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Appendix A
WELCOME

Omar Khan, SoA Head

I’d like to welcome you to the School of Architecture’s Graduate School, whose focus is on design and research and the multiple ways they overlap. We offer seven masters programs, a doctorate of design and three PhD programs in the areas of Architecture and Advanced Architectural Design, Urban Design, Sustainable Design, Computational Design, Building Performance and Diagnostics and Architecture, Engineering and Construction Management. Our teaching is purposely interdisciplinary, helping you untap your creativity and providing you the skills to practice architecture and its related professions.

This year we have made some important additions to the curricula, introducing courses on Situating Research and Artificial Intelligence. These are available to all students across the different programs. Our aim is to provide you with the latest technological competencies as well as a broad understanding of how research functions in the design field. Likewise, we are committed to equity and inclusiveness in our teaching and look forward to helping you succeed in your studies.

Coronavirus Information

Carnegie Mellon is taking preventative measures to protect the well-being of its university community as the coronavirus outbreak continues to be a rapidly changing situation. Please refer to CMU’s Coronavirus Information page [https://www.cmu.edu/coronavirus/index.html](https://www.cmu.edu/coronavirus/index.html) for the latest updates.

CMU expects all students to adhere to A Tartan’s Responsibility [https://www.cmu.edu/coronavirus/ students/tartans-responsibility.html](https://www.cmu.edu/coronavirus/ students/tartans-responsibility.html) which outlines the expectations we have for all CMU students who will resume living, learning, working and interacting with our campus community, whether living on or off campus.
MISSION, HISTORY

SoA Mission

The SoA provides deep immersion in the discipline of architecture, intensified by the broader CMU culture of interdisciplinarity and creative inquiry.

The SoA educates students in the discipline of architecture emphasizing the role of creativity in architectural design; understanding its historical, social and environmental context; critically engaging technology in its innovation; and ethically working for social progress and justice in the built environment. Our undergraduate and graduate degree programs prepare students for the challenges facing architecture and urbanism in the twenty-first century, namely global warming, artificial intelligence and social justice. We aim to produce discipline-defining designers and thinkers in diverse global contexts.

This world-class architecture education is enhanced by our position within one of the world’s leading research and entrepreneurship institutions, and by the fundamental premise that architectural excellence demands both rigorous training in fundamentals and the development of unique specializations. Students may extend their core knowledge either through concentration in architecture subdisciplines like urban design, sustainable design or computational design, or through interdisciplinary interaction with CMU’s other renowned programs in the sciences, humanities, business and engineering. Though every SoA student graduates with intensive architecture knowledge, no two graduates leave with the same education.

In the twenty-first century, few architecture problems are straightforward. Graduates of SoA excel in the roles architects have performed for centuries - and in new roles catalyzed by the depth and breadth of their education - to create and execute innovative solutions to a huge range of emerging global challenges.

Cmu Mission

To create a transformative educational experience for students focused on deep disciplinary knowledge; problem solving; leadership, communication, and interpersonal skills; and personal health and well-being.

To cultivate a transformative university community committed to (a) attracting and retaining diverse, world-class talent; (b) creating a collaborative environment open to the free exchange of ideas, where
research, creativity, innovation, and entrepreneurship can flourish; and (c) ensuring individuals can achieve their full potential.

To impact society in a transformative way — regionally, nationally, and globally — by engaging with partners outside the traditional borders of the university campus.

**Cmu & Soa History**

CMU has been a birthplace of innovation throughout its 111–year history. Today, it is a global leader bringing groundbreaking ideas to market and creating successful start–up businesses. The faculty members are renowned for working closely with students to solve major scientific, technological, and societal challenges. The University puts a strong emphasis on creating things—from art to robots, and architecture.

CMU is the only school founded in the United States by industrialist and philanthropist Andrew Carnegie, who wrote the time–honored words, “My heart is in the work,” when he donated the funds to create Carnegie Technical Schools in 1900 in Pittsburgh, Pennsylvania. In 1912, the schools, including the SoA, became the Carnegie Institute of Technology, highly regarded for both the arts and technology. A merger with the Mellon Institute—the nation’s first major research institute—created CMU in 1967. Today, CMU is a national research University of about 11,500 students and 5,000 faculty, research, and administrative staff.

CMU is a diverse blend of academic disciplines. The University consists of seven colleges and schools: the College of Fine Arts (which includes the SoA), the Carnegie Institute of Technology (engineering), the Dietrich College of Humanities and Social Sciences, the Mellon College of Science, the Tepper School of Business, the School of Computer Science, and the H. John Heinz III College (Public Policy & Information Systems). It has become an international leader in technological fields such as computer science, robotics, and engineering. From its inception it has had a strong emphasis on the applied and practical arts and trades, as well as the fine arts. Its position of leadership in both the arts and in technology is unusual in higher education today.

The SoA is one of five schools within CMU’s CFA, alongside the schools of Art, Design, Drama, and Music. Founded in 1905, the CFA was the first comprehensive arts learning institution in the United States. Today it is a unique constellation of internationally top–ranked conservatory schools in the arts embedded within a tier–one research university. The five schools are committed to community engagement, supportive of creative risk–taking, and actively embracing diversity. The pedagogy across the college is built on the principles of “thinking through doing” and “learning through doing” in studio and conservatory–based environments, and respect for tradition while encouraging innovation.
SoA MASTER’S PROGRAMS

The SoA offers the following master’s degree programs:

**Studio-based Programs**
Master of Architecture (M.Arch)
Master of Advanced Architectural Design (MAAD)
Master of Urban Design (MUD)

**MS and PhD Programs**
Master of Science in Architecture–Engineering–Construction Management (MSAE CM) (jointly offered with Civil & Environmental Engineering)
Master of Science in Building Performance & Diagnostics (MSBPD)
Master of Science in Computational Design (MSCD)
Master of Science in Sustainable Design (MSSD)

A Track Chair who is a full-time faculty in the SoA coordinates each master’s degree program. Track Chairs coordinate the program’s curriculum (and any changes thereof), admissions, certification of degree, and often serve as Academic Advisors to students in their program.

The SoA also offers a PhD degree in three concentrations and a Doctor of Design (DDes) degree. The rules governing the PhD programs are given in the SoA's Doctor of Philosophy Degree Student Handbook. The rules governing the DDes programs are given in the SoA's Doctor of Design Student Handbook.

For details on all of our program offerings please visit our website at: https://soa.cmu.edu/graduate/

HANDBOOK INTRODUCTION

This handbook includes information about the graduate school’s policies, expectations, and guidelines, the specific requirements of your program. It also points you to other faculty, staff, and online resources for questions not addressed fully here. You will also find useful examples in the appendices. This handbook replaces all previous versions. The rules and guidelines set forth in this handbook apply to all masters students in the School of Architecture; however, for each individual student specific curricular requirements that were in effect at the time of matriculation apply. In accordance with university policy, students who began their studies prior to the date of this revision
of the handbook may follow time-to-degree requirements from the previous policy.

This handbook also has valuable information on CMU student policies and resources for Diversity, Equity & Inclusion (DEI), International Students, Financial Services, Counseling & Psychological Services, Health Services, Campus Wellness, Religious and Spiritual Life Initiatives (RSLI), Shuttle & Escort Services, and links to many other resources. For additional information or clarification, the student may consult with SoA staff, faculty, and other university personnel.

CARNegie MELлон STATEMENT OF ASSURANCE

Carnegie Mellon University does not discriminate in admission, employment or administration of its programs or activities on the basis of race, color, national origin, sex, handicap or disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status or genetic information. Furthermore, Carnegie Mellon University does not discriminate and is required not to discriminate in violation of federal, state or local laws or executive orders.

Inquiries concerning the application of and compliance with this statement should be directed to the university ombudsman, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-1018. Obtain general information about Carnegie Mellon University by calling 412-268-2000.

Carnegie Mellon University publishes an annual campus security and fire safety report describing the university’s security, alcohol and drug, sexual assault and fire safety policies, and containing statistics about the number and type of crimes committed on the campus, and the number and cause of fires in campus residence facilities during the preceding three years. You can obtain a copy by contacting the Carnegie Mellon Police Department at 412-268-2323. The annual security and fire safety report also is available online at www.cmu.edu/police/annualreports.

Information regarding the application of Title IX, including to admission and employment decisions, the sexual misconduct grievance procedures and process, including how to file a report or a complaint of sex discrimination, how to file a report of sexual harassment, and how the university responds to such reports is available at www.cmu.edu/title-ix. The Title IX coordinator may be reached at 412-268-7125 or tix@cmu.edu.
THE CARNEGIE MELLON CODE

Students at Carnegie Mellon, because they are members of an academic community dedicated to the achievement of excellence, are expected to meet the highest standards of personal, ethical and moral conduct possible. These standards require personal integrity, a commitment to honesty without compromise, as well as truth without equivocation and a willingness to place the good of the community above the good of the self. Obligations once undertaken must be met, commitments kept.

As members of the Carnegie Mellon community, individuals are expected to uphold the standards of the community in addition to holding others accountable for said standards. It is rare that the life of a student in an academic community can be so private that it will not affect the community as a whole or that the above standards do not apply.

The discovery, advancement and communication of knowledge are not possible without a commitment to these standards. Creativity cannot exist without acknowledgment of the creativity of others. New knowledge cannot be developed without credit for prior knowledge. Without the ability to trust that these principles will be observed, an academic community cannot exist. The commitment of its faculty, staff and students to these standards contributes to the high respect in which the Carnegie Mellon degree is held. Students must not destroy that respect by their failure to meet these standards. Students who cannot meet them should voluntarily withdraw from the University.

The Carnegie Mellon Code can also be found on-line at:
https://www.cmu.edu/student-affairs/theword/

UNIVERSITY POLICIES & EXPECTATIONS

It is the responsibility of each member of the Carnegie Mellon community to be familiar with university policies and guidelines. In addition to this departmental graduate student handbook, the following resources are available to assist you in understanding community expectations:

The Word/Student Handbook: https://www.cmu.edu/student-affairs/theword/
Academic Integrity Policy: https://www.cmu.edu/student-affairs/ocsi/
University Policies Website: https://www.cmu.edu/policies/
Graduate Education Policies Website: https://www.cmu.edu/graduate/policies/
Doctoral Student Status Policy:
Graduate Student Registration Website: https://www.cmu.edu/hub/registrar/registration/index.html
Office of Graduate and Postdoc Affairs: http://www.cmu.edu/graduate/policies/index.html

Please see Appendix A for additional information about The Word and University resources.

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2021-2022 ACADEMIC CALENDAR

The official, up-to-date CMU Academic Calendar is at: https://www.cmu.edu/hub/calendar/index.html. It provides information on ALL deadlines including registration, class start, add/drop deadlines, holidays, exams dates, etc. Among the most important dates for SoA undergrads are (as of Aug. 29, 2021):

**Fall 2021 Semester**  
Semester: (M-13, T-14, W-13, Th-12, F-12)  Total=64

- **August 30**  
  M  Semester & Mini-1 Classes Begin

- **September 6**  
  M  Labor Day; No Classes

- **September 13**  
  M  Semester Course Add & Audit Deadline

- **October 11**  
  M  Semester Course Drop Deadline; assign Withdrawal Grade after this

- **October 14**  
  Th  Mid-Semester Break; No Classes (Mini-1 exams will take place)

- **October 18**  
  M  Mid-Semester Grades Due by 4 pm

- **November 5**  
  F  No Classes; Day for Community Engagement

- **November 8**  
  M  Semester Course Withdrawal & Pass/Fail Option Deadline

- **November 15-19**  
  M-F  Spring 2022 Registration Week

- **November 24-26**  
  W-F  Thanksgiving Holiday; No Classes

- **December 3**  
  F  Mid-Semester Break; No Classes (Mini-1 exams will take place)

- **December 3**  
  F  Semester & Mini-2 Last Day of Classes

- **December 4,5,8,11,12**  
  Reading Days

- **December 6,7,9,10,13**  
  Final Examinations

- **December 17**  
  Final Grades Due by 4 pm

**Spring 2022 Semester**  
Semester: (M-13, T-14, W-14, Th-13, F-12) Total=66

- **January 17**  
  M  Martin Luther King Day; No Classes

- **January 18**  
  T  Semester & Mini-3 Classes Begin

- **January 31**  
  M  Semester Course Add & Audit Deadline

- **February 28**  
  M  Semester Course Drop Deadline

- **March 4**  
  F  Mid-Semester Break; No Classes

- **March 7-11**  
  M - F  Spring Break; No Classes
DEPARTMENTAL INFORMATION

Departmental Personnel

A complete listing of all SoA faculty and staff can be found at: [https://soa.cmu.edu/faculty-staff](https://soa.cmu.edu/faculty-staff)

Administrative Faculty

Omar Khan, Head of School, is responsible for all of the activities of the School. He hires faculty and staff and oversees all the academic and financial aspects of the School. He is available to students by appointment. Office in CFA201, okhan2@andrew.cmu.edu, 412-268-8076.

Mary-Lou Arscott, AADip, RIBA, Associate Head for Design Fundamentals, is responsible for organizing the ASO studios, and the general structure of the undergraduate studio curriculum. Office in: CFA 206, mlarscott@cmu.edu, 412-268-1709.

Joshua Bard, Associate Head for Design Research, is responsible for coordinating the School’s graduate programs, and for facilitating the research activity of faculty and students. Office in: MMCH 310B, jdbard@cmu.edu, 412-268-7182.

Erica Cochran Hameen, PhD, Director for Diversity, Equity and Inclusion (DEI), responsible for coordinating the DEI efforts and policies of the SoA. Office in: MM 410F, ericac@andrew.cmu.edu.

Kai Gutschow, PhD, Associate Head for Design Ethics, responsible for coordinating the SoA’s efforts towards social justice, the "Design Ethics" curriculum, as well as the SoA's engagement with the community. Office in: MM 302a, gutschow@andrew.cmu.edu, 412-268-7999.
Financial Matters

David Koltas, Assistant Head, is responsible for oversight of all financial and personnel matters of the school, and serves as a liaison with central administration. Responsibilities include budgeting and reporting, purchasing oversight, hiring transactions, and submitting student accounts transactions for school charges, scholarships, and awards. Office in: CFA 201, dkoltas@andrew.cmu.edu, 412-268-1561.

Diana Martin, Financial Assistant, is responsible for day-to-day financial transactions, including reimbursable expenses. Office in: CFA 201, diana2@andrew.cmu.edu, 412-268-2356.

Career Development & Alumni Networking

Kristen Frambes, Director of Alumni & Professional Relationships, is the career development and alumni relations director for the SoA. She is also responsible for the administration of the faculty promotion & tenure cases and faculty searches. Office in: CFA 201, kframbes@andrew.cmu.edu, 412-268-1538. Schedule an appointment at: calendly.com/kframbes.

