MArch)

Master of Urban Design/Master of Architecture (p. 42) (MUD/MArch)

Master of Architecture: MArch 3

This full seven-semester professional curriculum is for students holding baccalaureate degrees with majors in architecture and with majors other than architecture. The program begins with a series of core studios and courses before students progress into

the advanced studio sequence. This 105-credit program leads to a professionally accredited Master of Architecture degree.

Waiver Requirements

Students admitted to the MArch 3 program have the opportunity to waive the following courses:

- Building Systems (ARCH 445)
- Structures I (ARCH 447A)
- Structures II (ARCH 448A)
- Architectural History I: Antiquity to Baroque (ARCH 4280)
- Architectural History II: Architecture Since 1880 (ARCH 4284)
- Environmental Systems I (ARCH 438)
- Environmental Systems II (ARCH 439)

The waived courses will be replaced with general elective credits.

Website: <http://www.samfoxschool.wustl.edu/node/5722>

Faculty

For a list of faculty members, please refer to the Architecture faculty page (p. 12).

Degree Requirements

Master of Architecture: MArch 3

Note: The requirements below may be revised during the 2017-18 academic year. Please visit our website (<http://www.samfoxschool.wustl.edu/node/5722>) for the most up-to-date requirements.

Requirements: 105 units

Code	Title	Units
Year 1, Fall Semester:		
ARCH 317	Architectural Design I (MArch 3)	6
ARCH 323A	Architectural Representation I (MArch 3)	3
ARCH 339	Concepts and Principles of Architecture I	3
ARCH 4284	Architectural History II: Architecture Since 1880 ²	3
Year 1, Spring Semester:		
ARCH 318	Architectural Design II (MArch 3)	6
ARCH 323B	Architectural Representation II (MArch 3)	3
ARCH 4280	Architectural History I: Antiquity to Baroque ²	3
ARCH 438	Environmental Systems I ²	3
Year 2, Fall Semester:		
ARCH 419	Architectural Design III (MArch 3)	6
ARCH 445	Building Systems ²	3

ARCH 447A	Structures I ²	3
History + Theory & Writing Elective		3
Year 2, Spring Semester:		
ARCH 511	Architectural Design V ¹	6
ARCH 439	Environmental Systems II ²	3
ARCH 448A	Structures II ²	3
General Elective		3
Year 3, Fall Semester:		
ARCH 512	Architectural Design VI ¹	6
ARCH 538C	Advanced Building Systems	3
History + Theory Elective		3
General Elective		3
Year 3, Spring Semester:		
ARCH 611	Architectural Design VII	6
ARCH 580	Design Thinking: Research and Design Methods	3
Urban Issues Elective		3
General Elective		3
Year 4, Fall Semester:		
ARCH 616	Degree Project	6
ARCH 646	Professional Practice I	3
General Elective		3
General Elective		3
Total Units		105

¹ One studio must be comprehensive.

² May be waived. *Any courses waived must be fulfilled as elective credits.*

Courses

For a list of available courses, please refer to the Courses (p. 13) section of the Graduate School of Architecture & Urban Design in this *Bulletin*.

Master of Architecture: MArch 2+

The MArch 2+ curriculum is a five-semester, advanced placement course of study, beginning always in a fall semester. Students are considered for placement in the MArch 2+ curriculum on the basis of design portfolio evaluation and the extent of their undergraduate architectural studies. **Placement in this curriculum is highly selective.** The MArch 2+ sequence begins with the final, comprehensive core studio (ARCH 419) and concludes with the Degree Project; parallel course work in each of the five semesters matches that of the MArch 2 curriculum, plus electives selected in consultation with the student's graduate adviser. This 75-credit program leads to a professionally accredited Master of Architecture degree.

Waiver Requirements

Students admitted to the MArch 2+ program have the opportunity to waive the following courses:

- Building Systems (ARCH 445)
- Structures I (ARCH 447A)
- Structures II (ARCH 448A)
- Architectural History I: Antiquity to Baroque (ARCH 4280)
- Architectural History II: Architecture Since 1880 (ARCH 4284)
- Environmental Systems I (ARCH 438)
- Environmental Systems II (ARCH 439)

The waived courses will be replaced with general elective credits.

Website: <http://www.samfoxschool.wustl.edu/node/5723>

Faculty

For a list of faculty members, please refer to the Architecture faculty page (p. 12).

Degree Requirements

Master of Architecture: MArch 2+

Note: The requirements below may be revised during the 2017-18 academic year. Please visit our website (<http://www.samfoxschool.wustl.edu/node/5723>) for the most up-to-date requirements.

Requirements: 75 units

Code	Title	Units
Year 1, Fall Semester:		
ARCH 419	Architectural Design III (MArch 3)	6
ARCH 4284	Architectural History II: Architecture Since 1880 ²	3
ARCH 447A	Structures I ²	3
ARCH 445	Building Systems ²	3
Year 1, Spring Semester:		
ARCH 511	Architectural Design V ¹	6
ARCH 4280	Architectural History I: Antiquity to Baroque ²	3
ARCH 448A	Structures II ²	3
ARCH 439	Environmental Systems II ²	3
Year 2, Fall Semester:		
ARCH 512	Architectural Design VI ¹	6
ARCH 538C	Advanced Building Systems	3
History + Theory Research & Writing Elective		3
Urban Issues Elective		3
Year 2, Spring Semester:		
ARCH 611	Architectural Design VII ¹	6

ARCH 580	Design Thinking: Research and Design Methods	3
History + Theory Elective		3
General Elective		3
Year 3, Fall Semester:		
ARCH 616	Degree Project	6
ARCH 646	Professional Practice I	3
General Elective		3
General Elective		3
Total Units		75

¹ One studio must be comprehensive.

² May be waived. *Any courses waived must be fulfilled as elective credits.*

Courses

For a list of available courses, please refer to the Courses (p. 13) section of the Graduate School of Architecture & Urban Design in this *Bulletin*.

Master of Architecture: MArch 2

This four-semester program is for strong architectural design students beginning their studies in either a fall or spring semester who hold baccalaureate degrees in architecture (a BS in Architecture, typically, or a professional degree from outside the United States). Students are considered for placement in the MArch 2 curriculum on the basis of design portfolio evaluation and the extent of their undergraduate architectural studies.

Placement in this curriculum is highly selective. The MArch 2 program includes advanced design studios leading to more advanced elective work and the Degree Project. This 60-credit program leads to a professionally accredited Master of Architecture degree.

Waiver Requirements

In order to be admitted to the MArch 2 program, students must be able to waive at least two of the three credits of Environmental Systems I (ARCH 438) and **two** of the courses listed below:

- Building Systems (ARCH 445)
- Structures I (ARCH 447A)
- Structures II (ARCH 448A)
- Architectural History I: Antiquity to Baroque (ARCH 4280)
- Architectural History II: Architecture Since 1880 (ARCH 4284)
- Environmental Systems II (ARCH 439)

The waived courses will be replaced with general elective credits.

Website: <http://www.samfoxschool.wustl.edu/node/5724>

Faculty

For a list of faculty members, please refer to the Architecture faculty page (p. 12).

