



2023-2024 PhD STUDENT HANDBOOK

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WELCOME

Omar Khan, SoA Head

I'd like to welcome you to the School of Architecture's Graduate School.

The SoA Graduate School offers seven masters programs, a doctorate of design and four 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. This provides you a unique opportunity to engage in the multiple ways design and research can overlap. Our aim is to provide you with the latest technological competencies as well critical understanding of the political, social, economic and cultural contexts within which architecture performs. Our teaching is interdisciplinary, helping you untap your creativity and providing you the necessary skills to practice architecture and its related professions in the future. We are committed to equity and inclusiveness and look forward to helping you succeed in your studies.

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 Vision

Carnegie Mellon University will have a transformative impact on society through continual innovation in education, research, creativity, and entrepreneurship.

CMU Mission

<https://www.cmu.edu/about/mission.html>

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 (MSAECM) (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 four 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 PhD 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.

<https://www.cmu.edu/policies/student-and-student-life/doctoral-student-status.html>

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 MELLON 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 ombudsperson, 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:

<https://www.cmu.edu/policies/student-and-student-life/doctoral-student-status.html>

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.

2023-2024 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. See below for a summary of dates:

Fall 2023 Semester (F23)

Date	Day	Event
August 28	M	Semester & Mini-1 Classes Begin
September 1	F	Mini-1 add, audit & tuition adjustment drop deadline (1)
September 4	M	Labor Day; No Classes & University Closed
September 11	M	Semester add, audit & tuition adjustment drop deadline (1)
September 20	W	Mini-1 drop deadline; withdrawal grade assigned after this date (2)
October 2	M	Mini-1 Pass/no pass & withdrawal deadline (3)
October 2	M	Mini-1 Faculty Course Evaluations open
October 9	M	Semester drop deadline; withdrawal grade assigned after this date
October 13	F	Mini-1 Last Day of Classes
October 13	F	Mini-1 voucher election deadline (4)
October 13 - 14	F-Sa	Family Weekend
October 14	Sa	Mini-1 Exams
October 14	Sa	Mini-1 Faculty Course Evaluations close
October 16 - 20	M-F	Fall Break; No Classes
October 23	M	Mini-2 Classes Begin
October 23	M	Mid-Semester & Mini-1 grades due by 4 pm
October 27	F	Mini-2 add, audit & tuition adjustment drop deadline (1)
November 7	T	Democracy Day; No Classes, except Evening classes after 5 pm will still meet
November 11	Sa	Homecoming
November 13 - 17	M-F	Spring 2024 Registration Week
November 13	M	Semester pass/no pass & withdrawal deadline (3)
November 15	W	Mini-2 drop deadline; withdrawal grade assigned after this date (2)
November 22 - 24	W-F	Thanksgiving Break; No Classes
November 27	M	Mini-2 pass/no pass & withdrawal deadline (2)
November 27	M	Semester & Mini-2 Faculty Course Evaluations open
December 8	F	Semester & Mini-2 Last Day of Classes
December 8	F	Semester & Mini-2 voucher deadline (4)
December 11 - 12	M-Tu	Final Exams
December 13	W	Reading Day

December 14 - 15	Th-F	Final Exams
December 16	Sa	Reading Day
December 17	Su	Final Exams
December 18	M	Make-Up Final Exams
December 18	M	Semester & Mini-2 Faculty Course Evaluations close
December 20	W	Final Grades Due by 4 pm
December 23 - 2	Sa-Tu	Winter Break; University Closed
January 8	M	Fall Deans' Lists Posted