Alexis McCune Secosky, Director of Recruitment and Enrollment, works with admission for all undergraduate and graduate programs by meeting with prospective students, coordinating recruitment efforts, managing the admission committees, and completing initial enrollment for incoming graduate students. As the SoA's Architect Licensing Advisor, she advises students on architecture licensure. Office in: CFA 201, amccune@andrew.cmu.edu, 412-268-6390. Schedule an appointment at: calendly.com/amccune.

Caedyn Busche, Assistant Director/Career Consultant for College of Fine Arts, Career & Professional Development Center, is the liaison and rep for all architecture students in the university careers office. They help organize job fairs, and can help students with resumes, interview skills, etc. Office in: WW 262, cbusche@andrew.cmu.edu, 412-268-2064.

Shops & Labs

Jon Holmes, Shop Director, oversees the Architecture Shop. He is responsible for providing instruction, setting safety policy, and providing training/maintenance on all Shop equipment. Shop & Office in: CFA A9, jcholmes@andrew.cmu.edu, 412-268-2089 and the Shop at: 412-268-2361.

Terry Hritz, dFAB Lab Manager, along with a team of monitors who have training in the operation and safety of lab use, staff the dFAB Lab. They are responsible for the lab’s robots, equipment, computers, software and facilities scheduling. See: https://soa.cmu.edu/dfabLinks to an external site.. Shop & DFab in: MM C4, thritz@andrew.cmu.edu, 412-268-8520.

Alex Troyer, Assistant Shop Director. Office in: CFA A7, atroyer@andrew.cmu.edu, 412-268-2361.
Computing
Robert J. Armitage, Computing Administrator, is responsible for the school’s computing infrastructure, including hardware, software, servers, workstations, printers, plotters, and scanners. Office in CFA 201, ria2@andrew.cmu.edu, 412-268-1542. All computing problems, questions, and concerns should be immediately conveyed in detail to soa-ithelp@andrew.cmu.edu.

Communications
Meredith Marsh, Marketing & Communications Manager, is responsible for all of the internal and external communications for the school, including the website, social media, newsletters, events publicity, publications, and marketing initiatives website. Office in: CFA 201, mamarsh@andrew.cmu.edu, 412-268-1609.

Carolyn Ristau, Office Assistant, is responsible for the administration of the SoA office. She supports the marketing and communications efforts of the school and assists with room reservations, mailing list management, event coordination, office maintenance, and other various tasks. Office in: CFA 201, cristau@andrew.cmu.edu, 412-268-2355.

Public Programs
Sarah Rafson, Curator of Public Programs, is responsible for curating and organizing all public programs in SoA. Office in CFA 201, srafson@andrew.cmu.edu.

Undergraduate Advising
Heather Workinger Midgley, Ph.D., Adjunct Faculty & Senior Academic Advisor, assists students in establishing their class schedules and gives guidance about general university regulations. She is responsible for registration and transcripts. She can answer scheduling, academic audit, and general academic progress questions. She coordinates study abroad activities including inquiries, applications, and transfer credits. She teaches First-Year Seminar in the fall and spring semesters. She also acts as a coordinator for the SoA Faculty Mentors and the Architecture Peer Mentors (APM) Program. Office in CFA212, haw5@cmu.edu, 412-268-1345. Schedule an appointment at: calendly.com/hworkinger.

Graduate Advising
Darlene Covington-Davis, Graduate Program Administration, assists in the daily administration of the graduate programs and advises current students in the MS/PhD programs on administrative policies and procedures for the school and the university. Office in: MM 410G, dc1e@andrew.cmu.edu, 412-268-2363

Erica Oman, Senior Academic Advisor for Studio-Based Grad Programs, assists graduate students in the M.Arch, MAAD & MUD programs in registering for their class schedules and all official actions related to registration and transcripts. She gives guidance about general university regulations and
questions about the academic progress of students. Office in: CFA212, eoman@cmu.edu, 412-268-1345
Schedule an appointment at: calendly.com/eoman.

Other SoA Staff & Related Support

**Jenna Wizzard Kappelt, Manager of Outreach Programs**, leads the Center for Architecture Explorations, outreach programs and research, and oversees Pittsburgh’s Architecture Learning Network ([www.alnpgh.org](http://www.alnpgh.org)), which brings architectural education to the Pittsburgh community. Office in: CFA 201, jkappelt@andrew.cmu.edu, 412-268-5551.

**Jill Chisnell, Senior Librarian**, is the liaison from the library to the SoA (as well as Art and Design). She is available for individual appointments and research help. She also maintains the Art, Design, Architecture Research Guides ([https://guides.library.cmu.edu/architecture](https://guides.library.cmu.edu/architecture)). Office in: Hunt 413, jillianc@andrew.cmu.edu, 412-268-6330.

**Valeria J. Martinez, CFA Assistant Dean for Diversity, Equity and Inclusion**, is responsible for reinforcing our commitment to diversity, equity and inclusion (DEI) in the College of Fine Arts, and will help us to continue to assure that CFA continues to become a more diverse, truly inclusive, and equitable environment for all. Office in: CFA 100 (Dean’s Office), vjmartinez@cmu.edu.

**DEPARTMENTAL RESOURCES**

**Studios & Classrooms**
The studio spaces are the heart of the physical environment of the School. The maintenance of the studio is the responsibility of the students. The studio is home to both your colleagues and your faculty. Its arrangement and maintenance is a design problem that must serve many needs from individual expression to group meetings and communication. Students are responsible for the condition of all studio furniture including, but not limited to, desks, chairs, file cabinets, and tool storage chests.

Students are expected to leave the studio at the end of the semester in the same condition they found it at the beginning. The costs to the School of cleaning the studios at the end of the semester or the costs of repair of damage to the studio beyond regular wear and tear may be evenly divided between the students in the studio. The cost will be directly charged to each student account.

Individuals found destroying studio, classroom, or crit-space facilities can be suspended from the university. Students must use a cutting mat when cutting on any surface, especially drafting boards, tables, or the floor. Students will be charged for damages, so please be careful.

Students are not permitted on roofs, parapets or other non-public areas of campus. Anyone found throwing objects off the roof or out any window could be suspended from the university.
The School is not responsible for personal belongings brought into the studios.

**Studio Furniture**
Students are responsible for the condition of all studio furniture including, but not limited to, desks, chairs, file cabinets, and tool storage chests. Students must use a cutting mat when cutting on any surface, especially drafting boards, tables, or the floor. Students will be charged for damages, so please be careful.

**Projectors**
Portable projectors are available for school-related activities. The projectors are kept with the computing team in CFA 201, the main office of the School of Architecture. To borrow a projector, students must work with a member of the faculty to assist in submitting their request. All requests must include a purpose, date, and time for pickup and return. Students should send this information to a faculty member and ask that they submit the request to soa-ithelp@andrew.cmu.edu.

**Copiers**
Copiers are located throughout the campus. The School of Architecture copiers in CFA and MMCH are for the use of the faculty and staff only. Public printers and copy machines, including a color copier in Hunt Library, use Campus Xpress, Plaid Ca$h cards, or cash.

**Fax Machine**
Students may send and receive faxes via the office fax machine. Incoming faxes must be labeled with your full name and year. The fax number for the School is 412.268.7819.

**SoA Fabrication Facilities**
Paint Spray Booths Paint spray booths are located in CFA A9 and MMCH 322. Spray adhesive, spray paint, and other aerosol media are forbidden in all indoor spaces and around campus buildings. Training on the use of each spray booth is required of all persons prior to usage. Studio coordinators are responsible for training their studio faculty at the beginning of each semester. Students are only permitted to use the booth for studio-related work or projects. Students are not permitted to use the booths to spray large items not related to studio work (e.g., buggies). Improper use of the spray booth will result in a loss of privileges of the unit and/or suspension from the university.

**Architecture Shop**
The SoA maintains a shop facility on the ground level of CFA A9, and in surrounding spaces, for use by students, faculty, and staff of the SoA. Students are trained to safely use a wide variety of tools and to explore the creative potentials of their interactions with various materials. The Shop maintains equipment for working with wood and metal, a small crit space, and a student project storage area. Jon Holmes is the Shop Director. Assistant Shop Director Alex Troyer supervises during evenings and weekends with the help of a staff of student monitors. Shop access should be scheduled in advance at https://soa.cmu.edu/archshop-scheduling.
**Design Fabrication (dFAB) Lab**

The SoA's Design Fabrication (dFAB) Lab equips young professionals with the skills to thrive in an increasingly fluid and technologically sophisticated model of practice. The Design Fabrication (dFAB) Lab is located on the C-level of MMCH and can be accessed via the MMCH elevator and exterior rear stairs. This facility includes a range of digitally-driven additive and subtractive tools including 3D printers, laser cutters, a four-axis CNC router, CNC Bed Mill, and vacuum former. The lab also includes a dedicated robotic fabrication space that includes two large and one small industrial robotic arm. These robotic arms are configured as a six-axis robot with a dedicated rotary table as well as a six-axis robot mounted on a 23-foot linear track. The small robotic arm is mounted on a mobile cart for use in locations outside the dFAB Lab. Tooling includes a milling spindle, gripper, hot wire saw, and digital probe. Dedicated computer workstations with CAD/CAM software compliment the fabrication equipment.

Professor Jeremy Ficca is Director of dFAB Lab and Terry Hritz is the dFAB Lab Manager. Terry is typically available in the lab M-F 9am - 5pm. Student lab monitors extend lab hours into the evenings and weekends. As classes are held in the lab throughout the week, students should confirm lab hours and equipment availability through the SoA website at [soa.cmu.edu/dfab](http://soa.cmu.edu/dfab). Use of the lab facilities outside of staffed hours is strictly forbidden.

Access is limited to SoA faculty, staff, currently-enrolled students, and other students enrolled in dFAB-authorized courses that specifically require the use of the lab as part of the course syllabus. All users of dFAB must be trained on the equipment prior to use and are subject to all policies and procedures posted on the dFAB website. Students may also reserve equipment time through the online reservation system found through the dFAB website. Refer to the dFAB website at [soa.cmu.edu/dfab](http://soa.cmu.edu/dfab) for more information.

**Computing**

All incoming SoA students are expected to have familiarity with digital tools and workflows. CMU and SoA are world leaders in the area of computation and the many ways it relates to design and architecture, and we expect students to master these tools and skills as part of their education. The stronger your computing skills, the more you will be able to get out of your CMU SoA experience. To best support your educational experience and success as a student member of the CMU SoA community, you are expected to be prepared with your own sufficiently powerful laptop computer, specific software packages, and essential digital skills that are catered to your curricular needs at SoA.

The computing facilities of the School of Architecture are for SoA students, faculty, and staff only. Use by other students is by permission or by enrollment in courses offered by the School. If you observe unauthorized use, please inform: soa-ithelp@andrew.cmu.edu. General Computing Rules
Violations of any computing rules or policies may result in disabling access to the SoA computing equipment.

- Game playing is forbidden on SoA workstations, unless it is specifically related to coursework.
- Headphones must be used for all music and sound.
- No personal software may be installed on SoA workstations.
- All data must be stored on an external device or on the server. Do not save to the desktops; the SoA team is not responsible for any data left on studio workstations.

**Problem Reporting**

Any and all issues with computers, printers, plotters and scanners should be immediately conveyed in detail to soa-ithelp@andrew.cmu.edu. The description of the problem should be as specific as possible, including: the machine in question; the software being used; the task being performed; etc. If reporting a computer problem please provide the hostname for the machine in question. In Windows open a command prompt and type in “hostname”. Studio Computing Equipment CFA studios will provide power for laptop use and MMC studios will have desktops for the studios that require them. Plotters and printers are available in spaces adjacent to the undergraduate studios. Food or drink are expressly forbidden near any SoA computing equipment.

**Flat Screen Monitors**

Upon request the SoA will provide students in CFA Studio with one 22” flat screen monitor and articulated arm for use at their studio desk.

- Monitors must NOT leave the studio and must remain locked at the studio desk the entire semester.
- Distribution times will be set at the beginning of each semester.
- Monitors are to be returned at the end of each semester in the condition in which they were received. Failure to do so will result in a fine equal to that of the replacement value.
- Studio Coordinators have final discretion as to whether monitors are allowed in studios.
- Monitors are available on a first-come, first-served basis. Students should contact SOA Computing [soa-ithelp@andrew.cmu.edu] to request a monitor once they have received approval to do so from a Studio Coordinator.

**Server Space**

The SoA provides file storage for each studio. While every effort is made to make the server stable, secure, and available, the SoA is in no way responsible for data or the guarantee of access. It is safe computing practice to have multiple backups of important data. Server space is limited to 40GB of
shared space per studio. When a space has reached its size limitation, no further files are able to be uploaded until the required space has been cleared. Be mindful that this is a shared space; do not use more than your fair share. The SoA servers are exclusively reserved for the storage of school related data; software installers, movies, personal backups etc. will not be tolerated. Unauthorized Software All use, copying, distribution, or solicitation of unauthorized or pirated software is expressly forbidden and punishable by law. Fines can exceed $100,000 and jail time per incident.

**Printing**

- Printing multiple copies is forbidden. SoA printers are not copiers and should not be used as such. If you require multiple copies of a document, please print one copy and take the output to a copy station on campus. Tartan Ink is located in the University Center and services provided include black/white and color copies, single and double-sided copying, assortment of colored and textured papers, including cover stock, specialty papers such as gloss paper, resume quality paper, etc. They also offer binding and finishing options that include cutting, lamination, folding, padding, stapling, tape binding (thermal binding), collating, comb binding, and coil binding: www.cmu.edu/tartanink

- Large printing jobs (greater than 50 pages) are not permitted. Printing larger jobs or multiple copies can result in suspension from computer use.

- Use double-sided prints whenever possible for paper and ink conservation.

- Transparencies, sticky back, and all other personally supplied media are expressly forbidden in the studio laser printers. Use of these types of materials will damage the equipment.

- Please recycle print paper.

- Please inform soa-ithelp@andrew.cmu.edu if ink or toner is low in any SoA printer.

**Studio-based Media**

Both the second floor of CFA and the third floor of MMC have a 42” large-format color inkjet plotter, a flatbed scanner, and multiple black-and-white laser printers. There is also a 36” large format black and white laser plotter and scanner located in MMCH. SoA will provide plotter ink cartridges and paper, and laser toner cartridges and paper. Plotter paper will be provided in limited quantities. If the free plotter paper privilege is abused, students will be responsible for providing their own paper.