Degree Requirements

Master of Architecture: MArch 2

Note: The requirements below may be revised during the 2017-18 academic year. Please visit our website (<http://www.samfoxschool.wustl.edu/node/5724>) for the most up-to-date requirements.

Requirements: 60 units

Code	Title	Units
Year 1, Fall Semester:		
ARCH 511	Architectural Design V ¹	6
ARCH 4284	Architectural History II: Architecture Since 1880 ²	3
ARCH 447A	Structures I ²	3
ARCH 445	Building Systems ²	3
Year 1, Spring Semester:		
ARCH 512	Architectural Design VI ¹	6
ARCH 4280	Architectural History I: Antiquity to Baroque ²	3
ARCH 448A	Structures II ²	3
ARCH 439	Environmental Systems II ²	3
Year 2, Fall Semester:		
ARCH 611	Architectural Design VII ¹	6
ARCH 538C	Advanced Building Systems	3
ARCH 580	Design Thinking: Research and Design Methods	3
History + Theory Research & Writing Elective		3
Year 2, Spring Semester:		
ARCH 616	Degree Project	6
ARCH 646	Professional Practice I	3
History + Theory Elective		3
Urban Issues Elective		3
Total Units		60

¹ One studio must be comprehensive.

² May be waived. *Any courses waived must be fulfilled as elective credits.*

Courses

For a list of available courses, please refer to the Courses (p. 13) section of the Graduate School of Architecture & Urban Design in this *Bulletin*.

Master of Landscape Architecture

In the fall of 2010, the Graduate School of Architecture & Urban Design launched a graduate program in landscape architecture leading to a professional Master of Landscape Architecture (MLA) degree. Two- and three-year degree options accommodate students with design and other undergraduate degrees. The landscape program further develops cross-disciplinary connections among architecture, urban design, and visual arts in the Sam Fox School.

The program in landscape architecture focuses on the three subjects of design, ecology and urbanism. The transformative process of design — linking cultural, historical and technological investigations — forms the pedagogical basis for research. Ecology informs design practice to address a multiplicity of scales and natural systems within the environment. Urbanism serves as a terrain of contemporary landscape practice. As heirs to design, ecological and urban traditions, landscape architects are uniquely suited to articulate a spatial vision for today's environment. This three-pronged approach is geared to develop the students' critical and conceptual abilities, and prepare them to become leaders within professional and academic spheres.

The curriculum is centered on studio teaching supported by instruction in technology, history and theory. Following the core sequence of design studios and classes, students are encouraged to develop their own research interests through advanced design studios and electives. Interdisciplinary and international option studios foster a multiplicity of perspectives leading to a research-based degree project (thesis or independent study). In addition, students have opportunities to further their investigations within and beyond the school through teaching and research assistantships and scholarships.

The landscape architecture program draws on a unique set of institutional, regional and international resources available at the Sam Fox School. St. Louis functions as a laboratory for understanding and testing ecological and urban theories at the local scale, from brownfield reclamation to urban agriculture systems. Washington University's outstanding programs in Environmental Studies, Environmental Engineering, and American Culture Studies expand curricular offerings in ecology, technology and landscape studies, and the internationally renowned Missouri Botanical Garden serves as an exceptional tool of research and teaching. Finally, through the extensive international offerings of the school in Barcelona, Buenos Aires, Helsinki, Seoul and Tijuana, students experience different landscapes, cultures and cultures of practice.

Website: <http://samfoxschool.wustl.edu/programs/mla>

Faculty

Chair

Rod Barnett (http://samfoxschool.wustl.edu/portfolios/rod_barnett)
 PhD, University of Auckland

For a list of faculty members, please refer to the Architecture faculty page (p. 12).

Degree Requirements

Master of Landscape Architecture Degree - MLA 3

The following is the curriculum sequence for the three-year MLA program:

Pre-Semester Course: Landscape Architecture/Architecture Orientation + Workshop

Semester	Units
First Semester	
Landscape Architecture Studio I	6
Landscape Representation	3
Plants and Environment	1.5
Grading and Landform	1.5
Modern & Contemporary History	3
Second Semester	
Landscape Architecture Studio II	6
Digital Tools	3
Planting Design	1.5
GIS for Site Design	1.5
Landscape Ecology	3
Third Semester	
Landscape Architecture Studio III	6
Visualizing Ecological Processes	3
Landscape History and Theory	3
Electives*	3
Fourth Semester	
Landscape Architecture Studio IV	6
Research in Landscape	3
Landscape Technology	3
Electives*	3
Fifth Semester	
Landscape Architecture Studio V	6
Electives*	9
or Thesis Option:	
Landscape Architecture Thesis Studio	6
Thesis Preparation	3
Electives*	6

Sixth Semester

Landscape Architecture Studio VI	6
Professional Practice	3
Electives*	6
or	
Thesis Project	9
Professional Practice	3
Electives*	3
Total Units	90

*The elective sequence changes from year to year, depending on offerings from the MLA, MArch and MUD programs. The program office determines which courses fulfill this requirement.

Please refer to the sections below for the comprehensive studio and thesis studio (p. 39) requirements.

Master of Landscape Architecture Degree - MLA 2

The following is the curriculum sequence for the two-year MLA program; placement is determined by the Admission Committee.

Semester	Units
First Semester	
Landscape Architecture Studio III	6
Visualizing Ecological Processes	3
Plants and Environment	1.5
Grading and Landform	1.5
Modern & Contemporary History	3
Second Semester	
Landscape Architecture Studio IV	6
Landscape Technology	3
Planting Design	1.5
GIS for Site Design	1.5
Landscape Ecology	3
Third Semester	
Landscape Architecture Studio V	6
Landscape History and Theory	3
Electives*	6
or Thesis Option:	
Landscape Architecture Thesis Studio	6
Thesis Preparation	3
Electives*	6
Fourth Semester	
Landscape Architecture Studio VI	6
Professional Practice	3
Electives*	6
or Thesis Option	
Landscape Architecture Thesis Studio	6

Professional Practice	3
Electives*	6
Total Units	60

*The elective sequence changes from year to year, depending on offerings from the MLA, MArch and MUD programs. The program office determines which courses fulfill this requirement.

All Master of Landscape Architecture students (including dual degree students) must take one landscape architecture comprehensive studio.

Master of Landscape Architecture Comprehensive Studio Requirement

Students must achieve a minimum average of B- in the core sequence in order to enter the comprehensive studio sequence. Students who do not fulfill this requirement may be permitted to repeat Landscape Architecture Studio I or II. If a student still fails to meet the B- average after taking an additional 500-level studio, the student's status will be determined by a Faculty Committee.

Master of Landscape Architecture Thesis Studio Requirement

Students who wish to take the Landscape Architecture Thesis Studio must have earned a grade of B or better in two of the preceding three studios, with at least a grade of C in the third.

Courses

For a list of available courses, please refer to the Courses (p. 13) section of the Graduate School of Architecture & Urban Design in this *Bulletin*.