**Spring 2024 Semester
(S24)**

Date	Day	Event
January 15	M	Martin Luther King Day; No Classes
January 16	Tu	First Day of Class
January 22	M	Mini-3 add, audit & tuition adjustment drop deadline (1)
January 29	M	Semester add, audit & tuition adjustment drop deadline (1)
February 7	W	Mini-3 course drop deadline; withdrawal grade assigned after this date (2)
February 19	M	Mini-3 pass/no pass & withdrawal deadline (3)
February 19	M	Mini-3 Faculty Course Evaluations open
February 26	M	Semester course drop deadline; withdrawal grade assigned after this date (2)
March 1	F	Mini-3 Last Day of Classes
March 1	F	Mini-3 voucher deadline (4)
March 2	Sa	Mini-3 Exams
March 2	Sa	Mini-3 Faculty Course Evaluations close
March 4 - 8	M-F	Spring Break; No Classes
March 11	M	First day of Mini-4 Classes
March 11	M	Mid-Semester & Mini-3 grades due by 4 pm
March 12	T	Summer 2024 Registration Opens
March 15	F	Mini-4 add, audit & tuition adjustment drop deadline (1)
April 1	M	Semester pass/no pass & withdrawal deadline (3)
April 3	W	Mini-4 course drop deadline; withdrawal grade assigned after this date (2)
April 11 - 13	Th-Sa	Spring Carnival; No Classes
April 15 - 19	M-F	Fall 2024 Registration Week
April 15	M	Mini-4 pass/no pass & withdrawal deadline (3)
April 15	M	Semester & Mini-4 Faculty Course Evaluations open
April 26	F	Last Day of Classes
April 26	F	Semester & Mini-4 voucher deadline (4)
April 29 - 30	M-Tu	Final Examinations
May 1	W	Reading Day

May 2	- 3	Th-F	Final Examinations
May 4	- 5	Sa-Su	Reading Days
May 6		M	Final Examinations
May 6		M	Semester & Mini-4 Faculty Course Evaluations close
May 7		Tu	Make-Up Final Examinations
May 8		W	Graduating Final Grades Due by 4 pm
May 12		Su	Commencement
May 14		Tu	Final Grades Due by 4 pm
May 21		Tu	Spring Deans' Lists Posted

Spring 2023 Semester

Date	Day	
January 16	M	Martin Luther King Day; No Classes
January 17	Tu	First Day of Class

March 3		F	Mini-3 Last Day of Classes
March 4		S	Mini-3 Exams
March 6	- March 10	Su	Spring Break; No Classes
April 13	- April 15	Th-S	Spring Carnival; No Classes
April 28		F	Last Day of Class
May 1	- May 2	M-Tu	Final Examinations
May 3		W	Reading Day
May 4	- May 5	Th-F	Final Examinations
May 6	- May 7	Sa-Su	Reading Days
May 8		M	Final Examinations
May 9		Tu	Makeup Final Examinations
May 11		Th	Graduating Final Grades Due
May 14		Su	Commencement
May 16		Tu	Final Grades Due by 4 pm

DEPARTMENTAL INFORMATION

Departmental Personnel

A complete listing of all SoA faculty and staff can be found at: <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, 412-268-1905.

Kai Gutschow, PhD, Associate Head for Design Ethics, responsible for coordinating the SoA' 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.

Alycia Barney, Financial Assistant, is responsible for day-to-day financial transactions, including reimbursable expenses. Office in: CFA 201, abarney@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.

Peter DePasquale, 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, pdepasqu@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/dfab> Links to an external site.. Shop & DFab in: MM C4, thritz@andrew.cmu.edu, 412-268-8520.

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, rja2@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.

Christi Daner, Marketing & Outreach Manager, is responsible for external communications, including alumni outreach and publicity for events and opportunities at the school. Office in: CFA 201, cdanner@andrew.cmu.edu.

Todd Luckey, Office Assistant, is responsible for the administration of the SoA office. He 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, tluckey@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

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.

Alison Petrucci, Graduate Student Advisor, assists graduate students in all programs in registering for their class schedules and all official actions related to registration and transcripts. Assists with course related paperwork and serves as liaison with the office of international education (OIE) for enrolled students. apetrucc@andrew.cmu.edu

Lynn Karawatani, Liaison Librarian to the School of Architecture. She is available for individual appointments and research help, administers the Architecture Archives, and maintains the Architecture Research LibGuide (<https://guides.library.cmu.edu/architecture>). Office in: Hunt 302, lkawatana@andrew.cmu.edu.