*Printing on the HP 42” studio plotters will now be done through a PC Kiosk using PDF files.*

**SoA Media Center**

The Media Center is located in CFA 213. Equipment currently includes:

- Two HP DesignJet plotters with 36” or 42” 24lb bright white bond paper and 36” or 42” HP Heavyweight coated paper
- HP Color Laser printer capable of Letter & 11”x17” plain paper, card stock or satin finish
- Canon high quality photo inkjet capable of up to 13”x19” in Matte or Gloss photo paper.

The Media Center will be staffed, and these services are available on a fee-basis and charged to the student’s university account.

We prefer to use in house paper with our equipment, if you have a special request please check with the Media Center beforehand. When submitting files to the Media Center, make sure PDFs do not contain multiple page sizes, if you require more than one size printed, please submit multiple files with like sizing. Please allow extra time if you are submitting a large print job, it is suggested to contact the media center before submitting a large print job. Files that are over 200mb can cause a plotter to crash, please make sure to optimize your files in Acrobat, un-optimized files will take two to three times as long to process on the plotters. Vector graphics will cause plotters to take much longer to print, if at all. Please rasterize files containing vector graphics. Please be attentive to your email after submitting files to the Media Center as we will email you if there are any issues with your submission. Canon photo printers are extremely slow, please contact the media center about printing on these printers.

Hours will be posted on the SoA website and on the door of the media center.

**CFA Multimedia Computer Labs**

The CFA Multimedia Computer Labs are located in CFA 317, 318, 321, and 323. Computing Services and the College of Fine Arts Dean’s Office jointly maintain the Computer Lab. These spaces have PC and Mac stations and are available to SoA students. Staffed hours change throughout the year, for up to date information please check www.cmu.edu/computing/labs. These spaces are not operated or supported by the SOA team. Direct any questions about these Labs to a Support Specialist. [it-help@cmu.edu] Multimedia equipment, such as video camcorders, DSLR still cameras, and many other devices, are available for lending in Hunt Library at the main circulation desk. For more information, see www.cmu.edu/computing/tes/computerlabs/lending.

**tech.soa**

Tech.soa (tech.soa.cmu.edu) is an ecosystem of architectural design technology resources offered to and by CMU SoA students, faculty, and staff. At this website you can register for upcoming workshops, contribute your own content, learn about the facilities, view useful tutorials, and utilize a repository of common references. In conjunction with tech.soa, the SoA also launched a Slack forum (cmusoa.slack.com) as a platform for more real time and organic discussion around SoA technology resources and general school culture.
**SoA Communications**
A student’s failure to receive and read University communications delivered to their official email address in a timely manner does not absolve that student from knowing and complying with the content of such communications.

While students are allowed to redirect email from their official University email address to another address (e.g. @gmail.com), they do so at their own risk. The University is not responsible for the handling of email by other service providers. Having email redirected does not absolve students from knowing and complying with the content of the communication sent to their official University email address.

In addition to maintaining standard email etiquette, students are not allowed to use school distribution lists without first requesting permission. Students who wish to use these lists should contact Meredith Marsh [mamarsh@andrew.cmu.edu].

You may check your email at any University or School computer. Individual classes and studios may have separate bulletin boards or Canvas sites on the campus network. To access the Canvas system, go to: [www.cmu.edu/canvas](http://www.cmu.edu/canvas).

**Announcements and Room Reservations**
The SoA community is encouraged to share events, news, announcements, and updates with the Marketing & Communications team by completing the form at [http://bit.ly/SoARoomReservation](http://bit.ly/SoARoomReservation). All room reservations for student meetings, events, etc. must also be submitted through this form without exception. Submitting information through this form also allows students the opportunity to suggest content for the SoA newsletters, website, social media accounts, and calendars.

**SoA Calendars**
The SoA lists events on the SoA website calendar and on individual Google calendars for students, faculty, public events, and room reservations. The calendars are listed on the following pages on the SoA website:

- SoA Website Upcoming Events: soa.cmu.edu/events
- SoA Google Calendars: soa.cmu.edu/calendar

**SoA Website**
The SoA website, soa.cmu.edu, is a good source of information for SoA events, announcements, and course information.

**Marketing Surveys**
The SoA Marketing & Communications team sends out annual surveys to current students to collect feedback on the program. Stay tuned for information in SoA newsletters for the links to these surveys each year.
**Weekly Email Newsletters**
The School of Architecture shares news, upcoming events, reminders, and job opportunities in a weekly email newsletter to students. Students are responsible for reading this newsletter to know what is happening within the school.

**Social Media**
Students are encouraged to follow SoA on the school’s official social media accounts on Facebook, Twitter, Instagram, Vimeo, and Flickr under the handle @CMUSoA and on LinkedIn. These are the only social media accounts maintained by SoA; the SoA is not responsible for the content published by any other associated or non-associated account. These accounts serve a range of audiences, both internal and external, and do not comprehensively publish information necessary for students. As noted above, students must know and comply with all content of communications sent to their official University email address; social media does not act as a substitute for official email communication.

**Vitrines**
Display cases are located on the second floor of CFA by both stairwells and on the third floor of Margaret Morrison. A schedule of displays is coordinated with faculty from the School. Studio coordinators will work with their students to create displays in the vitrines and gallery spaces.

**Message Boards**
There are two message board locations maintained by the School of Architecture. Message boards are located in both of the stairwells outside the main studio of CFA 200. Two additional message boards are located on the third floor of Margaret Morrison by the elevator and between the staircases. These message boards are for SoA communication only. They will include school announcements, important deadlines, community activities, conferences, lectures at other universities, scholarship information, and competition announcements. Students should check these message boards regularly for announcements and information.

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**MASTER’S DEGREE PROGRESS AND ATTAINMENT**

**Master’s Program Requirements**
The following requirements are common to the different master’s programs offered by the SoA. Specific details pertaining to each master’s degree program, including program description, duration,
curriculum, residency requirement, degree requirements, and more, are available later in this section and online at: https://soa.cmu.edu/graduate/

**Residency Requirement and Limits**

As outlined in the Master’s Students Statute of Limitations, https://www.cmu.edu/policies/student-and-student-life/masters-students-statute-of-limitations.html students will complete all requirements for the master’s degree within a maximum of seven years from original matriculation as a master’s student, or less if required by a more restrictive department, school or college policy. Once this time-to-degree limit has lapsed, the person may resume work towards a master’s degree only if newly admitted to a currently offered master’s degree program under criteria determined by that program.

Under extraordinary circumstances, such as leave of absence, military or public service, family or parental leave, or temporary disability, a school or college may, upon the relevant department’s recommendation and with the written approval of the dean (or designate), defer the lapse for a period commensurate with the duration of that interruption. Students who are pursuing a master’s degree as part-time students for all semesters of their program, as approved by their program, may also appeal to their program or department for extension of the time to degree limit.

The maximum candidature period for a master’s degree expires at the end of the seventh academic year following the September of the year admission is granted into the degree program. Any period of absentia (where granted) is counted towards this maximum candidature period. Once the time–to–degree limit has lapsed a person may resume work towards a master’s degree only if newly admitted to a currently offered master’s degree program under criteria determined by the SoA.

The University’s Master’s Students Statute of Limitations can be found online at: https://www.cmu.edu/policies/student-and-student-life/masters-students-statute-of-limitations.html International students are required to consult with the Office of International Education for visa extensions beyond the stipulated full–time residency period.

**Opting-Out of Courses**

SoA strives to provide students with new knowledge and skills and, as a result, aims to avoid requiring any student to retake courses for their master’s program. If a student’s master’s program curriculum has a course requirement that they believe they have already met through a previously completed course, that student can petition the Track Chair to replace that course with an equivalent elective course.
Program Transfers

Students who wish to transfer to a different SoA program are advised to discuss the transfer with their Advisor and Track Chair of their current program, and then with the Track Chair of the program they seek to transfer into. Students requesting transfer must submit a new Statement of Purpose and Portfolio, where applicable, for the review by the Track Chair and the Graduate Program Working Committee of the program they wish to transfer to. Transfers must be completed prior to the university’s course add deadline, typically two weeks after the start of the semester (https://www.cmu.edu/hub/registrar/course-changes/).

Once a decision is made, the student will be notified. If the student is offered admission, upon acceptance of this offer the Graduate Programs Coordinator officially documenting the transfer to the new program will submit a new form.

International students should note that they would need to contact OIE and complete additional forms to update their program name, any scholarship, and length of program.

Thesis Submission Requirement (Ms Programs Only)

Common to all MS programs, except MSAECM, is the degree requirement of thesis submission. Students in any Master of Science program (MS) can only be certified for their degree after their thesis has been approved by their Thesis Advisor and, if applicable, committee, and an approved final electronic copy of it has been received by the program’s coordinator for submission to the CMU Library’s system of record.

Note that additional degree requirements may vary from program to program. Consult your Track Chair for specific degree requirements. To submit your thesis, follow these simple steps:

- Download and fill this checklist for thesis submission.
- Name this checklist using the following convention: AndrewID_Checklist_Department_Year
- Name your approved thesis PDF using the following convention: AndrewID_Degree Type_Department_Year
- Send these two files electronically in PDF format to the graduate coordinator for MS and PhD programs (dc1e@andrew.cmu.edu) before the Final Grades deadline.

Note: your thesis PDF should include the signatures page with your Thesis Advisor and (if applicable) committee members’ signature. You can find a template of the signatures page in the Appendix, and at: https://soa.cmu.edu/ms-thesis-submission/

Student Reports & Records

A file is created and maintained by the Graduate Programs Coordinators when a student first enrolls in any graduate program. The following documents will be maintained in each file:

20
• Application and all supporting documentation, and admission review forms completed by relevant members of the Graduate Program Working Committee.

• Any academic action reporting by the Graduate Programs Working Committee and the PhD Program Committee – letters of commendation, warning, probation.

• Any formal report of academic progress and performance.

• Documentation pertaining to the enrollment status of the student.

• Documentation on financial support (e.g., award of scholarships, fellowships, etc.) where applicable.

Access and review of a student’s records by students and university personnel are governed by the Public Law 93–380 “The General Education Provisions Act” and other relevant policies of CMU, as stated in the university’s Graduate Education website.

See also Student Privacy Rights in the section below.

Graduate Programs Committees
The Graduate Programs committees administer all of the master’s programs. Their roles and responsibilities are described here, as well as in relevant sections below.

The Graduate Programs Executive Committee (GPEC)
The Graduate Programs Executive Committee (GPEC) comprises four full time faculty members appointed by the Head for a period of two years. The GPEC monitors all professional and post–professional graduate programs and makes recommendations to the Head of the School.

The Graduate Programs Working Committee (GPWC)
The Graduate Programs Working Committee (GPWC) comprises the Track Chairs of every master’s program, as well as Principal Advisors of PhD students, Graduate Programs Coordinators, and Graduate Admissions Coordinators. The GPWC is responsible for holding periodic curricular reviews of all graduate programs and any changes thereto.

The members of the Executive Committee chair the working committee and may nominate other faculty and graduate students to serve as members of the GPWC.

The GPEC determines who can or cannot vote on any matter brought before the GPWC, based on consideration of the role, qualification and expertise of members in relation to the subject matter, any potential conflict of interest or violation of confidentiality circumstance. Such determination shall be communicated in writing in advance to the Committee along with motion(s) prior to the vote being taken. The GPEC considers and may approve any petition requesting an exception from the academic guidelines and requirements spelled out in this document.
**PhD Program Committee**

The PhD Program Committee, comprising all faculty members who are Principal Advisors of Ph.D. students, administers all matters pertaining to the Ph.D. programs. Members of the PhD Program Committee are also members of the Graduate Program Working Committee. The Chair of the Graduate Program Executive Committee is a member of the PhD Program Committee.
Master of Architecture
Program Description
The Master of Architecture (M.Arch) is a studio-based, first-professional degree program to educate tomorrow’s leaders in architecture-related careers. The M.Arch program is built on CMU’s 100-year tradition of training architects in the practice of design and technical fundamentals, with the opportunity to engage with SoA’s long-standing expertise in sustainable (MSSD), computational (MSCD), urban (MUD), or public interest design (UDBS), or construction management (MSAECM). Our M.Arch program’s strategically small size allows students to shape their individual educational agendas and career paths as they interact directly with leading-edge research projects in the school and community, and around the world.

This is a two-year program designed for individuals who hold a pre-professional baccalaureate degree in architecture or a professional architecture degree from an international university, or the equivalent in professional experience. The curriculum aims to provide flexibility and individualized courses of study for students with different backgrounds and with different ambitions. A careful evaluation of previous coursework and professional experience for each student determines the minimum course requirements for each student to achieve professional standards (including NAAB SPC’s) by graduation. Students may apply to “Opt Out” of coursework they have mastered previously.

The program is STEM-eligible for international students, and it is accredited by the National Architectural Accrediting Board (NAAB). For information on the M.Arch’s NAAB accreditation see the appropriate section of https://soa.cmu.edu/about.

Residency Requirement
The M.Arch is a two-year program.

Graduation Requirements
In addition to the standard requirements for all graduate students in the SoA, students in the M.Arch program must satisfy the following:

- Students must complete a minimum of 180 units of coursework relevant to the professional degree and approved by the Track Chair.
- Students must complete a minimum residency of four (4) academic semesters with full-time status (minimum 36 units per semester). Coursework taken during the summer at CMU or at other institutions may be used to satisfy SPC, but do not reduce the residency requirement.
- All course substitutions must be approved by the program Track Chair.
Graduate Advanced Master’s Program (GAMP)
SoA graduate students can work towards a specialized concentration or second degree by strategically using electives to enroll in courses associated with other programs. For example, M.Arch students are eligible for a “Graduate Advanced Master’s Program” (GAMP), which allows them to apply up to 48 units from their first SoA M.Arch curriculum to another SoA master’s degree. This allows M.Arch students to graduate with a special concentration or another degree, save a semester of time and tuition, and enter the job market with a unique skill set.
M.Arch Curriculum

M.Arch | Master of Architecture | Pre-Professional Degree + 180 CMU Units

1 Fall 1st Year (45 units)
Studio:
- M.Arch Studio: Praxis 1 (18 units)

Prof & Tech Courses 1:
- Architectural Theory 1 (6-9)
- Generative Modelling (9)
- Environmental Science 1: Climate & Energy (9)

Grad. Seminar:
- Situating Research (3)

Summer Online:
- Design Skills Workshops (3)

Program Description:
CMU's Master of Architecture (M.Arch) is a studio-based, 1st professional degree program to educate tomorrow’s leaders in architecture-related careers. It combines CMU’s long tradition of educating architects in the broad core competencies needed to become practicing professionals, with the opportunity to engage with SoA's cutting-edge expertise in sustainable, computational, and urban design. Students combine core and optional studies, and engage in interdisciplinary or in highly specialized research and speculation. Our programs strategically small size allows students to shape their individual agendas as they interact directly with leading-edge faculty and projects in the school, community and around the world.