Master of Urban Design

Students with a professional degree or the equivalent in architecture, urban planning, or landscape architecture may apply for admission to the program leading to the Master of Urban Design degree. This degree is awarded upon completion of a three-term graduate curriculum devoted to urban design.

Website: <http://samfoxschool.wustl.edu/programs/mud>

Faculty

Chair

John Hoal (http://samfoxschool.wustl.edu/portfolios/faculty/john_hoal)

PhD, Washington University

For a list of faculty members, please refer to the Architecture faculty page (p. 12).

Degree Requirements

Master of Urban Design Degree

Candidates for a Master of Urban Design (MUD) degree are required to complete a total of 42 units of credit. Course work covers history/theory of urban form, urban sustainability, morphology and metabolism of urban form, real estate development, landscape urbanism, infrastructural urbanism, regulating controls and zoning, and community development, and are spread over the fall and spring semesters. In addition to the course work, three urban design studios (inclusive of a 1-2 week field trip in the spring semester and an immersion international traveling summer studio) are required. Students are also encouraged to participate in two workshops, one in St. Louis and an international workshop over spring break.

Semester	Units
Fall	
Metropolitan Urbanism	3
Metropolitan Development	3
Elements of Urban Design Studio	6
Informal Cities Workshop	1
Urban Design Elective	3
Spring	
Metropolitan Design Elements Studio	6
Lively Cities Masterclass	2
Metropolitan Sustainability	3
Urban Design Elective	3
Urban Design Elective	3
Summer	
Degree Project Design Studio (International Traveling Studio)	6
Urban Design Research Theories & Methods	3
Total Units	42

Master of Urban Design Studio Grade Requirement

A MUD student wishing to take the summer urban design studio (ARCH 714) must have earned a minimum average grade of B- or better in the first two urban design studios (ARCH 711 and ARCH 713). Students who do not fulfill this minimum requirement must repeat 711 and/or 713. If a student has not fulfilled this minimum requirement after repeating 711 and/or 713, the student's status in the program will be determined by a committee of faculty.

Master of Urban Design Combined Degree Programs

The MUD program offers a series of combined degree programs including:

- MUD/Master of Architecture (p. 42)
- MUD/Master of Landscape Architecture (p. 41)

These combined degree programs are of particular value to those who want to pursue an interdisciplinary approach to architecture and urban design. They prepare the student for a wide array of diverse career opportunities.

Courses

For a list of available courses, please refer to the Courses (p. 13) section of the Graduate School of Architecture & Urban Design in this *Bulletin*.

MS in Advanced Architectural Design

This 36-credit, three-semester program allows individuals already holding NAAB-accredited professional degrees in architecture to pursue advanced design studies, research, and teaching preparation. Schedules for students in this program are varied and highly individual but will include an advanced design studio in each semester. This program leads to a post-professional Master of Science in Advanced Architectural Design (MSAAD).

Code	Title	Units
ARCH 511	Architectural Design V	6
ARCH 512	Architectural Design VI	6
ARCH 611	Architectural Design VII	6
General Electives		18
Total Units		36

Website: <http://www.samfoxschool.wustl.edu/node/5369>

MS in Architectural Studies

This post-professional degree program provides the opportunity to engage in research specialization or focus beyond that possible within the professional degree programs. Two concentrations are currently available: Architectural Pedagogy, and the History and Culture of Architecture.

The Master of Science in Architectural Studies (MSAS) program is open to students who already hold a NAAB-accredited professional degree in architecture, as well as to students who are already enrolled in another degree program in the Graduate School of Architecture & Urban Design. Prospective students who do not already have a NAAB-accredited degree **must** enroll in another one of our other graduate programs (typically the MArch program) in order to pursue the MSAS degree.

Admission requires an application that includes a portfolio, transcripts, a statement of purpose with a specific research focus for the proposed program of study, and three letters of recommendation. Admission to this MSAS program requires a

faculty member to accept responsibility as the academic adviser who supervises the proposed course work and thesis.

Requirements	Units
Mandatory Thesis or Project	6
Research Preparation	3
Seminars, Directed Research, Independent Study	21
Total Units	30

Note: A maximum of 15 credits can be "double-counted" for both the MArch, MLA, or MUD program and the Master of Science program. Decisions regarding course credit to be "double-counted" will be made by the academic adviser.

Website: <http://www.samfoxschool.wustl.edu/node/5370>

Dual Degree: MBA/MArch

Offered in conjunction with Washington University's Olin Business School, this dual degree program prepares architects and urban designers to be both thoughtful designers and effective managers and developers. The **Master of Architecture (MArch)** degree may be combined with a **Master of Business Administration (MBA)** degree. Career opportunities that stem from this dual degree arrangement are in the architecture, business, and development professions; community development and planning; housing development; and public policy. Students may start their initial year in either school.

Students entering the MArch 2 program who have also been admitted to the MBA program will need three to four years of graduate work to complete the MArch/MBA dual degree program. The requirements and duration of study for students admitted to other MArch programs are determined on a case-by-case basis.

For more information contact:

Director of Admissions
 Olin Business School
 Washington University in St. Louis
 CB 1133
 One Brookings Drive
 St. Louis, MO 63130
 Phone: 314-935-7301 or 1-888-622-5115 (in the continental U.S.)
 Email: mba@olin.wustl.edu
 Website: <http://olin.wustl.edu>

Website: <http://samfoxschool.wustl.edu/node/4117>

Dual Degree: MCM/MArch

The **Master of Construction Management/Master of Architecture (MCM/MArch)** dual degree program prepares architectural students for the diverse roles within today's

multidisciplinary design/construction process. The MCM degree focuses on enhancing the student's technical, management, and leadership capabilities through specialized courses featuring comprehensive, authentic case studies and projects. The course of study is designed to provide a focused, intensive examination of critical issues within construction management.

In addition to the normal regular MCM curriculum, the MCM/MArch dual degree program includes a unique course: the MCM/MArch Capstone Project. In this course, students apply constructability principles — cost, time, value, methods and systems — to their final MCM degree project.

The MCM program requires 30 units of study, in addition to any prerequisite work that may be required. Some of the 30-unit requirement or prerequisite course work may be met through courses taken in the MArch program.

Enrollment in the MCM program as a dual degree is possible for students who have achieved advanced standing (500-level/MArch2 or above) in the MArch program. To enroll in the dual degree programs, students already enrolled in the MArch program must complete a dual degree declaration form (available from Aaron Akins (<http://samfoxschool.wustl.edu/directory/5968>), assistant registrar), in addition to completing the necessary MCM application procedures and having a meeting with Steve Bannes, director of Graduate Studies in Construction Management.

Regardless of whether a student pursues the dual degree or just decides to take courses in the MCM program, enrollment in Construction Management courses is limited to one course per semester for all students who have not yet completed their architecture degree. Students who do not intend to pursue the dual degree but who take courses in the construction management program may be charged additional tuition for those courses.