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), vimartinez@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. 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. 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 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.

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 large-format color inkjet plotters, 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.

SoA Media Center

Equipment specifications and policies for the SoA media center can be found here: <https://tech.soa.cmu.edu/facilities/mediacenter.html>.

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 <https://www.library.cmu.edu/services/techlending>.

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.

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 <https://soa.cmu.edu/calendar>. 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.

DOCTORAL DEGREE COMPLETION AND CERTIFICATION

SoA Doctoral Program Requirements

The following requirements are common to the different PhD programs offered by the SoA. Specific details pertaining to each 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/>

Standard Degree Requirements & Degree Certification

Carnegie Mellon graduate students are expected to complete their degree requirements within the standard length of time for their program of study as outlined in the relevant Graduate Student Handbook. Standard program lengths for graduate students vary significantly – ranging from two semesters for some full-time master’s programs to several or more years for doctoral programs. Upon completion of the graduate program degree requirements, the degree will be certified by the student’s academic program in the semester in which the student completes the requirements.

Residency Requirement and Limits

Related University policy regarding “Time to Degree” at:

<https://www.cmu.edu/policies/student-and-student-life/doctoral-student-status.html>

Students will complete all requirements for the Ph.D. degree within a maximum of ten calendar years from original matriculation as a doctoral student, or less if required by a more restrictive department or college policy. Once this time-to-degree limit has lapsed, the person may resume work towards a doctoral degree only if newly admitted to a currently offered doctoral 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, defer the lapse of All But Dissertation status for a period commensurate with the duration of that interruption. Students, who are pursuing the Ph.D. 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.

Program of study

Students seeking guidance about their program of study and degree requirements should consult with their academic advisor and/or appropriate associate dean.

Financial aid and student account

Students are expected to make normal progress toward their degree in order to graduate within the standard timeframe for their program of study. Under U.S. Federal Title IV regulations, student eligibility for federal financial aid is contingent upon enrollment in and successful completion of courses that are counted as credit toward their current degree program. To receive the maximum amount of federal financial aid for which they may be eligible, students must enroll each semester in at least 36 units that count toward their current degree level. (See separate guidance regarding integrated degree completion.)

Students should consult with their designated college liaison in The HUB regarding billing and financial aid, particularly for early completion, longer than-standard completion, or integrated undergraduate and master's degree programs.

International students

Immigration status for students in F-1 and J-1 non immigrant status is tied to making normal progress toward completing degree requirements. Therefore, F-1 and J-1 students who are considering completing their degree requirements early, anticipating longer-than-standard completion, or moving from an undergraduate to a graduate student classification (integrated undergraduate-graduate study) should consult with their designated advisor in the Office of International Education (OIE) to ensure compliance with immigration regulations.

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.

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:

- 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 graduate 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.

PHD PROGRAMS

Carnegie Mellon University is recognized for outstanding contributions to science, technology, management, policy and the fine arts. The School of Architecture builds on a tradition of interdisciplinary study. Our faculty's diverse set of backgrounds and commitment to professional practice and scholarly research make for a rich learning experience. Our graduates hold positions in innovative design practices, research organizations, federal and municipal governments, the building and manufacturing industries, and at leading universities both in the US and abroad. Our programs reflect a commitment to excellence. Students with motivation and ability receive an outstanding educational opportunity at Carnegie Mellon University's School of Architecture.

Doctor Of Philosophy Degree Program Offerings

The School of Architecture offers the Doctor of Philosophy degree in four (4) areas of concentration:

- Ph.D. in Architecture-Engineering-Construction Management [PhD-AECM] (jointly offered with Civil & Environmental Engineering)
- Ph.D. in Building Performance & Diagnostics [PhD-BPD]
- Ph.D. in Computational Design [PhD-CD]
- Ph.D. in Architecture [PhD-Arc]

Each Ph.D. program has a Track Chair who is a full-time faculty in the School of Architecture with responsibility for the program curriculum (and any changes thereof), admissions as well as serving as the advisor to students with regard to matters pertaining to doctoral study in their respective program.