2 Spring 1st Year (45 units)
Studio:
- M.Arch Studio: Praxis 2 (18 units)

Prof & Tech Courses 1:
- Materials & Assembly (M&A) (9)
- Statics/Structures (9)
- Real Estate for Architects (9)
- Modern Architectural History (9)

Elective Studies:
- Electives
- M.Arch Pre-Thesis (6)

Program Requirements:
This is a two-year, NAAB-accredited program designed for individuals who hold a pre-professional baccalaureate degree in architecture, or a professional architecture degree from an international university, or the equivalent in professional experience. The curriculum aims to provide flexibility and individualized courses of study for students with different backgrounds and with different ambitions. A careful evaluation of previous coursework and professional experience for each student determines the minimum course requirements for each student to achieve professional standards (including NAAB SPC’s) by graduation. Students may apply to "Opt Out" of coursework they have mastered previously.

3 Fall 2nd Year (45 units)
Studio:
- Advanced Synthesis Option (ASO) Studio (18)

Prof & Tech Courses 1:
- Environmental Science 2: Building Systems Integration (9)
- Computational Design Selective (3+)

Design Ethics Selective (3+)

Elective Studies:
- Electives
- M.Arch Thesis Seminar (6)

Program Requirements:
Students can pursue specialty coursework associated with other SoA masters programs, potentially reducing the time/expense of obtaining another SoA post-professional degree. In addition to the standard requirements for all graduate students in the SoA, students in the M.Arch program must satisfy the following:
1. Students must complete a minimum of 180 units of coursework and a minimum residency of four (4) academic semesters at full-time status (minimum 36 units per semester).
2. Coursework taken during the summer at CMU or at other institutions may be used to satisfy SPC, but do not reduce the residency requirement.
3. All course substitutions must be of professional nature and approved by the program Track Chair.

Footnotes:
1. If previous work meets our standards, students may apply to "Opt Out" of coursework listed here, though not a reduced total unit count.
2. Students may also choose to take the more advanced "Graduate Recital/Development" course in the Fall semester for 3-12 units.
3. At least one computational design selective and one design ethics selective must be taken in any one of the 4 semesters for a minimum of 3 units each. See Track Chair for a current list.
4. An elective seminar Thesis Studio is optional. All students considering Thesis should begin discussions in the Architectural Theory course, and must submit in the required milestone of pre-thesis and thesis prop courses in.semester 2.

As of: 24 August, 2021
Master of Advanced Architectural Design

Program Description
The Master of Advanced Architectural Design (MAAD) is a postgraduate, studio-based program that engages emerging methods of design and fabrication through architectural design to speculate upon future modes of architectural practice, enhanced construction methods, and material culture within the built environment.

With a particular emphasis upon design, the four-semester program leverages the School of Architecture’s and Carnegie Mellon’s core strengths in design fabrication, architectural robotics, computational design, and ecological thinking as vehicles for knowledge acquisition and speculation.

The program focuses on the creation of new insights and new knowledge—or “research”—through the design process, or “research by design.”

The program seeks to probe the technical and cultural opportunities and implications of a data-rich future in which design methodologies, construction processes, and sustainable building life cycles are intrinsically interlaced.

The goal is consciously speculative and experimental work that is deeply enmeshed with social and environmental concerns, with explicit ties to humanistic and cultural discourses, industry, and contemporary practice. The faculty seek advanced-level projects that will position graduates as future thought leaders in architecture and allied fields relating to advanced fabrication, material performance, construction methodologies, or academia.

Residency Requirement
The MAAD is a 2-year (4 semester) program with an option for advanced standing at 3 semesters. Students must complete a minimum residency requirement of three (3) academic semesters. Full-time status (minimum 36 units per semester) is required during the residency period.

Graduation Requirements
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MAAD program must satisfy the following:

- Students are required to attend a Digital Fabrication Workshop in the week immediately preceding the start of the fall semester of their first year. These sessions will provide basic skills to utilize digital fabrication tools available in the school of architecture.
- Students must complete a minimum of 165 units of course work including a minimum of 63 units of elective coursework for graduation.
- All course substitutions must be approved by the program Track Chair.
# MAAD Curriculum

## MAAD
Master of Advanced Architectural Design

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<th>Prep:</th>
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<tr>
<td>Summer Online: (8 units)</td>
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<tr>
<td>45-699</td>
<td>Digital Skills Workshops (3)</td>
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### 1 Fall 1st Year (42 units)

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<tr>
<td>48-772</td>
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<tbody>
<tr>
<td>48-774</td>
<td>Pro-seminar (3)</td>
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<tr>
<td>48-620</td>
<td>Situating Research (3)</td>
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### 2 Spring 1st Year (45 units)

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<table>
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<th>(0 units)</th>
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<td>Thesis Prep (9)</td>
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<td>3 &amp; 4</td>
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### 3 Fall 2nd Year (45 units)

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<tr>
<td>Design Research Methods (9)</td>
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<th>Selectives / Electives:</th>
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</tbody>
</table>

### 4 Spring 2nd Year (45 units)

<table>
<thead>
<tr>
<th>Project:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>48-785</td>
<td>Design Research Project (18)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Fellowship</td>
<td></td>
</tr>
</tbody>
</table>

### Program Description:

The Master of Advanced Architectural Design (MAAD) is a post-professional design research graduate program that offers advanced level design research across a number of strength areas within the School of Architecture. The program leverages School of Architecture core strengths in materiality, construction, architectural robotics, computational design, and ecological thinking as vehicles for knowledge acquisition and speculation. The program seeks to probe the technical and cultural opportunities and implications of a data-rich future in which design methodologies, construction processes, and sustainable building life cycles are intrinsically interfaced.

The curriculum comprises three areas:
- **Studio**: Advanced by thesis Option studios offered in the first year address a broad range of topics and methodologies.
- **Research/Project**: A required pro-seminar introduces present topics within the MAAD program. A thesis option seminar outlines methods of design research and inquiry. These courses lay the foundation for the two-semester design research project in the second year.
- **Selectives/Electives**: These courses offer students the flexibility to craft a unique trajectory through the school. Any elective course offered in the School of Architecture counts toward the Selective course requirement.

### Program Requirements:

In addition to the standard requirements for all graduate students in the School of Architecture, students in the MAAD program must satisfy the following:
- **Students must complete a minimum of 156 units of coursework including 36 units Design Research Project for graduation.**
- **Students must complete a minimum of 81 units of Selective / Elective coursework. Of these, at least 36 units must be electives offered in the School of Architecture.**
- **Students must complete a minimum of 24 units of Selectives / Electives.**
- **Students must complete a minimum residency requirement of three (3) academic semesters.**
- **Full-time status (minimum 36 units per semester) is required during the residency period.**
- **All course substitutions must be approved by the program track chair.**

17 August 2021
**Master of Urban Design**

**Program Description**

The Master of Urban Design (MUD) is a post-professional, two-year program that prepares graduates for careers using urban design to critically address environmental, economic, social, political, and cultural issues affecting contemporary urbanization. The studio-based curriculum allows students to explore design strategies in a variety of scales and settings, from the post-industrial city to the suburban periphery to the dense global metropolis.

The studio sequence is supported by small-group seminars and workshops to develop the skill sets necessary for an urban designer in the twenty-first century. Students graduate with a firm grasp of the history, theory and practice that has established urban design as a discipline, as well as skills in cutting-edge media and design methods.

This program is distinguished by its emphasis on integrating socially engaged practice with new tools and techniques for representing, understanding, and designing cities; by the opportunity to work in trans-disciplinary teams at the intersection of the arts, humanities and technology across Carnegie Mellon’s departments and colleges; and by its location in Pittsburgh—a thriving post-industrial laboratory.

**Residency Requirement**

The MUD is a two-year program with a minimum residency of four (4) academic semesters at full-time status (36 units).

**Graduation Requirements**

In addition to the standard requirements for all graduate students in the School of Architecture, students in the MUD program must satisfy the following:

- Students must complete a minimum of 180 units of coursework for graduation.
- Each semester requires a minimum of 36 units to achieve Full Time Status; however, the typical semester course load is 45 units.
- Core course substitutions are allowed only with the consent of the Track Chair.
# MUD Curriculum

## MUD

### Master of Urban Design – Class of 2021

<table>
<thead>
<tr>
<th>Semester</th>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Fall 1st Year</td>
<td>45 units</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong> Spring 1st Year</td>
<td>45 units</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong> Fall 2nd Year</td>
<td>45 units</td>
<td></td>
</tr>
<tr>
<td><strong>4</strong> Spring 2nd Year</td>
<td>45 units</td>
<td></td>
</tr>
</tbody>
</table>

### Required Digital Skills Workshop (9 units)

### Studio (18 units)
- UD Studio 1: Urban Places (18)

### Coursework (27 units)
- Urban Design Media: Intro (6)
- Urban Design Media: GIS (6)
- Graduate Seminar 1: The Practice of Urban Design (3)
- History of Urban Design (9)

### Program Description:
The Master of Urban Design (MUD) postprofessional, two-year degree program prepares graduates for careers using urban design to critically address environmental, economic, social, cultural issues affecting contemporary urbanization. The studio-based curriculum allows students to explore design strategies in a variety of scales and settings, from the post-industrial city to the suburban periphery to the dense global metropolis.

The studio sequence is supported by small-group seminars & workshops to develop the skill sets necessary for an urban designer in the 21st century. Students take required and elective courses in the School of Architecture and elective courses in graduate programs at the six other colleges within the university.

### Electives (6 units)

### Program Requirements:
- **Location in a transformed post-industrial city.** Pittsburgh, perhaps the quintessential post-industrial city, has transformed itself since 1985 from a declining economy based on heavy industry to a robust and diverse economy based on technology.
- **Active participation in the technological ethos of Carnegie Mellon.** Benefitting from Carnegie Mellon's unique research culture in emerging media and advanced technologies, the Master of Urban Design program reflects socially engaged practice in the 21st century.

- **Coursework** (24 units)
- **Electives** (6 units)

- **Required Digital Skills Workshop** (9 units)
- **Studio** (18 units)
- **Coursework** (27 units)

- **Graduate Seminar 4: ULI Competition (3)**

#### In addition to the standard requirements for all graduate students in the School of Architecture, students in the MUD program must satisfy the following:
- Complete a minimum of 180 units of coursework with a minimum residency of four (4) academic semesters at full-time status (60 units). The typical semester course load is 15 units.
- Core course substitutions are allowed only with the consent of the Chair.

### 18 September 2019
Master of Science in Architecture, Engineering and Construction Management

Program Description
The Master of Science in Architecture–Engineering–Construction Management (MSAECM) Program is jointly offered by the School of Architecture and the Department of Civil & Environmental Engineering.

The MSAECM degree program is intended for practitioners, researchers, and educators in engineering, architecture, construction management fields, and other professionals in the building industry who wish to be leaders in advanced management technologies and their application to the built environment.

The program is designed to accommodate flexibility in the admission and graduation needs of candidates through program length and prerequisite courses that build up toward more advanced courses.

Admission to the MSAECM FAST TRACK program is contingent upon a resume review documenting a minimum of eight years of leadership experience in Architecture, Engineering, and/or Construction Management.

For those that matriculate during the 2021-2022 school year we are temporarily offering an alternative spring matriculation and course of study due to the pandemic and visa restrictions. Students will meet with the Track Chair individually to structure their course sequence.

Residency Requirement
Students admitted to the standard MSAECM must complete a minimum residency of three academic semesters at full-time status (minimum of 36 units per semester).

Students admitted to the standard MSAECM FAST TRACK must complete a minimum residency of two academic semesters at full-time status (minimum of 36 units per semester).

Graduation Requirements For MSAECM
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSAECM program must satisfy the following:

- Students must complete a minimum of 120 units as outlined on the curriculum chart below.
- Pre/Co-requisites: Waivers are available by request if similar work has recently been completed elsewhere. These units will be replaced with Approved Electives.
- **Required Internship**: See “SoA STANDARDS, POLICIES & PRACTICES FOR GRADUATE PROGRAMS, Outside Work and Internships” in this handbook for additional requirements.
- **Selectives**: 12 units each in the “Or/And” categories of Sustainability Assessment, Quantitative Modeling, Management, and Computational Skills. Students are encouraged to take the other selective courses as electives.
- **Approved Electives**: A minimum of 36 units as noted on the chart or by petition. Prerequisites count towards this total.
- A maximum of 54 units per semester.
- Grade of B or better in courses marked with an asterisk (*) on the curriculum chart.
- Advanced standing is available to qualified CMU students within the B.A. in Architecture or B.Arch or other Master’s programs through the Accelerated Master’s Program (AMP).

**Graduation Requirements For MSAECM Fast Track**
- Students must complete a minimum of **96 units** as outlined on the curriculum chart below.
- **Core courses**: Two semesters of 12-794 Graduate Seminar, 48-725 Real Estate Design & Development, 48-759 Value Based Design. 48-767 Transdisciplinary Thinking and 48-765 AECM Synthesis Project are not required but are encouraged as electives.
- **Required Internship**: Not required.
- **Selectives**: 12 units each in the “Or/And” categories of Sustainability Assessment, Quantitative Modeling, Management, and Computational Skills. Students are encouraged to take the other selective courses as electives.
- **Approved Electives**: A minimum of 36 units as noted on the chart or by petition. Prerequisites count towards this total.
- A maximum of 54 units per semester.
- Grade of B or better in courses marked with an asterisk (*) on the curriculum chart.
- Advanced standing is available to qualified CMU students within the B.A. in Architecture or B.Arch or other Master’s programs through the Graduate Accelerated Master’s Program (GAMP).
Ms AECM Curriculum

MSAECM
Master of Science in Architecture—Engineering—Construction Management

1 Fall 1st Year (40 units)
Core: (12 units)
12-7914 Graduate Seminar, Section D (3) (P/N)
48-725* Real Estate Design & Dev (12)

Sustainability: (12 units)
48-786* Indoor Environmental Quality (12)
48-729* Sust. Health & Prod (12)
48-763* Protean Systems (12)

Prerequisites: (6 units)
12-411 Project Management for Construction (6)

Recommended: (3 units)
48-620 Graduate Seminar: Situating Research (3)

Approved Fall Electives:
12-792 Sustainable Eng, Principles (12)
12-741 Data Management (6)
48-760 HVAC & Power Supply for Low-Carbon Buildings (6/12)
48-763 Protean Systems (6)
48-783 Generative Modeling (6)

Approved Spring Electives:
12-603 Construction Estimating (6)
12-714 Environmental LCA (12)
12-718 EES&S Project (12)
12-745 Advanced Infrastructure Project (12)
48-711 Paradigms Research in Arch. (6/12)
48-722 Building Performance Modeling (12)
48-762 Zero Energy Housing (6)
19-684 Eng & Tech Innovation Mgmt (3/6)
19-689 Finance for Innov. Management (6)
19-661 Special Topics: Decision-Making Methods for Innov. Mgmt (3/6)

2 Spring 1st Year (40 units)
Core: (12 units)
12-7914 Graduate Seminar, Section D (3) (P/N)
48-759* Value Based Design (12)

Management: (12 units)
12-750 Infrastructure Management (12)
12-751 EES&S Project (12)
12-756 Project Planning & Reporting (12)

Computational Skills: (12 units)
12-711 BIM for Eng, Construct., & Facility Management (12)

Approved Spring Electives:
12-603 Construction Estimating (6)
12-714 Environmental LCA (12)
12-718 EES&S Project (12)
12-745 Advanced Infrastructure Project (12)
48-711 Paradigms Research in Arch. (6/12)
48-722 Building Performance Modeling (12)
48-762 Zero Energy Housing (6)
19-684 Eng & Tech Innovation Mgmt (3/6)
19-689 Finance for Innov. Management (6)
19-661 Special Topics: Decision-Making Methods for Innov. Mgmt (3/6)

3 Summer
Required:
48-704 MS Internship (9 units) (P/N)

Program Description:
The Master of Science in Architecture—Engineering—Construction Management (MSAECM) program is jointly offered by the School of Architecture and the Department of Civil & Environmental Engineering. The program prepares building-delivery professionals for careers in capital project delivery dealing with the entire life cycle of capital projects, from pre-design to design, construction, commissioning, operation, and maintenance stages. It focuses on the integration of design and technology, particularly advanced information systems, as a means of both improving building performance and eliminating negative environmental impact.