Questions concerning the **MArch portion** of this program should be addressed to:

Chandler Ahrens
Student Adviser, MCM/MArch program
Email: cahrens@samfox.wustl.edu

Questions concerning the **MCM portion** of this program should be addressed to:

Steve W. Bannes
Program Director, Graduate Studies in Construction Management
Email: sbannes@wustl.edu
Phone: 314-935-5484
Website: <http://sever.wustl.edu>

Website: <http://samfoxschool.wustl.edu/node/4118>

Dual Degree: MLA/MArch

This dual degree program fulfills the requirements of two professional degrees: the **Master of Architecture** (MArch) and the **Master of Landscape Architecture** (MLA). Students engaged in the dual curriculum will significantly expand their general design culture by interweaving courses in landscape and architecture; understand design as a systemic enterprise; and acquire the skills to operate across disciplines and scales. Students must be admitted to both programs in order to pursue a dual MLA/MArch degree.

The length of study is dependent upon the MArch and MLA programs in which the student is enrolled. Typically, students with no prior design degree will need 4.5 years to complete the dual MLA/MArch degree. Students in the MLA AP program will need 3.5 years to complete the dual MLA/MArch degree.

Website: <http://samfoxschool.wustl.edu/node/6113>

Dual Degree: MLA/MUD

This dual degree program fulfills the requirements of the **Master of Landscape Architecture** (MLA) and the **Master of Urban Design** (MUD). Students must be admitted to both the three-year MLA program and the MUD program in order to pursue this dual degree.

The length of study is dependent upon the MUD and MLA programs in which the student is enrolled. Typically, students with no prior design degree will need 3.5 years to complete the dual MLA/MUD degree. Students in the MLA AP program will need 3 years to complete the dual MLA/MUD degree.

Website: <http://samfoxschool.wustl.edu/node/9009>

Dual Degree: MSW/MArch

This unique dual degree program, which has a long tradition at Washington University, links the concerns of physical design with social welfare and practice. The Sam Fox School's Graduate School of Architecture & Urban Design and the Brown School offer dual degrees for students who already have an undergraduate degree in architecture (although those with other degrees/majors who are willing to pursue a longer program of study may do so), as well as social work students who want to increase their awareness of the role of physical environs in the welfare of their clientele.

The intent of the program is to educate and prepare architects and urban designers to understand the built and urban environment through the lens of social work values, and to be responsive to the emotional, social, and physical needs of individuals, families and communities. The dual degree opens career opportunities in community development and planning, housing rehabilitation, and residential design for populations at

risk, such as people who are developmentally disabled, elderly, or economically disadvantaged.

Students entering the **Master of Architecture** (MArch 2) program who also have been admitted to the **Master of Social Work** (MSW) program will need 3.5 to 4 academic years of study split between the Graduate School of Architecture & Urban Design and the Brown School. Students may start their initial year in either school.

For more information contact:

Office of Admissions & Recruitment
The Brown School (<https://msw.wustl.edu>)
Washington University in St. Louis
CB 1196
One Brookings Drive
St. Louis, MO 63130
Phone: 314-935-6676
Email: brownadmissions@wustl.edu

Website: <http://samfoxschool.wustl.edu/node/4119>

Dual Degree: MUD/MArch

This dual degree program prepares architects to be cognizant of the larger urban context of architectural practice and to extend their expertise into another discipline. Students entering the MUD/MArch program complete a substantial portion of the design studios for the **Master of Architecture** (MArch) prior to completing the **Master of Urban Design** (MUD) studios, which are then followed by the MArch Degree Project. Other course requirements in urban design theory typically are spread out over the entire study period. The length of study is dependent upon the MArch program (3, 2+, 2) in which the student is enrolled, but typically adds an additional semester and summer to the student's curriculum.

Website: <http://samfoxschool.wustl.edu/node/4115>

Doctor of Sustainable Urbanism

The Doctor of Sustainable Urbanism (DrSU) is a post-professional applied research degree intended to prepare professionals and advanced urban design students for careers in multidisciplinary, evidence-based sustainable urban design and planning practice and teaching. The program is based on a close working relationship between doctoral students and their faculty advisers, who work together to develop a detailed course of study that takes full advantage of the resources available at Washington University and through our collaborative partners from around the country and world.

This individualized program allows each doctoral student to pursue their particular research interest while ensuring the development of the necessary research competencies and

broadening of the student's knowledge in sustainable urbanism. Much of the program's course work and independent reading and study is focused on preparing students for their two-part general examination. The nature of this preparation varies widely depending upon the candidate's background and research interests. Overall, the exam is a platform for the student to demonstrate a broad knowledge of evidenced-based research methods and the multidisciplinary frameworks of sustainable urbanism, as well as the best practices for sustainable urbanism and the technical knowledge base and skills necessary for implementing sustainability at a multi-scalar level in the city.

Students learn a holistic and integrative methodological approach to sustainability thinking involving complex social, cultural, political, economic, and scientific issues as they are applied to a wide range of urban contexts and spatial patterns and conditions. Students use statistical and visual analytical tools, including quantitative and qualitative research methods, geographical information systems (GIS), and techniques to analyze data sets and construct holistic research models. They also learn to construct the research reports and performance measurement systems necessary to clearly demonstrate evidence of a more sustainable city. Leadership skills are developed to ensure students can engage an informed, involved citizenry in creative problem solving to achieve responsible individual and cooperative actions toward a society that is more sustainable and resilient. Finally, students are encouraged to develop their own refined ethical framework and set of values that shape sustainable cities, which at a minimum would include economic, social, and place equity; environmental and cultural justice; intergenerational equity; and management and stewardship of the urban environment.

Teaching is another important component of each doctoral student's course of study. Students often are given substantial teaching responsibilities, particularly in the introductory courses offered by the urban design faculty. Recently students have served as teaching assistants and/or instructors in theory courses such as Metropolitan Development, Metropolitan Sustainability, Metropolitan Urbanism, Public Space and City Life, and Informal Cities, as well as a number of urban design studios, including the Global Urbanism Studio that has engaged cities such as Shanghai, Tokyo, Singapore, Mexico City, Johannesburg and Dubai. Students also have the opportunity to work as research associates with faculty to enrich their academic experience and develop research project experience.

The DrSU degree prepares graduates for research-oriented positions in nonprofit organizations, community design and research centers, and government agencies, as well as faculty positions at colleges and universities focused on applied research in sustainability and urban design.

Website: <http://samfoxschool.wustl.edu/programs/drSU>

Faculty

The core faculty for the Doctor of Sustainable Urbanism program draws from an accomplished set of educators throughout Washington University.

Program Chair

John Hoal

Professor and Chair of Urban Design
PhD, Washington University

Program Standing Committee

John Hoal (http://samfoxschool.wustl.edu/portfolios/faculty/john_hoal)

Professor and Chair of Urban Design
PhD, Washington University

Eric Mumford (http://samfoxschool.wustl.edu/portfolios/faculty/eric_mumford)

Rebecca and John Voyles Professor of Architecture
PhD, Princeton University

Linda C. Samuels (http://www.samfoxschool.wustl.edu/portfolios/linda_samuels)

Associate Professor
PhD, University of California, Los Angeles

Hongxi Yin (<http://samfoxschool.wustl.edu/directory/10636>)

I-CARES Associate Professor
PhD, Carnegie Mellon University

Ex Officio

Bruce Lindsey (http://samfoxschool.wustl.edu/portfolios/faculty/bruce_lindsey)

Dean, College of Architecture and Graduate School of Architecture & Urban Design
E. Desmond Lee Professor for Community Collaboration
MFA, University of Utah
MArch, Harvard University

Faculty for required and elective courses are drawn from all departments within the university, representing the interdisciplinary nature of the program.