Graduates of our program are equipped to become effective decision-makers who can positively impact economic, environmental, and ethical aspects of the built environment through professional management strategies.

Program Requirements:
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSAECM program must satisfy the following:
• One-hundred twenty (120) units of coursework are required for graduation. The 9-unit (P/N) summer internship(s) do not contribute to the total unit count. Course substitutions and prerequisites waivers will be reviewed on a case-by-case basis.
• The maximum per semester unit count is 18 units.
• Students must complete a minimum residency requirement of three (3) academic semesters at full-time status (minimum 35 units per semester).
• Advanced standing is available to qualified CMU students who meet the B.A. in Arch or B.Arch or other master's program's requirements through the Accelerated Master's Program (AMP).
*Students must choose one of these two courses and are encouraged to take the other as elective.
*Courses below this line are outside of the SwA and CEE. Registration is limited.
*Minimum grade of B required.
Ms AECM Fast Track Curriculum

**MSAECM – Fast track**
Master of Science in Architecture–Engineering–Construction Management

### 1 Fall 1st Year (48 units)
**Core:** (12 units)
- 12-794 Graduate Seminar, Section D (12)
- 48-725* Real Estate Design & Dev (12)

**Sustainability:** (12 units)
- 48-788* Indoor Environmental Quality (12)
- 48-730* Sust. Health & Prod (12)
- 48-783* Protein Systems (12)

**Quantitative Modeling:** (12 units)
- 12-706 Civil Systems Investment & Planning (12)
- 48-733 Environmental Performance Simulation (12)

**Approved Fall Electives:**
- 12-712 Sustainable Eng. Principles (12)
- 12-741 Data Management (6)
- 48-796 HVAC & Power Supply for Low-Carbon Buildings (6/12)
- 48-763 Protein Systems (6)
- 48-783 Generative Modeling (6)
- 19-684 Eng & Tech Innovation Mgmt (3/6)
- 16-689 Finance for Innov. Management (6)

### 2 Spring 1st Year (48 units)
**Core:** (12 units)
- 12-794 Graduate Seminar, Section D (12)
- 48-756* Value Based Design (12)

**Management:** (12 units)
- 12-780 Management (12)
- 48-756* Project Planning & Reporting (12)

**Computational Skills:** (12 units)
- 12-711 BIM for Eng. Construct., & Facility Management (12)

**Approved Spring Electives:**
- 12-603 Construction Estimating (6)
- 12-714 Environmental LCA (12)
- 12-718 EEMS Project (12)
- 12-745 Advanced Infrastructure Project (12)
- 48-711 Paradigms Research in Arch. (9/12)
- 48-722 Building Performance Modeling (12)
- 48-763 Zero Energy Housing (6)
- 19-684 Eng & Tech Innovation Mgmt (3/6)
- 16-689 Finance for Innov. Management (6)
- 90-789 Resilient & Sustainable Cities (12)

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**Program Description:**
The Master of Science in Architecture–Engineering–Construction Management (MSAECM–Fast track) program is jointly offered by the School of Architecture and the Department of Civil & Environmental Engineering. The MSAECM–Fast track program requires 24 fewer units than the standard MSAECM program, but admission is contingent upon a successful mini-scholarship review, documenting a minimum of 8 years of professional experience in Architecture, Engineering, and/or Construction Management.

The program prepares building-delivery professionals for careers in capital project delivery dealing with the entire life cycle of capital projects, from pre-design to design, construction, commissioning, operation, and maintenance stages. It focuses on the integration of design and technology, particularly advanced information systems, as a means of building performance and enhancing environmental performance and sustainability.

Graduates of our program are educated to become effective decision makers who can positively impact economic, environmental, and ethical aspects of the built environment through professional management strategies.

Our graduates have successful careers in government, industry, business and NGO (non-governmental organization) sectors, progressing in positions where design professionals continuously make large-scale capital project design, construction, and operations decisions.

**Program Requirements:**
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSAECM–Fast track program must satisfy the following:

- 98 units of coursework are required for graduation.
- Course substitutions and prerequisite waivers will be reviewed on a case-by-case basis.
- Students must complete a minimum residency requirement of two (2) academic semesters of full-time status (minimum 96 units per semester).
- A maximum of 54 units per semester.
- Students must choose at least one of these two courses and are encouraged to take the other as an elective.
- Courses below this line are outside of the SoA and CEE. Registration is limited.
- Minimum grade of B required.

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August 2021

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33
Master of Science in Building Performance and Dynamics

Program Description
The Master of Science in Building Performance & Diagnostics (MSBPD) is a two-year program for architecture and engineering graduates committed to advancing the quality of the built environment for human health and ecological sustainability. MSBPD graduates have successful careers in design and engineering practice, industry, government, consulting, and non-profit sectors designing, catalyzing and quantifying high performance buildings and communities.

The MSBPD curriculum is intended to provide four (4) semesters of intensive learning about: sustainability science; sustainable technologies and systems; performance simulation tools; data acquisition and analytics; social science and statistics; sustainability economics and policy. Courses are offered by faculty across the disciplines at CMU. The MS curriculum also serves as the required minimum coursework for PhD studies at CMU, upon successful admission to the program with a PhD advisor.

Residency Requirement
The MSBPD is a 2-year (4 semester) program with a minimum residency of three (3) academic semesters at full-time status (36 units).

Graduation Requirements
In addition to the course requirements for the MSBPD program, students must satisfy:

- A minimum of 160 units of coursework with a minimum residency of three (3) academic semesters at full-time status (36 units).
- A GPA of 3.0, with exceptions to be approved by the graduate faculty.
- Advance standing & core course substitution that have been pre-approved by the Track Chair.
- Advanced standing of one or two semesters of coursework for qualified CMU students within the B.Arch and M.Arch program through the Accelerated Master's Program (AMP).
### MSBPD Curriculum

#### MSBPD

**Master of Science in Building Performance & Diagnostics**

<table>
<thead>
<tr>
<th>1 Fall 1st Year (40 units min)</th>
<th>2 Spring 1st Year (45 units min)</th>
<th>3 Fall 2nd Year (45 units min)</th>
<th>4 Spring 2nd Year (36+ units)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Requisite</strong></td>
<td><strong>Research</strong></td>
<td><strong>Research</strong></td>
<td><strong>Research</strong></td>
</tr>
<tr>
<td>48-620</td>
<td>Building Research (3)</td>
<td>48-692</td>
<td>Shaping Light (9)</td>
</tr>
<tr>
<td>48-613</td>
<td>Sustainability, Productivity, Health &amp; Quality of the Built Environment (9)</td>
<td>48-706</td>
<td>Performance Evaluation Tools</td>
</tr>
<tr>
<td><strong>Performance Evaluation Tools</strong></td>
<td><strong>Performance Evaluation Tools</strong></td>
<td><strong>Performance Evaluation Tools</strong></td>
<td><strong>Performance Evaluation Tools</strong></td>
</tr>
<tr>
<td>15-110/110</td>
<td>Principles of Computing (10)</td>
<td>48-691</td>
<td>GIS/GAM (9)</td>
</tr>
<tr>
<td>and/or 12-745/750 equivalent Python + R</td>
<td>48-721</td>
<td>Building Performance Modeling (9)</td>
<td>12-740</td>
</tr>
<tr>
<td><strong>S/Electives</strong></td>
<td><strong>S/Electives</strong></td>
<td><strong>S/Electives</strong></td>
<td><strong>S/Electives</strong></td>
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<tr>
<td>Refer to List Below</td>
<td>Refer to List Below</td>
<td>Refer to List Below</td>
<td>Refer to List Below</td>
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</tbody>
</table>

**Program Description**

The Master of Science in Building Performance & Diagnostics (MSBPD) is a two-year program for architecture and engineering graduates committed to advancing the quality of the built environment for human health and ecological sustainability. MSBPD graduates have successful careers in design and engineering practice, in industry, government, consulting, and non-profit sectors — designing, catalyzing, and quantifying high performance buildings and communities.

The MSBPD curriculum is intended to provide four semesters of intensive learning about: sustainability science; sustainable technologies and systems; performance simulation tools; data acquisition and analytics; social science and statistics; sustainability economics and policy.

Courses are offered by faculty across the disciplines at CMU. The MSBPD curriculum also serves as the required minimum coursework for PhD studies at CMU, upon successful admission to the program with a PhD advisor.

**Program Requirements**

In addition to the course requirements for the MSBPD program, students must satisfy:

- A minimum of 100 units of course work with a minimum residency of three (3) academic semesters at full-time status (36 units).
- A GPA of 3.0, with exceptions to be approved by the graduate faculty.
- Advanced standing & core course substitution that have been pre-approved by the Track Chair.
- Advanced standing of one or two semesters of coursework for qualified CMU students within the BArch and MArch program through the Accelerated Master's Program (AMP).

**Approved Selectives/Electives**

- Perf of Bldgs & Urban Systems
- Zero Energy Housing
- Sustainable Engineering Principles
- Environmental Performance Simulation Tools
- Advanced CAD, BIM, and 3D Visualization
- Environmental Life Cycle Assessment
- Performance, Data & ML
- Database Design and Management
- Machine Learning in Practice
- Applied Data Analytics
- Data Analytics for Design
- Exploring and Visualizing Data
- Statistics for Social & Data Science
- Survey Design
- Analysis of Survey Data
- Sampling, Survey, and Society Probability and Statistics
- Statistical Methods for Manager
- Sustainability Theory & Policy
- Introduction to Ecological Design Thinking
- Planning by Design: Campuses to Cities
- Sustainable Energy - The Developing World
- Energy Policy & Economics
- Cities, Technology + The Environment
- Ecology and Theory
- Systems Thinking for Environmental Policy and Planning
- Shaping the Built Environment: Experiments in Geometry Matter

*27 August 2021*
Master of Science in Computational Design

Program description
The Master of Science in Computational Design is a post-professional research-based program investigating new design opportunities and critical perspectives at the intersection of design and computation. The program mobilizes Carnegie Mellon University's computational strengths to enable students to explore technical and cultural aspects of computation as it relates to architecture, design, and the built environment. Ranging from the applied to the speculative, and from the poetic to the critical, the work of the program illuminates subjects such as artificial intelligence, architectural robotics, digital fabrication, simulation, computational geometry, responsive environments, and shape grammars —as well as embodied and tangible forms of design interaction, fabrication and expression.

The program is well suited to highly inquisitive applicants from a variety of fields who are interested in challenging disciplinary boundaries, developing a unique research agenda, and acquiring the conceptual and technical skills to explore computational design at the highest levels of creativity and scholarly rigor.

Curriculum
Interdisciplinary by nature, the MSCD curriculum is designed to provide a strong theoretical and technical foundation in computation while offering students flexibility to create unique paths through the School of Architecture's and Carnegie Mellon University's broad knowledge space, offered by leading educators across fields. Students develop a thesis of publishable quality, often through the development and implementation of experimental design systems, algorithms, computational artifacts or environments, or novel theoretical perspectives.

Resources
Students in the MSCD program are housed in the Computational Design (CoDe) Lab, a beautiful double-height space strategically located in the Margaret Morrison building's fourth floor. MSCD students work closely and collaboratively with students and faculty from neighboring SoA programs such as Building Performance and Diagnostics, Sustainable Design, and Advanced Architectural Design, as well as with those in the Schools of Art, Drama, HCI, and Design. For more info and news visit http://code.arc.cmu.edu/. In addition, MSCD students have access to the School of Architecture and Carnegie Mellon University's world-class research environment and facilities, including state-of-the art Design Fabrication and Applied Architectural Robotics laboratories. For more info on the dFab laboratory, visit https://soa.cmu.edu/dfab
Graduation requirements
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSCD program must satisfy the following:

- Complete a minimum of 144 units of course work including a 36-unit thesis for graduation.
- Complete the sequence of three research seminars and 36 units of thesis described in the curriculum chart (see below).
- Satisfy the thesis submission requirement as specified in this document and in the following link: [https://soa.cmu.edu/ms-thesis-submission/](https://soa.cmu.edu/ms-thesis-submission/)

Residency requirement
The MSCD is a two-year program with a minimum residency of three (3) academic semesters with full-time status (minimum 36 units per semester). Highly proficient candidates may request waivers for certain course requirements during the admission process.

Applying to the PhD Program from the MSCD
MSCD students who wish to be considered for admission into the PhD program in Computational Design (PhD-CD) should apply through the School's online application system by the appropriate deadline. While applicants from the MSCD program are not required to submit new transcripts or GRE/TOEFL scores, including an updated statement of purpose and a letter of support from a Computational Design faculty member is strongly encouraged. See more information about the PhD program in Computational Design (PhD-CD) at [https://soa.cmu.edu/phdcd](https://soa.cmu.edu/phdcd).
# MSCD Curriculum

## Master of Science in Computational Design

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Credits</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year</td>
<td>Fall</td>
<td>12</td>
<td>Research (12 units)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>48-727 Inquiry into Computational Design (8)</td>
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<td></td>
<td>48-620 Situating Research (3)</td>
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<tr>
<td></td>
<td>Spring</td>
<td>36</td>
<td>Research (36 units)</td>
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<td></td>
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<td></td>
<td>48-715 Pre-Thesis I (6)</td>
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<td>Computation: C 1 (9–12 units)</td>
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<td>C 1 Students with prior programming background are advised to take Fundamentals of Programming and Computer Science, or a more advanced programming course such as Principles of Imperative Computation, based on C 1.</td>
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<tr>
<td></td>
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<td></td>
<td>Selective Core: SC 1 (9–24 units)</td>
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<td></td>
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<td></td>
<td>SC 2 (9–12 units)</td>
</tr>
<tr>
<td>2nd Year</td>
<td>Fall</td>
<td>36</td>
<td>Research (36 units)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>48-716 Pre-Thesis II (6)</td>
</tr>
<tr>
<td></td>
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<td>Computation: C 3 (9–12 units)</td>
</tr>
<tr>
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<td>C 3 Advanced computing course such as Principles of Imperative Computation, or a more advanced programming course such as Principles of Imperative Computation, based on C 1.</td>
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<td>Selective Core: SC 3 (9–24 units)</td>
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<td>SC 4 (9–12 units)</td>
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<td>SC 5 (9–12 units)</td>
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<td>SC 6 (9–12 units)</td>
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<tr>
<td>3rd Year</td>
<td>Spring</td>
<td>36</td>
<td>Research (36 units)</td>
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<td></td>
<td></td>
<td>48-719 Thesis (36 units)</td>
</tr>
</tbody>
</table>

## Program Description:

The Master of Science in Computational Design mobilizes Carnegie Mellon's computational strengths to give students the tools to explore new design opportunities and critical perspectives at the intersection of architecture, design and computation. In spheres ranging from the applied to the speculative, and from the poetic to the critical, students in the program investigate subjects such as artificial intelligence, architectural robotics, digital fabrication, simulation, computational geometry, responsive environments and shape grammars—as well as embodied and tangible forms of design interaction, fabrication and expression.

As a research program, the MSCD adopts a broad view of design technologies as vehicles of design inquiry, as cultural artifacts, and as worthy subjects of critical analysis and debate. The program is well suited to highly equivotative applicants from a variety of fields who are interested in challenging disciplinary boundaries, developing a unique research agenda, and acquiring the conceptual and technical skills to explore computational design at the highest levels of scholarly rigor and creativity. The curriculum comprises three areas:

1. Research: A sequence of required seminars exploring Computational Design as an arena of creative research and practice, and to the methods of academic inquiry needed for the formulation of research projects.
2. Computation: A required sequence of courses providing a solid technical understanding of computational concepts and techniques. The precise choice and sequence is based on each student's prior skill level and the nature of their research project. A list of recommended courses is available upon request.
3. Selective Core: The Selective Core gives students the flexibility to develop an emphasis based on their specific research interests and strengths. Any courses taught by Computational Design faculty count as Selective Core, as well as approved extra-departmental courses.

## Program Requirements:

In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSCD program must satisfy the following:

- Students must complete a minimum of 144 units of course work including a 36 unit Thesis for graduation.
- Students must complete a minimum residency of three (3) academic semesters with full-time status (minimum 30 units per semester).
- All course substitutions must be approved by the program track chair.
- Students with strong programming/mathematical skills may apply for advanced standing in the program.

2021.08.22
Master of Science in Sustainable Design

Program Description
The Master of Science in Sustainable Design is a post-professional research-based graduate program focused on enabling innovative design solutions through deep technical expertise and critical thinking. The MSSD offers an integrated education that strives to prepare its graduates for careers that will reshape the built environment. The MSSD program engages socio-ecological and environmental issues related to architecture and urbanism at the intersection of design, building science and technology. This program welcomes applications from both research and practice-oriented candidates.

MSSD’s intensive curriculum is structured as a combination of critical thinking inquiry with technical skills and design-research classes based in the School of Architecture and offered across Carnegie Mellon University. The curriculum stresses the importance of design and technology integration, value of total-building performance, human-centered design, large scale ecology and natural systems knowledge within the design processes. Classes provide both depth and breadth, while the culminating Synthesis Thesis Project allows each individual student the opportunity to narrow his or her research focus to a topic of personal and professional interest.

The MSSD Advanced program welcomes applications from both research and practice-oriented candidates and features a four-semester (two academic years) curriculum. For candidates with extensive professional experience in design practice of eight years or more we offer the MSSD Applied program, which can be completed in three semesters.

Residency Requirement
The MSSD Advanced program is a two-year (4 semesters) program with a minimum residency of three (3) academic semesters at full-time status (36 units). The MSSD Applied program is a 1.5-year (3 semesters) program with a minimum residency of two (2) academic semesters at full-time status (36 units).

Graduation Requirements
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSSD program must satisfy the following:

- MSSD Advanced students must complete a minimum of 159 units of coursework.
- MSSD Applied or (G)AMP students must complete a minimum of 135 units of coursework.
- All MSSD students must take at least one (1) selective from each category as noted on the following chart, with a cumulative total of 36 units.
- All MSSD students are limited to a maximum of 54 units per semester.
- All course selectives and substitutions must be approved by the program Track Chair.
# MSSD Applied Curriculum

## Master of Science in Sustainable Design

### Prep:
- **Summer Online:** (3 units)
- **48-689 | Digital Skills Workshops:** (3)
- **Pre-Requisite:** (9 units)
- **48-315 | ES 1: Climate & Energy:** (9)

### 1 Fall 1st Year (45 units)

**Core:** (96 units)
- **48-743 | Intro to Ecological Design Thinking:** (6)
- **48-798 | HVAC & Power Supply for Low-Carbon Buildings:** (0 – 12)
- **48-733 | Environmental Performance Simulation:** (6)
- **62-225 | Generative Modeling:** (6)

**Selectives:** (9 – 18 units)**

### 2 Spring 1st Year (45 units)

**Core:** (18 units)
- **48-711 | Paradigms of Research in Architecture:** (6)
- **48-722 | Building Performance Modeling:** (6)

**Selectives:** (12 – 18 units)**
**Free Electives:** (15 – 18 units)

### Optional Summer: (3 Units)
- **48-700 | Practicum:** (3)
  - NB: F1 students must file for CPT

### 3 Fall 2nd Year (45 units)

**Core:** (9 units)
- **48-729 | Productivity, Health & the Quality of Buildings:** (9)

**Project:** (24 units)
- **48-732 | MSSD Synthesis:** (18)
- **xxx-xxx | Synthesis Support Course:** (6)

**Selectives:** (12 – 18 units)**

### Core Selectives*

MSSD students must take at least one (1) selective from each category, with a cumulative total of 45 units. MSSD students are limited to a maximum of 54 units per semester.

Changes to curricular offerings take place regularly. Visit the CMU Schedule of Classes for up-to-date information.

A full list of selectives is available from the track chair. The selective categories and pre-approved courses include:

**Category 1: Environmental Tools & Data Modeling**
- **48-703 | Intro to Urban Design Media:** (3)
- **02-275 | Fundamentals of Urban Design:** (3)

**Category 2: Environmental Law & Policy**
- **48-706 | Environmental Policy & Planning:** (3)
- **48-785 | LEED, Green Design & Building Rating in Global Context:** (3)

**Category 3: Sustainable Design & Development**
- **48-725 | Real Estate Design and Development:** (3)
- **48-702 | Zero Energy House:** (3)

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*20 August 2019*
# MSSD Advanced Curriculum

**MSSD – Advanced**  
Master of Science in Sustainable Design

## Prep:
- Summer Online: (3 units)  
  48-689 | Digital Skills Workshops (3)
- Pre-Requisite: (9 units)  
  48-315 | ES 1: Climate & Energy (9)

### 1 Fall 1st Year (45 units)

- **Core:** (96 units)  
  - 48-743 | Intro to Ecological Design Thinking (9)
  - 48-798 | HVAC & Power Supply for Low-Carbon Buildings (9–12)
  - 48-733 | Environmental Performance Simulation (9)
- **Selectives:** (9 - 18 units)**

## Program Description:
The Master of Science in Sustainable Design is a post-professional research-based graduate program focused on enabling innovative design solutions through deep technical expertise and critical thinking. The MSSD offers an integrated education that strives to prepare its graduates for careers that will reshape the built environment. The MSSD program engages socio-ecological and environmental issues related to architecture and urbanism at the intersection of design, building science and technology. This is a 4 semester program that welcomes applications from both research and practice-oriented candidates.

### 2 Spring 1st Year (45 units)

- **Core:** (18 units)  
  - 48-711 | Paradigms of Research in Architecture (9)
  - 48-722 | Building Performance Modeling (9)
- **Selectives:** (12 – 18 units)**
- **Free Electives:** (15 – 18 units)

## Program Requirements:
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSSD program must satisfy the following:
- Students in the 4 semester track (advanced) must complete a minimum of 109 units of course work with a minimum residency of three (3) academic semesters at full-time status (90 units).
- For AAPM students or candidates with greater than eight years of design practice experience this degree can be achieved in 3 semesters (39 credits) by completing a minimum of 109 units of course work with a minimum residency of two (2) academic semesters at full-time status (90 units).

### 3 Fall 2nd Year (45 units)

- **Core:** (9 units)  
  - 48-729 | Productivity, Health & the Quality of Buildings (9)
- **Project (18 Units)**
  - 48-732 | MSSD Synthesis (18)
- **Selectives:** (15 – 18 units)**
- **Free Electives:** (3 – 12 units)

### 4 Spring 2nd Year (24 units)

- **Project (24 Units)**
  - 48-732 | MSSD Synthesis (18)
  - xx-xxx | Synthesis Support Course (6)

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**Category 1: Environmental Tools & Data Modeling**
- 48-700 | Intro to Urban Design Media (F)
- 02-275 | Fundamentals of Cart Design (S)

**Category 2: Environmental Law & Policy**
- 00-396 | Environmental Policy & Planning (F)
- 48-715 | LEED, Green Design & Building Rating in Global Context (S)

**Category 3: Sustainable Design & Development**
- 48-725 | Real Estate Design and Development (F)
- 48-702 | Zero Energy House (S)

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20 August 2019
SoA STANDARDS, POLICIES & PRACTICES FOR GRADUATE PROGRAMS

Unless otherwise stated, and where specific and detailed declarations are provided by the School of Architecture, the Graduate Programs in the School adopts the standards, policies and practices stated in the prevailing Carnegie Mellon University Graduate Student Handbook ("The WORD") pertaining to academic advising, academic resources, curricular and enrollment issues, and academic rights and responsibilities. The WORD can be found online at: https://www.cmu.edu/student-affairs/theword/.

Admissions Review

Admissions are normally reviewed in the Spring Semester.

The Admissions and Enrollment Coordinator and Graduate Program Working Committee (GPWC) oversee admissions to all graduate programs. The Track Chair coordinates the review process for applications to their program and communicates all admission decisions to the GPWC. All applicants must complete the online application in full, and with all required supporting documentation. Information pertaining to application requirements, policies and procedures is available online at: https://soa.cmu.edu/graduate-admissions.

Multiple faculty members review every application. Exceptions to admissions requirements to any program are referred to the Committee. In cases when a decision is neither ascertained nor readily ascertainable, the application is then referred to the GPWC at large for review. Exceptions to admissions requirements to any program are also referred to the GPWC. The GPWC will decide on the outcome of the application based on a review of the completed application materials. Each applicant will be notified of the outcome by email from the Graduate Admission Coordinator.

For PhD students, positive decisions require at least one faculty agreeing to advise the applicant.

Student representatives in the Committee are excused from the review and decision-making process.
Academic Advising

Every master’s student is assigned an Advisor, typically the Track Chair of the respective master’s program. The Advisor and/or Track Chair guides a master's student throughout their academic study in the SoA.

PhD students are advised by a member of the PhD Program Committee with specific content knowledge aligned with the student’s Personal Statement.

Students may also seek advice from the GPEC, the Head of School and the other graduate program faculty as well as the Graduate Programs administrative staff.

Students are required to meet with their Advisor prior to each semester’s course registration to discuss matters such as course selections, course performance, and other academic matters, and periodically during the duration of the semester to report progress in courses, research, thesis, and other aspects of academic life. Students are expected to bring administrative matters such as course substitution and program transfers, to the attention of both the Advisor and the Track Chair in cases when they are different people.

Academic Resources

The University offers a range of academic resources, which are listed in the University Graduate Student Handbook (The WORD). These include Academic and Professional Development Seminars and Workshops, Teaching Support, intercultural communication, computing services and libraries.

Curricula And Enrollment Information

The University Graduate Student Handbook (The WORD) provides information pertaining to:

- Standards for Academic and Creative Life
- Privacy Rights for Students
- Academic Standards and Actions
- Cheating and Plagiarism Policies
- Academic Disciplinary Actions Overview

Privacy Rights Of Students

Every student at Carnegie Mellon University is protected by FERPA (Family Educational Rights and Privacy Act (20 U.S.C. § 1232g; 34 CFR Part 99) http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html. FERPA is a Federal law that protects the privacy of student education records.
Generally, schools must have written permission from the student in order to release any information from a student’s education record. However, FERPA allows schools to disclose those records, without consent, to the following parties or under the following conditions (34 CFR § 99.31):

- School officials with legitimate educational interest;
- Other schools to which a student is transferring;
- Specified officials for audit or evaluation purposes;
- Appropriate parties in connection with financial aid to a student;
- Organizations conducting certain studies for or on behalf of the school;
- Accrediting organizations;
- To comply with a judicial order or lawfully issued subpoena;
- Appropriate officials in cases of health and safety emergencies; and
- State and local authorities, within a juvenile justice system, pursuant to specific State law.

Schools may disclose, without consent, "directory" information such as a student’s name, address, telephone number, date and place of birth, honors and awards, and dates of attendance. However, schools must tell students about directory information and allow students a reasonable amount of time to request that the school not disclose directory information about them. Schools must notify students annually of their rights under FERPA. The actual means of notification, such as this student handbook, is left to the discretion of each school.

Access and review of a student’s records by students and university personnel are governed by the Public Law 93-380 “The General Education Provisions Act” and other relevant policies of Carnegie Mellon University, as stated in the University Graduate Student Handbook (The WORD).

Course Overload
There is a university policy for course overload, which applies to undergraduate and graduate programs alike: https://www.cmu.edu/hub/registrar/registration/course–overload.html

SoA has established a normal course load for each program. Students should check with their academic advisor, track chair, department head, or dean’s office for the definition of a normal course load. Individual colleges may have overload policies that are more restrictive; therefore, students should consult with their advisor when considering an overload.