Degree Requirements

Doctor of Sustainable Urbanism

To earn the Doctor of Sustainable Urbanism from the Sam Fox School of Design & Visual Arts, a student must complete 72 units of graduate work over at least three years. Students will typically complete the program in four years, but they may complete the program in as few as three years or as many as five years.

Of the total 72 units, 48 units represent course work to be completed in residence at Washington University, including required and approved elective seminars and courses. Thereafter, 24 units of dissertation research and writing may be

completed at Washington University or off-site if approved by the program chair. In order to graduate, students must:

1. Maintain satisfactory academic progress and standing
2. Pass the General Examination
3. Fulfill residency and enrollment requirements
4. Demonstrate competency in teaching at the basic and advanced levels
5. Write, submit and defend an acceptable dissertation in sustainable urbanism

Curricular Structure

The Doctor of Sustainable Urbanism consists of six academic semesters (three academic years) of required study:

Year One

Semester One: (12 units)

1. Theories and Methods of Historical Research
2. Advanced Seminar in Urban Sustainability I
3. Directed Readings in Sustainable Urbanism I
4. Elective

Semester Two: (12 units)

1. Theories and Methods of Architecture, Landscape and Urbanism Research
2. Advanced Seminar in Urban Sustainability II
3. Directed Readings in Sustainable Urbanism II
4. Elective

Year Two

Semester Three: (12 units)

1. Methods of Sustainable Urbanism Research
2. Directed Research in Sustainable Urbanism I
3. Elective
4. Elective

Semester Four: (12 units)

1. Urban Morphology and Metabolism Research Methods
2. Directed Research in Sustainable Urbanism II
3. Elective
4. Elective

General Examination (must be completed before student is admitted to doctoral candidacy)

Year Three

Semester Five: (12 units)

1. Dissertation

Semester Six: (12 units)

1. Dissertation

Dissertation Defense*

*Students have a maximum of five (5) calendar years, dated from their first registration in the Doctor of Sustainable Urbanism program, to complete all degree requirements.

Courses

For a list of available courses, please refer to the Courses (p. 13) section of the Graduate School of Architecture & Urban Design in this *Bulletin*.

Degrees Offered

Master's Degrees

- Master of Architecture: MArch 3 (p. 34) (seven semesters)
- Master of Architecture: MArch 2+ (p. 35) (five semesters)
- Master of Architecture: MArch 2 (p. 36) (four semesters)
- Master of Landscape Architecture (p. 37)
- Master of Urban Design (p. 39)
- MS in Advanced Architectural Design (p. 40) (three semesters)
- MS in Architectural Studies (p. 40) (30 credits)

Dual Degrees

- Master of Business Administration/Master of Architecture (p. 40) (MBA/MArch)
- Master of Construction Management/Master of Architecture (p. 40) (MCM/MArch)
- Master of Landscape Architecture/Master of Architecture (p. 41) (MLA/MArch)
- Master of Landscape Architecture/Master of Urban Design (p. 41) (MLA/MUD)
- Master of Social Work/Master of Architecture (p. 41) (MSW/MArch)
- Master of Urban Design/Master of Architecture (p. 42) (MUD/MArch)

Doctoral Degree

- Doctor of Sustainable Urbanism (p. 42)

Administration

Heather Woofter (<http://samfoxschool.wustl.edu/directory/494>)
Director, College of Architecture and Graduate School of Architecture & Urban Design
Professor
MArch, Harvard University

Rod Barnett (<http://www.samfoxschool.wustl.edu/directory/9996>)

Chair, Master of Landscape Architecture Program
Professor
PhD, University of Auckland

John Hoal (<http://www.samfoxschool.wustl.edu/directory/60>)

Chair, Master of Urban Design Program
Professor
PhD, Washington University

Admission Procedures

Eligibility

Washington University encourages and gives full consideration to all applicants for admission, financial aid, and employment. The university does not discriminate in access to, or treatment or employment in, its programs and activities on the basis of race, color, age, religion, sex, sexual orientation, gender identity or expression, national origin, veteran status, disability or genetic information.

Information and Applications

From October until January 15, application forms and instructions for all graduate degree programs are available on our Graduate Admissions (<http://www.samfoxschool.wustl.edu/admissions/graduate>) website.

An application to the graduate programs should include a portfolio of student work in the visual arts (drawing, painting, sculpture, etc.) or architectural design work if the applicant has completed architectural design studio courses, along with a transcript or record from the institutions attended, and letters of recommendation. The Test of English as a Foreign Language (TOEFL) is required of international applicants along with verification of availability of funds.

For more information about graduate degree programs and requirements, contact the Graduate Admissions Counselor, Graduate School of Architecture & Urban Design, Sam Fox School of Design & Visual Arts, Washington University in St. Louis, CB 1079, One Brookings Drive, St. Louis, MO 63130-4899.

Phone: 314-935-6227 or 800-295-6227
(within continental United States)

Email: wuarch@wustl.edu

Website: <http://samfoxschool.wustl.edu/admissions/graduate>

Academic Policies

Academic Integrity

Students and members of the faculty of a university have an obligation to uphold the highest standards of scholarship.

Plagiarism or other forms of cheating will not be tolerated. Where a student has violated the integrity of the academic community, an instructor may recommend that the student be brought before the Committee on Academic Integrity. The Academic Integrity Policy for the Graduate School of Architecture & Urban Design can be found on our website (<http://samfoxschool.wustl.edu/node/5766>).

Units and Grades

A unit is the amount of credit given for one hour of lecture or up to three hours of studio work a week for one semester. Students in the Graduate School of Architecture & Urban Design may take one nonrequired course pass/fail each semester.

Grade Scale	Grade Points per Unit
A+	4.0
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0

Minimum Grade Requirement

Students in the Graduate School of Architecture & Urban Design must complete all required courses with a grade of C- or better.

Minimum Grade Point Average

Students in the Graduate School of Architecture & Urban Design are required to have a minimum grade point average of 2.7 in order to graduate.

Removal of Grade of I and Changes in F Grades

Incomplete marks in all architectural design studio courses (300- to 600-level) must be removed by the first day of classes of the following semester. Failure to remove the Incomplete will prevent the student from continuing in another architectural design course.

In all other courses, the grade of I must be removed no later than the last day of classes of the next full semester. On failure to make up an I within the next semester, the student shall automatically receive an F in the course unless explicitly

excused by the dean. An F grade, so received, may not be changed. Students will not be allowed to continue in courses requiring prerequisites if the prerequisite has an Incomplete grade. A student who carries more than 9 units of incomplete work may be declared ineligible to re-enroll.

F grades for a semester may be changed only through the last day of classes of the following semester and then only in extraordinary circumstances. The dean will approve no changes of F grades after this interval.

Retaking a Course in Which an F Has Been Received

When a student retakes a course in which an F has been received, both enrollments for the course will appear on the transcript. If a passing grade is received in the second enrollment, the first enrollment may be changed to R, indicating the re-enrollment upon request of the student and with the approval of the dean. This policy applies to courses taken at Washington University.

Retaking a Course in Which a Passing Grade Has Been Received

When a student retakes a course in which a passing grade has been received, both enrollments will show on the transcript. If the second grade is equivalent to or better than the first grade, the first grade may be changed to R, indicating the re-enrollment upon request of the student and with department approval. If the second grade is lower, both grades will stand. Credit toward the degree will be allowed for only one of the enrollments. This policy applies to courses taken at Washington University.

Maximum and Minimum Course Loads

Graduate students are not permitted to enroll in more than 17 credits per semester. Students must receive permission from their program chair before registering for more than 17 credits in a semester. Increased credit waivers are automatically granted in the following circumstances:

1. Students enrolled in English Language Support for Architecture Students (ARCH 100A). Students who are required to take this course will be registered by the Sam Fox School registrar. This course will count for an additional 1.5 credits but will not add to tuition cost and it will not displace any required courses. The 1.5 credits will not be counted toward the total necessary for completion of the MArch degree.
2. Students enrolled in Reading and Writing in Architecture, Landscape Architecture, and Urban Design (ARCH 100B). Students who are required to take this course will be registered by the Sam Fox School registrar. This course will count for an additional 1.5 credits but will not add to tuition cost and it will not displace any required courses. The 1.5

credits will not be counted toward the total necessary for completion of the MArch, MLA or MUD degree.

3. Students enrolled in English Support for Concepts & Principles of Architecture (ARCH 339E). Students who are required to take this course will be registered by the Sam Fox School registrar. This course will count for an additional 1.5 credits but will not add to tuition cost and it will not displace any required courses. The 1.5 credits will not be counted toward the total necessary for completion of the MArch degree.

An enrollment above 21 units will be charged at the established university rate per hour of the additional credits and must be approved by the dean or graduate program chair.

Full-time students must be registered for a minimum of 12 units. Partial load enrollment is possible when circumstances warrant it and requires permission of the dean. If students choose to enroll in fewer than 12 units during their final semester, they are still charged full-time tuition.

Adjustment of Admission Placement

At the time of admission, students are placed into a program level by the director of graduate admissions and the Admissions Committee. In exceptional cases this placement may be reviewed by appeal to the Executive Committee. Such an appeal can only be made after the student has completed a body of work in the school. The Executive Committee may adjust the student's placement, advancing the student within the design sequence and reducing the total number of unit requirements.

Transfer Credit

The Graduate School of Architecture & Urban Design does not award transfer credit at the graduate level. Instead, graduate students who have already completed part of the professional curriculum at another institution are placed upon admission at the appropriate level of the professional curriculum by the Admissions Committee.

Electives

In order to count as elective credit in the Graduate School of Architecture & Urban Design, a course must be at the 300 level or above.

Courses in University College do not count toward degree requirements.

Graduate students may not register for courses in the School of Engineering & Applied Science unless they have been admitted to the Master of Construction Management (MCM/MArch) dual degree program (<http://samfoxschool.wustl.edu/node/4118>). The only exception is T64 CNST 573 Fundamentals in Construction Management, which can be taken as an elective by any student in the Graduate School of Architecture & Urban Design.

Before registering for an MBA course, students must submit a "Request for Non MBA Student To Take an MBA Course" form to the the Olin Business School.

Seminars

The maximum enrollment in seminars (unless otherwise noted) is 12 unless granted approval by either the graduate program chair or the dean.

Workshops

Each semester, a changing selection of workshops in materials and graphic techniques is offered. Students are encouraged to enroll in these workshops as a supplement to their general curriculum. No more than one workshop is permitted in any given semester and no more than 3 total units of workshop credit throughout a student's study program are allowed, unless special permission is granted by the graduate program chair.

Prerequisites

Students enrolling in seminars or workshops without the necessary prerequisites must seek permission from the instructor. Students from outside Architecture seeking enrollment in Furniture Design courses or 1-credit workshops must have the permission of the instructor; registration without this permission does not guarantee placement in the course.

Independent Study

Graduate students who wish to enroll in an independent study must submit a petition and written proposal to their sponsoring faculty member, their adviser, and the program chair. Approved proposals are due to the Sam Fox School registrar by the course **add** deadline for the semester. Proposals submitted to the registrar past the deadline will not be considered.

Independent studies may be completed for 1, 2 or 3 units. A student may be enrolled in a maximum of 4 units of independent study per semester. Independent study courses cannot replace architectural design studios or other required courses.

Curricular Practical Training (CPT)

Students in the Graduate School of Architecture & Urban Design may only participate in CPT internships during the summer. CPT internships will not be approved during the fall and spring semesters.

Credits earned for CPT courses will not be counted toward the total necessary for completion of the MArch, MUD, or MLA degree. Students interested in registering for CPT should contact the Office for International Students and Scholars (OISS) and the Sam Fox Registrar's Office.

Course Enrollment Minimums

Each course must have a minimum enrollment of eight students or it will be cancelled.

Absence Rule

Regular attendance at all classes and studio meetings is expected. If, in the opinion of the instructor, any student has accumulated absences to such an extent as to preclude the possibility of satisfying the course requirements, the student's registration in that course will be cancelled, subject to the approval of the dean.

Satisfactory Academic Progress Toward a Degree

Students are expected to proceed at a pace which enables them to finish their degree within the appropriate time limit. All students must maintain a "pace" of 66 2/3 percent (number of credits earned divided by the number of credits attempted).

Academic Probation

A student in the Graduate School of Architecture & Urban Design will be placed on academic probation under any of the following circumstances:

- The student has a cumulative grade point average below 2.70.
- The student has a semester grade point average below 2.50.
- The student receives a studio grade below B-.
- The student fails to make Satisfactory Academic Progress (SAP).

This policy applies to any semester, including summer, in which a student is enrolled in either studio or at least 9 units.

Students on academic probation must successfully complete all courses for which they are enrolled and earn a semester grade point average of at least 2.70. Successful completion is defined as follows:

- The student must earn a B- or above in a studio course
- The student must earn a C- or above in all non-studio courses
- Incomplete (I) and Withdrawal (W) grades after the drop deadline are not considered successful completion

Additional academic expectations will be determined on an individual basis by the chair of the student's program. A student on academic probation who fails to meet the minimum established academic expectations will be reviewed by a Faculty Committee and may be dismissed.

A student will be removed from academic probation when all of the following criteria are met:

- The student has raised their cumulative grade point average above 2.70
- The student has no outstanding Incompletes
- The student has successfully retaken and passed all courses for which non-passing grades were previously received

Graduate Honors

Graduate Honors may be awarded to students receiving the Master of Architecture, Master of Landscape Architecture, or Master of Urban Design degree as determined by academic performance. Such students will receive the degree "with honors."