Independent Study
Independent Study allows opportunities for students to pursue self-directed study with a faculty advisor pending written approval of the faculty member and the Track Chair for MA and MS students
or Committee Chair for doctoral students. Students who are not on an academic action are permitted
to take one independent study course of up to 18 units per semester with a CMU faculty member.
This limitation does not apply to 48792 Ph.D. Independent Study, 48793 Ph.D. Thesis, 48797 PhD
Dissertation Defense, 48811 Proposal Preparation, 48812 Thesis Preparation DPP, and other similar
courses.

**Student Leave and Return Policies**
The School of Architecture adopts the University’s student leave and return policies. For more
Student Leave and Return information, refer to:
https://www.cmu.edu/policies/student-and-student-life/student-leave.html and

**Withdrawal of a Degree**
The university reserves the right to withdraw a degree even though it has been granted should there
be discovery that the work upon which it was based or the academic records in support of it had
been falsified. In such a case, the degree will be withdrawn promptly upon discovery of the
falsification. The complete reference to this university policy is available at:

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**GRADING/EVALUATION**

**GRADING SCALE**

<table>
<thead>
<tr>
<th>Grading</th>
<th>Quality Points</th>
<th>Notes (as of Fall 1995)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Value</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>Minimum grade for passing a course for graduate students</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>0.0</td>
<td>Failure</td>
</tr>
<tr>
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<td>0.0</td>
<td>Conditional failure</td>
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<tr>
<td>S</td>
<td>Non-factorable</td>
<td>Satisfactory</td>
</tr>
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<td>P</td>
<td>Non-factorable</td>
<td>Passing</td>
</tr>
<tr>
<td>N</td>
<td>Non-factorable</td>
<td>Not Passing</td>
</tr>
<tr>
<td>O</td>
<td>Non-factorable</td>
<td>Audit</td>
</tr>
<tr>
<td>W</td>
<td>Non-factorable</td>
<td>Withdrawal</td>
</tr>
<tr>
<td>I</td>
<td>Non-factorable</td>
<td>Incomplete</td>
</tr>
<tr>
<td>AD</td>
<td>Non-factorable</td>
<td>Credit granted for work completed at another institution or by examination credit</td>
</tr>
</tbody>
</table>

**Pass/Fail**

Passing (P)/ Not Passing (N) A Grade of P counts towards graduation requirements but is not factored into the semester or cumulative Quality Point Average (QPA). The Graduate Program Working Committee has adopted the following additional requirements regarding P/N:

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Inside Arch</th>
<th>Outside Arch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Course</td>
<td>No P/N</td>
<td>No P/N</td>
</tr>
<tr>
<td></td>
<td>*C or Better</td>
<td>*C or Better</td>
</tr>
<tr>
<td>Selectives</td>
<td>No P/N</td>
<td>Yes P/N</td>
</tr>
<tr>
<td></td>
<td>*C or Better</td>
<td>*C or Better</td>
</tr>
<tr>
<td>Electives</td>
<td>Yes P/N</td>
<td>Yes P/N</td>
</tr>
<tr>
<td></td>
<td>C or Better</td>
<td>C or Better</td>
</tr>
<tr>
<td>48-704 MS INTERN</td>
<td>Yes P/N, credits count except AECM</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Notes: You must have the minimum credit hours for the degree and have a minimum cumulative QPA of 3.0 to graduate.

*Unless stated otherwise in the specific graduate program requirements.

Only one course per year can be taken P/N except as noted in specific graduate program requirements.

The university may overrule these requirements if it declares otherwise due to a pandemic or other unforeseen emergency.

Questions about grading for a specific course should be addressed to the instructor of the course in question. Graduate students with questions about Pass/Fail and Drop/Withdrawal should contact their Program Track Chair, or Graduate Program Director.

**University Policy on Grades**

Unless otherwise specifically declared, the School of Architecture adopts the University policy, which offers details concerning university grading principles for students taking courses, [https://www.cmu.edu/policies/student-and-student-life/grading.html](https://www.cmu.edu/policies/student-and-student-life/grading.html).

This policy covers the specifics of Assigning and Changing Grades (including Final and Mid-Semester grades, Incompletes and Conditional Failures), Grading Options (Audit and Pass/Fail), Drop/Withdrawals, Course Repeats, and defines the undergraduate and graduate Grading Standards. “Non-factorable” is not factored into the semester or cumulative Quality Point Average (QPA).

**Appealing Final Grades**

[https://www.cmu.edu/graduate/policies/appeal-grievance-procedures.html](https://www.cmu.edu/graduate/policies/appeal-grievance-procedures.html)

Final grades will be changed only in exceptional circumstances and only with the approval of the instructor and the department, unit or program. Grading is a matter of sound discretion of the instructor and final grades are rarely changed without the consent of the instructor who assigned the grade. The following circumstances are the unusual exceptions that may warrant a grade appeal: (a) the final grade assigned for a course is based on manifest error (e.g. a clear error such as arithmetic error in computing a grade or failure to grade one of the answers on an exam), or (b) the faculty or staff member who assigned the grade did so in violation of a University policy.

**Grades for Transfer Courses**


Carnegie Mellon University offers students the opportunity to take courses for credit through a cross-registration program (see Pittsburgh Council on Higher Education (PCHE) and Cross-registration below) and through the receipt of transfer credit from other accredited institutions.
The Carnegie Mellon University transcript will include information on such courses as follows: Carnegie Mellon courses and courses taken through the university's cross-registration program will have grades recorded on the transcript and be factored into the QPA. All other courses will be recorded on this transcript indicating where the course was taken, but without grade. Such courses will not be taken into account for academic actions, honors or QPA calculations. (Note: Suspended students may take courses elsewhere; however, they may receive transfer credit only if their college's and department's policies allow this.)

**GPA and QPA Graduation Requirements**
At a minimum, a student must attain a QPA of 3.0 in order to be granted a graduate degree. The GPEC must approve any exception.

**Academic Standing**
After midterm grades have been issued, students are advised to check their grades online and may receive a WARNING letter for achieving a grade below a minimum of B for any class identified on the program curriculum with an asterisk (*) to qualify for graduation OR a grade below a minimum of C in any course taken in any semester OR a semester quality point average of below 3.00. If any of these conditions are met, students are required to arrange a meeting with their Track Chair to discuss a plan for immediate improvement.

**Regular Reviews by Department**
The Graduate Program Working Committee holds a Grades Meeting at the end of each semester, after the semester grades have been issued. The purpose of this meeting is to review and monitor the academic progress of all graduate students. In this meeting, the Track Chair will present an oral report to the Graduate Program Working Committee along with oral reports by the Principal Advisor of each doctoral student. Any academic actions or recommendations developed are transmitted, in writing, to students and to the Head of the School by the Graduate Program Executive Committee, after the Graduate Program Grades Meeting.

In addition to the Grading Practices and Academic Actions stipulated by the University and College of Fine Arts, the Graduate Program in the School of Architecture has implemented the following School-level actions:

- **COMMENDATION** – For achieving a quality point average of 4.0 or above in any semester while carrying a full academic load of a minimum of 36 units AND comprising a minimum of four (4) courses, OR an 18-unit studio and a minimum of two (2) courses.

- **STUDIO COMMENDATION** – Studio commendations are given to students for excellence in design work and/or leadership during a particular semester. The studio professors teaching in that year select recipients at the semester grades meeting.
• **PROBATION** – For achieving a grade below a minimum of B in any course identified on each program curriculum with an asterisk(*) to qualify for graduation OR a grade below a minimum of C in any other course taken in any semester OR a semester quality point average below 3.00 AND when the Track Chair and Graduate Program Executive Committee determines that there is still a possibility for the student to improve their performance to meet requirements for graduation as stipulated in the respective program descriptions online. Academic probation may result in any scholarships, research assistantships and/or financial awards to be rescinded. Students on academic probation cannot be selected to receive awards. For a student on academic probation, this status will be automatically removed during the next academic review if the semester and cumulative QPA are 3.0 or better.

• **DROP FROM PROGRAM** – For achieving a PROBATION AND when the Track Chair and Graduate Program Executive Committee determines it is NOT likely that the student will be able to meet the requirements for graduation OR under extraordinary circumstances as determined by the faculty, you may be dropped without previously having been on probation. The student will be notified in writing and should meet with their Advisor and Track Chair as soon as possible to discuss their academic situation. The student will then meet with the Department Head. If a decision for removal from the program is made, the student will receive the decision in writing and may appeal the decision by sending a formal letter stating the basis for appeal to the Department Head. The student will have an opportunity to appeal a removal decision by the Department Head to the Dean of the College of Fine Arts.

Generally, sanctions resulting from an Academic Action (e.g. probation or drop) take effect immediately, regardless of whether an appeal is filed. In exceptional circumstances, however, the appropriate Dean of Graduate Students or the Provost may elect to hold sanctions in abeyance pending the resolution of an appeal. If the removal decision is not overturned, the student is not entitled to a refund of tuition or student fees incurred during the semester in which the appeal was being considered.

**Academic Integrity and Disciplinary Action**

Please review the University Policy on Academic Integrity (https://www.cmu.edu/policies/student-and-student-life/academic-integrity.html). The policy includes the University expectations around academic integrity and provides definitions of cheating, plagiarism, and unauthorized assistance.

A review of the University’s Academic Disciplinary Actions procedures (https://www.cmu.edu/student-affairs/theword/academic-discipline/index.html) is also recommended. These procedures outline the process for investigating, reporting, and adjudicating violations of the University Policy on Academic Integrity. The procedures also outline the appeal process.
Academic Rights And Responsibilities

Standard information pertaining to academic rights and responsibilities listed in the University Graduate Student Handbook (The WORD) cover the following:

- Degree attainment: achievement, timeline & format of requirements
- Financial Support
- Dissertation & Theses
- Graduate Student Concerns & Grievances
- All But Dissertation Policy
- Intellectual Property Policy
- Research
- Policy for Handling Alleged Misconduct in Research

Student Rights – Appeal and Grievances

Graduate students will find the Summary of Graduate Student Appeal and Grievance Procedures on the Graduate Education Resource webpage, https://www.cmu.edu/graduate/policies/appeal-grievance-procedures.html. This document summarizes processes available to graduate students who seek review of academic and non-academic issues. Generally, graduate students are expected to seek informal resolution of all concerns within the applicable department, unit or program before invoking formal processes. When an informal resolution cannot be reached, however, a graduate student who seeks further review of the matter is to follow the formal procedures outlined here. These appeal and grievance procedures shall apply to students in all graduate programs of the University. Students should refer to the department specific information in this handbook for department and college information about the administration and academic policies of the program. Additionally, students may confer with the graduate student ombudsman on issues of process or other concerns as they navigate conflicts.”

The School of Architecture adopts the University’s practices regarding student rights. Students who believe that they have been treated inappropriately are encouraged to raise their concern(s) with their Program Track Chair, the GPEC, Head of School or other designated people in their department, college or central administration. For further information about procedures that graduate students can pursue when addressing concerns and grievances, go to https://www.cmu.edu/graduate/policies/appeal-grievance-procedures.html.
Intellectual Property Policy, Restricted Research and Policy for Handling Alleged Misconduct in Research

The School adopts the University's policies pertaining to:

- Intellectual Property:
  https://www.cmu.edu/policies/administrative-and-governance/intellectual-property.html
- Restricted Research:
  https://www.cmu.edu/policies/research/restricted-research.html
- Handling of Alleged Misconduct in Research:
  https://www.cmu.edu/policies/research/handling-alleged-misconduct-in-research.html

Safeguarding Educational Equity

Assistance for Individuals with Disabilities
http://www.cmu.edu/education-office/disability-resources/

The Office of Disability Resources at Carnegie Mellon University has a continued mission to provide physical and programmatic campus access to all events and information within the Carnegie Mellon community. We work to ensure that qualified individuals receive reasonable accommodations as guaranteed by the Americans with Disabilities Act (ADA) and Sections 503 and 504 of the Rehabilitation Act of 1973. Students who would like to receive accommodations can begin the process through Disability Resources secure online portal or email access@andrew.cmu.edu to begin the interactive accommodation process.

Students with disabilities are encouraged to self-identify with the Office of Disability Resources and request needed accommodations. Any questions about the process can be directed to Catherine Getchell, 412-268-6121, getchell@cmu.edu.

Policy against Sexual Harassment and Sexual Assault
The University prohibits sex-based discrimination, sexual harassment, sexual assault, dating/domestic violence and stalking. The University also prohibits retaliation against individuals who bring forward such concerns or allegations in good faith. The policy can be viewed in its entirety at:
If you have been impacted by any of these issues, you are encouraged to make contact with any of the following resources:

- Office of Title IX Initiatives, http://www.cmu.edu/title-ix/, 412-268-7125, tix@cmu.edu
- University Police, 412-268-2323
- University Health Services, 412-268-2157
- Counseling & Psychological Services, 412-268-2922

Additional resources and information can be found at: https://www.cmu.edu/title-ix/resources-and-information/resources.html.

**Parental Accommodation Protocol**

The School of Architecture extends the Student Maternity Accommodation Protocol ([https://www.cmu.edu/graduate/programs-services/maternity-accommodation-protocol.html](https://www.cmu.edu/graduate/programs-services/maternity-accommodation-protocol.html)) to all parents with births or adoptions as amended below with brackets.

[All] students seeking any of the [Parental] Accommodations described below must register with the Office of the Dean of Student Affairs by contacting the office for an appointment by calling 412-268-2075.

The birth [or adoption] of a child is a significant life event that may require time away from academic pursuits for delivery and recovery from delivery of a newly born child [or integration of an adopted child]. [All] students whose anticipated delivery [or adoption] date is during the course of a semester may need to take time away from their academic responsibilities. [All] Carnegie Mellon students seeking time away are afforded two options as possible [Parental] Accommodation:

- **Short-Term Maternity Accommodation** – A short term absence from academic responsibilities up to a maximum of six (6) weeks. Short-Term Maternity Accommodation may be extended by two (2) weeks, for a total of eight (8) weeks, where a longer absence is medically necessary. Prior to the absence students must work with relevant university faculty and staff to adjust their course work, research, teaching and other academic responsibilities during the period of absence. This may include extensions of time to complete assignments, incomplete grades, and/or dropping courses, shifting research responsibilities and adjusting TA assignments. Students who take a Short-Term Maternity Accommodation will remain enrolled.

- **Formal Leave of Absence**– A formal leave of absence under the Student Leave Policy. Generally, the Student Leave Policy permits students to take a leave of absence for a full-semester, mini-semester, or for the time remaining in the semester during which the leave is taken. Students who take a Formal Leave of Absence drop all remaining courses for the
semester and are unenrolled for the semester. International students must consult with the Office of International Education before considering this option due to visa implications.