Leave of Absence (LOA)

Students may request a voluntary Leave of Absence for a maximum of one year or two semesters when individual circumstances, professional, medical or personal, warrant it. Petitions are reviewed and approved by the appropriate program chair and/or the dean. Any requests extending beyond one year will be reviewed on a case-by-case basis. In addition to a written petition, students requesting a Medical Leave of Absence must submit a letter of verification from the director of Student Health Services. Students must submit petitions for a Leave of Absence by the designated deadline, listed below. There is no guarantee that requests received after the published deadline will be reviewed. Leave of Absence petitions are available in the Sam Fox School Dean's Office, Givens Hall, Room 105.

If a student decides to take a leave without having first obtained an approved Leave of Absence petition, the student is considered withdrawn from the Graduate School of Architecture & Urban Design. If a withdrawn student wants to return to the Graduate School of Architecture & Urban Design, they must submit an official request for re-admission to the appropriate program chair. Students who withdraw from the program are not guaranteed re-admission. Students who are withdrawn from the Graduate School of Architecture & Urban Design for longer than one year must submit an updated portfolio to be considered for re-admission.

Deadline for a spring Leave of Absence is the last day of fall classes. Students returning from a Leave of Absence must submit a written letter stating their intention to re-enroll by April 15 (returning in the fall semester) or November 15 (returning in the spring semester). Withdrawn students requesting re-admission must submit requests by these same deadlines. In the case of a medical Leave of Absence, a letter of clearance is required from Student Health Services before a student will be permitted to re-enroll. International students requesting a Leave of Absence must contact their assigned adviser at the Office for International Students & Scholars (OISS) to discuss how their leave might affect their visa status.

Withdrawals and Refunds

Students wishing to withdraw for any reason from the Graduate School of Architecture & Urban Design before the end of the semester should consult in person with the associate dean of students. No such withdrawal will be official until the request in writing has been approved and the appropriate changes have been made in the student's record.

A written request for a refund must be submitted to the Sam Fox School Registrar's Office for consideration. Tuition adjustments will be processed based on information received and according to the schedule below. Tuition refund checks will be issued only after the fourth week of classes each semester. Materials fees for Graduate School of Architecture & Urban Design courses will not be refunded after the fourth week of classes. For any student whose medical condition makes attendance for the balance of the semester impossible or medically inadvisable, the university will make a pro rata refund of tuition, as of the date of withdrawal when the date occurs prior to the 12th week, provided the condition is verified by Student Health Services or a private physician. The date of withdrawal may correspond to the date of hospitalization or the date on which the medical condition was determined.

Withdrawal Date	Refund
Within 1st or 2nd week of classes	100%
Within 3rd or 4th week of classes	80%
Within 5th or 6th week of classes	60%
Within 7th or 8th week of classes	50%
Within 9th or 10th week of classes	40%
After 10th week of classes	0%

Retention of Student Work

The Graduate School of Architecture & Urban Design reserves the right to retain any student work submitted for course credit. Normally this work will be returned to the student at the end of the semester, except that which has been retained for publications, exhibitions, or accreditation reviews. It is highly recommended that students photographically reproduce their work or electronically store their work in order to keep a record of their work.

Intent to Graduate

Every candidate for a degree is required to file an "Intent to Graduate" in WebSTAC in order to participate in Commencement exercises. The deadlines for filing can be found on the University Registrar's website (<http://registrar.wustl.edu/student-records/graduation/intent-to-graduate>). A student must have a minimum 2.7 cumulative grade point average to graduate.

Financial Information

Financial Aid

The Sam Fox School of Design & Visual Arts strives to provide financial assistance to as many students as possible. Financial aid packages most often consist of a combination of fellowships or scholarships, teaching and/or technical assistantships, and loan assistance.

An application for financial aid will have no effect on decisions for admission to the Graduate School of Architecture & Urban Design. Financial aid awards, including merit-based scholarships, are identified through the admissions process and are based on separate considerations of academic excellence, architectural ability, and financial need.

Fees

The university reserves the right to change the fees stated or to establish additional fees at any time without prior written notice. Whenever fee changes or additions are made, they become effective with the next payment due.

Financial Obligations

Students are responsible for fulfilling their financial obligations to the university. If their account becomes overdue, a late payment fee will be assessed and a hold will be placed on the account. Students with a poor payment history may be restricted from utilizing certain payment options or receiving tuition remission until course credit has been earned. Nonpayment of tuition and other expenses due the university will be cause for exclusion from class or refusal of graduation, further registration, or transfer credit. In addition, students are liable for any costs associated with the collection of their unpaid bills, including, but not limited to, collection agency costs, court costs, and legal fees. Past due amounts can also be reported to a credit bureau.

Withdrawals and Refunds

For information about withdrawals and refunds, please refer to the Graduate School of Architecture & Urban Design Academic Policies (p. 44) page of this *Bulletin*.

Interdisciplinary Opportunities

Washington University offers courses through Interdisciplinary Programs that include studies in a variety of disciplines that cross traditional academic boundaries and support academic areas outside the schools.

- A limited opportunity for some Washington University students to enroll in courses at Saint Louis University and the University of Missouri-St. Louis is available through the Inter-University Exchange Program (p. 49).
- The Skandalaris Center (p. 50) offers co-curricular programming and practical, hands-on training and funding opportunities to students and faculty in all disciplines and schools.

Inter-University Exchange Program

The Inter-University Exchange (IE) program between Washington University, Saint Louis University and the University of Missouri-St. Louis began in 1976 as an exchange agreement encouraging greater inter-institutional cooperation at the graduate level. Over time, this program has evolved to include undergraduate education; however, the basic provisions of the original agreement are still in place today, and participation continues to be at the discretion of each academic department or unit.

At Washington University, there are several schools that **do not participate** in this program (i.e., degree-seeking students in these schools are not eligible to participate in the IE program, and courses offered in these schools are not open to SLU and UMSL students attending Washington University through the IE program). They are the School of Law, the School of Medicine, University College and the Summer School. The Washington University schools that are open to participation in the Inter-University Exchange program may have specific limitations or requirements on participation; details are available in those offices.

The following provisions apply to all course work taken by Washington University students attending Saint Louis University or the University of Missouri-St. Louis through the Inter-University Exchange program:

- Such courses can be used in the fulfillment of degree or major requirements. (Students should consult with their dean's office for information about how IE course work will count toward GPA, units, and major requirements.)
- Such courses are not regularly offered at Washington University.

- Registration for such courses requires preliminary approval of the student's major/department adviser, the student's division office or dean, and the academic department of the host university.
- Students at the host institution have first claim on course enrollment (i.e., a desired course at SLU or UMSL may be fully subscribed and unable to accept Washington University students).
- Academic credit earned in such courses will be considered as resident credit, not transfer credit.
- Tuition for such courses will be paid to Washington University at the prevailing Washington University rates; there is no additional tuition cost to the student who enrolls in IE course work on another campus. However, students are responsible for any/all fees charged by the host school.
- Library privileges attendant on enrolling in a course on a host campus will be made available in the manner prescribed by the host campus.

Instructions

Washington University students must be enrolled full-time in order to participate in the IE program and have no holds, financial or otherwise, on their academic record at Washington University or at the host institution.

1. The student must complete the Inter-University Exchange application form. Forms are available from the Office of the University Registrar and on its website (link below).
2. The student must provide all information requested in the top portion of the form and indicate the course in which they wish to enroll.
3. The student must obtain the approval signature of the professor teaching the class (or department chair) at SLU or UMSL, preferably in person.
4. The student also must obtain approval signatures of their major adviser at Washington University and the appropriate individual in their dean's office.
5. Completed forms must be submitted to the Office of the University Registrar in the Women's Building a minimum of one week before the start of the term.

Course enrollment is handled administratively by the registrars of the home and host institutions. Washington University students registered for IE course work will see these courses on their class schedule and academic record at WebSTAC under departments I97 (SLU) and I98 (UMSL). Final grades are recorded when received from the host institution. The student does not need to obtain an official transcript from SLU or UMSL to receive academic credit for IE course work at Washington University.

Contact: Office of the University Registrar
Phone: 314-935-5959
Email: registrar@wustl.edu
Website: <http://registrar.wustl.edu/student-records/registration/the-inter-university-exchange-program>

Skandalaris Center for Interdisciplinary Innovation and Entrepreneurship

The Skandalaris Center for Interdisciplinary Innovation and Entrepreneurship (<http://skandalaris.wustl.edu>) is the place on campus *Where Creative Minds Connect*.

Mission

At the Skandalaris Center, we provide **entrepreneurial resources** to those who **think differently** at Washington University, within St. Louis, and beyond.

Who We Serve

Our initiatives serve all students, alumni, faculty, staff and the community. We call this the **SC Network**.

Our Pursuits

Our initiatives are divided into three parts:

1. **Get Connected** (p. 50)
2. **Get Trained** (p. 50)
3. **Get Funded** (p. 51)

Get Connected

We are building the largest online community of Washington University talent, called ConNEXT (<http://skandalaris.wustl.edu/connect>). ConNEXT is a networking tool for sharing ideas, exchanging skills, and finding mentors and mentees.

ConNEXT is a resource for those who:

- Need someone else's help
- Have a skill to offer
- Want to be a mentor
- Want to find a mentor

Join the community via our website (<http://skandalaris.wustl.edu/connect>) or fill out our connection form (<https://skandalaris.wustl.edu/stay-connected-with-skandalaris>) to join the newsletter and learn about ways to get involved.

Get Trained

The Skandalaris Center offers co-curricular programs to serve students, alumni, faculty, staff and the community in their

entrepreneurial needs. These programs provide real-world, practical training opportunities.

1. **InSITE Fellowship** (<http://skandalaris.wustl.edu/training/insite-fellowship>)
The InSITE Fellowship is a prestigious fellowship available to graduate students who demonstrate a passion and drive for innovation, entrepreneurship and/or venture capital. A nationally recognized fellowship, this is an opportunity for graduate students in all schools to work with local entrepreneurs and venture capitalists (VCs) on consulting projects. In addition to connecting with local startups and VCs, fellows will have the opportunity to attend national conferences, including SXSW, and host networking events on campus.
Washington University is among peer schools such as Stanford, MIT, Harvard, NYU, Columbia and University of Pennsylvania, as it is one of the first schools in the Midwest, along with University of Chicago, to launch the InSITE Fellowship.
2. **Workshops** (<http://skandalaris.wustl.edu/training/workshops>)
We offer free, noncredit workshops designed to encourage ideation, develop skills and advance ideas. Workshops are held on both campuses, targeted toward various audiences. We recommend, but do not require, that participants attend all sessions, and have found that the workshops help competitors improve their deliverables.
Evidence-Based Entrepreneurship is designed to transform students and faculty from any school into capable innovators and entrepreneurs through seven contiguous sessions.
Washington University Startup Training Lab (WU-STL) is a free, year-long series that serves as a comprehensive introduction to innovation and entrepreneurship. Open to the community.
3. **Hatchery** (<http://skandalaris.wustl.edu/training/hatchery>)
Various schools at Washington University offer entrepreneurial training for credit. One such course is The Hatchery (Business Planning for New Enterprises). It is offered by the Olin Business School in both the fall and spring semesters and is open to all students at the university.
Students form teams around a commercial or social venture idea proposed by a student or community entrepreneur. The deliverables for the course include two presentations to a panel of judges and a complete business plan. The deliverables in the course are similar to the deliverables in the Skandalaris Center's business plan competitions and can be a valuable first step toward competitions and funding for a new venture.

Get Funded

We host several competitions each year that provide funding to social and commercial ventures. Each of these is an annual competition, with the exception of the Bear Cub, which awards funding three times a year.

Bear Cub Challenge (<https://source.wustl.edu/2016/06/bear-cub-challenge-awards-225000-five-research-teams>)

- This challenge provides funding for translational research with the goal of advancing the university's intellectual property toward commercialization.
- **Who Can Apply:** Washington University faculty, postdocs and graduate students
- **Award:** Award amounts vary

The Skandalaris Center Cup (SC Cup) (<http://skandalaris.wustl.edu/funding/sc-cup>)

- The SC Cup awards student-funded, for-profit ventures.
- **Who Can Apply:** Washington University students and postdocs
- **Award:** Up to \$5K, six months of mentorship

Social Enterprise and Innovation Competition (SEIC) (<http://seic.wustl.edu>)

- SEIC awards socially focused for-profit and nonprofit ventures. Teams are funded by community donors and foundations.
- **Who Can Apply:** Anyone (no Washington University affiliation required)
- **Award:** Award amounts vary

Washington University Patent Challenge - (<http://skandalaris.wustl.edu/funding/washu-patent-challenge>) **New!**

- Translate real, high-level Washington University patents into everyday English, and then apply the technology to an innovative, commercializable use (no licensing options available, strictly educational).
- **Who Can Apply:** Washington University students and postdocs
- **Award:** \$10K in awards (\$5K to undergraduate teams, \$5K to graduate and postdoc teams)

Suren G. Dutia and Jas K. Grewal Global Impact Award (GIA) (<http://skandalaris.wustl.edu/funding/global-impact-award>)

- This awards scalable, impactful, quick-to-market Washington University startups.
- **Who Can Apply:** Washington University students and recent alumni
- **Award:** Up to \$50K

Student Groups

IDEA Labs (<http://ideas.wustl.edu>), The Balsa Group (<http://www.thebalsagroup.org>), and The Entrepreneurship and Venture Capital Association (<http://olinwustl.campusgroups.com/evca/about>) provide additional opportunities to train and even launch a venture.

Learn More

Please contact the Skandalaris Center (<https://skandalaris.wustl.edu/contact-us>) for additional information about all programs. We're excited to hear from you!

Contact:	Jessica Stanko
Phone:	314-935-9134
Email:	sc@wustl.edu
Website:	http://skandalaris.wustl.edu

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