See https://www.cmu.edu/graduate/programs-services/maternity-accommodation-protocol.html for additional university resources. Students should also consult with their Track Chair either before or in conjunction with registering with the Office of the Dean of Student Affairs.

CONTACT: Holly Hippensteel, Associate Vice President for Community Standards and Diversity Initiatives

**Consensual Intimate Relationship Policy Regarding Undergraduate Students**

This policy addresses the circumstances in which romantic, sexual or amorous relationships/interactions with undergraduate students, even if consensual, are inappropriate and prohibited. The purpose of this policy is to assure healthy professional relationships. This policy is not intended to discourage consensual intimate relationships unless there is a conflicting professional relationship in which one party has authority over the other as in the policy.

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**Additional Department and University Policies**

**Enrollment Verification**
Enrollment Services is the only University office that can provide an official letter of enrollment, official transcript and enrollment verification. Enrollment verification can be requested online through The HUB at: https://www.cmu.edu/hub/registrar/student-records/verifications/enrollment.html.

**Change of Address**
Students are responsible for notifying the HUB of all address changes in a timely manner. Students will be held responsible for any failure to receive official college notices due to not having a correct address on file; F-1 students may jeopardize their status if address information is not kept current. Students can change their address using SIO, which is available via the HUB website: http://www.cmu.edu/hub/index.html.

**Computing and Technology Resources**
See Departmental Resources
“Grandfather” Policy
The School maintains a “grandfather” policy that assures that students can graduate under the policies in effect at the time of matriculation.

New Policies
When policies are changed it is because the school believes the new rules offer an improvement; graduate students will be informed of any changes. However, students currently enrolled in a degree program that is affected by a change in policy may choose to be governed by the older policy that was in place at the time of their matriculation so long as the change is curricular and not procedural. In case degree requirements are changed and certain courses are no longer offered, the school will try to find some compromise that allows those students to satisfy the original requirements.

Vacations and Time-off
Students with graduate assistantships are expected to continue with their research during academic breaks (including the Summer months) with the exception of the official university holidays. A complete list of the official university holidays can be found at the Human Resources website.

Due to federal regulations governing graduate student support, paid time off for personal business and vacations is not provided. A supported graduate student wanting to take a one-week break during one of the summer months in which they are receiving a stipend is expected to get approval for that break with their advisor and make up the work during the other three weeks of that month. Supported graduate students wishing to take longer periods of personal time off must do so without pay and must receive advanced approval from their research advisor a minimum of four weeks prior to the requested time off. The advisor must then notify the Graduate Program Administrator and Business Manager of this approval so that stipend adjustments can be processed.

Employment Eligibility Verification
If you are receiving a stipend, you are going to be a TA or you are planning to have a position with CMU then Employment Eligibility Verification is required.

Form I-9 must be completed within 3 business days of beginning work for any type of compensation (stipend or employment). Additional details are highlighted below.

To ensure compliance with federal law, Carnegie Mellon University maintains the Employment Eligibility Verification (I-9) Policy [pdf] covering the university’s I-9 and E-Verify requirements:

Every individual receiving a stipend from CMU or employed by CMU must comply with the I-9 Policy by completing the Form I-9 within three business days following the first day of stipend start date/employment.
Individuals who expect to work on a federally funded project are further responsible for submitting an E-Verify Processing Request Form to the Office of Human Resources.

For more information, please see CMU's Guidance for Completing the Form I-9 and E-Verify Requirements at CMU [pdf], or visit the Human Resources Service website to learn more about Form I-9 and E-Verify and to schedule an appointment to complete the Form I-9.

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Financial Support

Departmental Support
The tuition charges for each academic year, as published by the university, apply only to the Fall and Spring semesters. Summer tuition, whenever applicable, are additionally charged and are normally based on the number of academic units taken. The university also publishes estimated cost of living for a graduate student each year at: https://www.cmu.edu/sfs/tuition/graduate/index.html.

Exceptional applicants may be offered Merit Scholarships when they are admitted to the SoA. These scholarships will be processed at the beginning of each Fall and Spring terms and will continue in the following year(s) only if you maintain full time status, pay your balance according to the University’s schedule, and remain in good academic standing. The Merit Scholarship is valid only for the program to which you were first admitted, and cannot be applied to cover living or travel expenses, medical insurance, enrollment fees, or book and supplies for which you are responsible.

All enrolled students are automatically considered for an increase to the SoA Graduate Student Merit Scholarship in their second year. You will be notified at the end of your first year should you receive this increased award. Increased scholarships are awarded only to exceptional students based on the strength of their performance in the CMU program and demonstrated potential for advancing in their careers. Further funding can be obtained through paid Teaching and Research Graduate Assistantships, a limited number of which are available. See “Research Assistantship (RA) and Teaching Assistantship (TA)” below.

The School of Architecture does consider application requests for financial support. However, the award of graduate student support is dependent on several factors:

- Acceptance into one of the graduate programs in the school
- Needs of the school for Teaching Assistants
● Funds available to the school for various research projects and/or programs from within the university or from external sources

● Other budgetary resources of the school which may be allocated for graduate student support (only for Fall and Spring semesters)

**Research Assistantship (RA) and Teaching Assistantship (TA)**

A limited number of Research Assistantships (RA) and Teaching Assistantships are available to graduate students on a first-come and as-needed basis. Students should consult their Track Chairs and other SoA faculty for opportunities that build on previous strengths and experiences.

International students are reminded that they must comply with United States Citizenship and Immigration Services (USCIS) policies pertaining to their visa status. The Office of International Education is a resource for international students on this issue.

The Eberly Center for Teaching Excellence is a resource for TA and instructor training and included in the section Additional University Resources, Appendix A.

Graduate students are required to have a certain level of fluency in English before they can instruct in Pennsylvania, as required by the English Fluency in Higher Education Act of 1990. Through this Act, all institutions of higher education in the state are required to evaluate and certify the English fluency of all instructional personnel, including teaching assistants and interns. The full university policy can be reviewed at: [https://www.cmu.edu/policies/faculty/evaluation-certification-english-fluency-instructors.html](https://www.cmu.edu/policies/faculty/evaluation-certification-english-fluency-instructors.html). The fluency of all instructional personnel will be rated by the Language Support in the Student Academic Success Center to determine at what level of responsibility the student can TA.

In addition to administering the International Teaching Assistant (ITA) Test (a mandatory screening test for any non-native speaker of English), Language Support in the Student Academic Success Center which helps teaching assistants who are non-native English speakers develop fluency and cultural understanding to teach successfully at Carnegie Mellon. Visit the Student Academic Success website for additional information: [https://www.cmu.edu/student-success/](https://www.cmu.edu/student-success/).

**Additional Policies for PhD Students:**

A Ph.D. student who is fully funded (tuition and stipend) by the School during the Fall or Spring semesters is expected to contribute 20 hours of work per week. The work may involve serving as Research Assistant for project(s), or Teaching Assistant, or both. The nature of work and responsibilities will vary depending on the project(s) and courses.

The School has no obligation to provide RA-ships or TA-ships for self-supported Ph.D. students. Should these students be appointed as RA or TA, monetary compensation will be provided based on
the hourly rate established by the university, and up to 20 hours per week, unless otherwise agreed
with the faculty providing the support and approved by the PhD Program Committee.

Every effort will be made by the faculty to support and mentor those Ph.D. students who have an
interest in an academic career and to give them increasing teaching responsibilities as the ability of
the student develops. For Ph.D. students willing to and capable of being course instructors, teaching
a course is equivalent to serving as a TA for two courses. In this case, the student will be supervised
by a faculty advisor or mentor.

As a default, summer stipend support, if available, remains the same as the regular semester and
hours expected remain the same (i.e., 20 hours per week). The principle is that students will continue
to work on their own Ph.D. research work during summer. Any variation to this may be negotiated
between the student and the Principal Advisor.

Only students engaged in full 3 months of RA work in summer can be given two weeks off (paid).
Otherwise, the student will only be paid for their actual working time.

**Graduate Student Enrichment Fund**
The School of Architecture encourages students to advance their own academic, professional, and
career development. Limited funds are available to each Track-Chair on an annual basis to award on
a first-come basis to the students currently enrolled in their programs. The funds are intended to
offset the costs associated with student research projects including materials and equipment; special
studio travel; earning professional credentials; presenting papers, posters, research products or
creative work; and under special circumstances to supplement internships and research work for
others and student fellowships. The Funds may NOT be used to pay students to do faculty research
or other professional work, even if there is a perceived benefit for the students. Students should
contact their Track Chair to inquire.

**Outside Employment and Internships**
In general, outside employment is discouraged during the period of full-time graduate studies except
where specified by any given program. When employment is for an outside organization the student’s
Program Track Chair and the Head of the School must be notified in writing. It is the student’s
responsibility to ensure that such outside employment is allowed by the appropriate regulations (e.g.,
immigration rules, scholarship funding agency rules etc.).

In the case of an internship, it must meet a declared curricular or research objective. In such cases,
the internship is equivalent to either 3 units of required elective credit, or up to a maximum of 36 units
of independent study to fulfill a curricular requirement. Internships require approval of the Program
Track Chair. Internships may be taken at any time during the calendar year unless specified by the
program.
International students are required to consult with the Office of International Education for eligibility before seeking outside employment, an internship/co-op or signing an offer contract.

Graduate students wishing to do a Summer Internship are responsible to secure their position. International master’s and doctoral students interested in working off campus during the summer may apply for CPT status provided that they have completed one academic year of full-time enrollment and will be enrolled in the Fall semester.

All international graduate student internships must be in a field related to their program, have academic oversight, and students must be enrolled in an associated course that is counted toward the degree. All M.Arch internships must follow the NCARB AXP Guidelines outlined below. Student Interns will register for 3 units of 48-704 MS INTERN or 48-695 M.Arch Internship in the summer semester. MS students doing an internship will be coded INT and MS students remaining on campus to do research will be coded MMR. An Internship Plan Form must be submitted once the position is secured, and a Final Internship Report will be submitted once the Internship is complete for grading.

International students must consult with the Office of International Education for eligibility before seeking an internship or signing an offer contract. It is also recommended that international students review the CPT handout at: https://www.cmu.edu/oie/foreign-students/docs/cpt.pdf for detailed information about this employment authorization option.

PhD students that are required to be off campus to collect data for their research may be permitted to apply for CPT. Because the PhD program does not have a course requirement all other PhD students wishing a Summer Internship would apply for pre-completion OPT.

PhD students who will be doing an internship will be coded either INT or IDR. The INT program code follows the Summer All calendar. The IDR program code is used for students who will continue to be supported through the entire summer.

Many of the graduate programs at the SoA have been assigned CIP codes that are STEM-eligible. This means that in addition to one year of OPT, a student may apply for a 24-month STEM OPT Extension.

The Master of Advanced Architectural Design (MAAD), the Master of Architecture (M.Arch) and the Master of Science in Building Performance & Diagnostics (MSBPD) programs are assigned the CIP code – 04.0902, Architectural and Building Sciences/Technology. The Master of Science in Architecture Engineering Construction Management (MSAECM) is assigned the CIP code – 15.1501, Engineering/Industrial Management. The Master of Science in Computational Design (MSCD) is assigned the CIP code – 15.1302, CAD/CADD Drafting and/or Design Technology/Technician. The Master of Science in Sustainable Design (MSSD) is assigned the CIP code – 30.3301, Sustainability Studies.
The MSAECM program requires an internship, so CPT will enable an F1 student to complete the required internship. The other STEM-eligible grad programs do not require internship, therefore F1 students do not automatically qualify for CPT. To qualify for CPT, students must demonstrate that the 3-unit practicum counts toward the units required for graduation. For example, if a program requires 120 units to graduate, and the practicum would lift a student’s total of required courses to 123 units, the CPT does NOT count towards graduation. Hence the student is not eligible for CPT. A student may take more units than the required minimum, but the CPT must fit into the required minimum.

INTERNSHIP WHILE ENROLLED: for ALL F1 students that want to do an internship while enrolled in our grad programs in the fall and spring semesters, must comply with the following provisions.

- Complete the necessary forms available from the Office of International Education (OIE)
- Enroll in 48700 - Practicum for three (3) units
- Get a letter of commitment from a faculty member to supervise the practicum
- Bring the forms and an employment offer letter to the head of school for signature.
- The offer letter must comply with the NCARB Employment Requirements excerpted below. In simple terms NO unpaid internships - it is both illegal and unethical.
- At the completion of the internship, submit a report to one’s faculty adviser for grading.

INTERNSHIPS TOWARDS NCARB LICENSURE: For those pursuing architect licensure, the NCARB AXP Guidelines (https://www.ncarb.org/sites/default/files/AXP-Guidelines.pdf) describe Employment Requirements on page 17:

- To earn experience in setting A or work-related setting O opportunities including: “Other Work Experience Under Licensed Professionals,” “Design or Construction Related Employment,” and some scenarios in “Construction Work,” one must be employed.
- Unpaid internships are not eligible to earn experience hours with the exception of the approved Community-Based Design Center/Collaborative as defined in experience setting O.
- No experience may be earned outside of the U.S. or Canada, except at an organization engaged in the practice of architecture or an approved Community-Based Design Center/ Collaborative as defined in experience setting O.
- If the employment situation earns academic credit or is a requirement for a class, it can still qualify for AXP hours. Only employment situations qualify for AXP in this condition. The experience needs to be in compliance with the employment requirement and submitted as per the AXP rules.
Visiting Students, Scholars and Fellows

Visiting students, scholars and fellows supported by outside funding sources who wish to undertake postgraduate or non-matriculating academic work at the School of Architecture may do so at the discretion of the Head of the School, and may be required to provide an amount equal to the current graduate student tuition to the School on a semester by semester basis.

University Information on Finance and Financial Aid

The “Graduate Student Financial Aid Guide” provides detailed and useful information regarding the following:

- Financial Aid Application Process
- Loan Eligibility
- Fellowships and Scholarships Office (FSO)
- Tuition Payment Plans (TMS)
- Student Employment
- Summer Stipend Payment Options
- Tax Status of Graduate Student Awards
- Tuition Remission
- And more....

Detailed information can be found online at:

https://www.cmu.edu/graduate/financial-assistance/index.html and

Office of the Dean of Students Emergency Support Funding

Graduate students who find themselves in need of immediate funds for emergency situations should contact the Office of the Dean of Students (see Appendix A), www.cmu.edu/student-affairs/index.html, to inquire about the types of emergency funding available to enrolled students.
Appendix A

2021-2022

Highlighted University Resources for Graduate Students and The WORD, Student Handbook