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

Overview

Work towards a Ph.D. degree is divided into three phases, with indicative nominal duration: Course Work and Candidacy (one to four semesters), Thesis Proposal (one to two semesters), and Dissertation (two to four semesters).

In the first phase, students take courses on the tools, concepts, and methods that characterize their area of concentration. The candidacy qualifying examination is normally taken after the student has completed all coursework requirements as stipulated in the respective program concentration curricula. This phase ends when a student passes the qualifying examination, whereupon a student is deemed a doctoral candidate.

In the thesis proposal phase, the student completes the preliminary research needed to plan a course of action leading to a successful dissertation on a selected topic. The thesis proposal must be publicly defended.*

This phase ends when the thesis proposal is accepted, whereupon the doctoral candidate is deemed to be in all but dissertation (ABD) status.

In the dissertation phase, the student writes a dissertation on the selected topic that represents a significant research accomplishment, makes a significant contribution to knowledge in the area of concentration, and includes material worthy of publication. The dissertation must be publicly defended.* The students will be awarded the degree upon successful completion of the defense and submission of the final dissertation document.

*In person defense meetings are preferred, but exceptions can be made at the discretion of the committee where this is not practical or possible.

Admission Into The Ph.D. Program

All applicants to the Ph.D. programs 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/gradapplication>.

The Graduate Program Committee 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.

Prior to official admission, all PhD students are required to meet in person, or by “live interaction” via telephone conference call, videoconference, voice-over-Internet, Web cam, or other “synchronous” communication systems that may be available at the time with their potential adviser(s).

Organization Of The Program

Areas of Concentration

Each student enters the program and works toward a Ph.D. in a particular area of concentration as stated [HERE](#) Curriculum requirements for each respective program are provided online at: <https://soa.cmu.edu/graduate> and in the Appendices.

Ph.D. in Architecture-Engineering-Construction Management Curriculum Chart

(PhD-AECM) Doctor of Philosophy in Architecture-Engineering-Construction Management

Description The PhD of Architecture–Engineering–Construction Management (PhD-AECM) Program is jointly offered by the School of Architecture and the Department of Civil & Environmental Engineering. The 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 pioneers and advanced leaders in management technologies and their application to the built environment.

Curriculum Minimum Curricular Requirements for PhD students with prior MS in related area

Course Requirements [^] (first 2 semesters)			Following Years... [§]	
	Fall Courses	Spring Courses	Independent Work (w/ Advisor)	Expected Effort**
Core (24 units)	12-794 Grad. Sem., Sec. D (0) [PN] 48-725 Real Est. Des. & Dev. (12)	12-794 Grad. Sem., Sec. D (0) [PN] 48-711 Para. Research in Arch.(12)	Game Plan	1 semester
Selectives (48 units)	Sustainability (12 units) Quantitative Modeling (12 units) From approved list on MS AECM curriculum or with substitution request	Management (12 units) Computational Skills (12 units) From approved list on MS AECM curriculum or with substitution request	↓ Qualification	1 semester
Electives (12 units)	6 or more units of courses or independent study related to your potential topic	6 or more units of courses or independent study related to your potential topic	↓ Proposal	1 semester
TOTAL (84 units)	42 minimum units	42 minimum units	↓ Dissertation	3 semesters

Minimum Curricular Requirements for PhD students with prior MS in non-related area

Course Requirements [^] (first 3 semesters)				Following Years... [§]	
	Fall Courses	Spring Courses	Fall Courses	Independent Work (w/ Advisor)	Expected Effort**
Prerequisites & Core (57 units)	12-411 Proj. Management for Construction (9 units) 12-794 Grad. Sem. (0) [PN] 48-725 Real Estate (12)	48-711 Paradigms of Research in Arch. (12) 12-794 Grad. Sem. (0) [PN]	48-767 Trans Think (12) 48-765 AECM Syn (12) or 48-792 PhD Ind. Stu.	Game Plan	1 semester
Selectives (48 units)	Sustainability (12 units) From approved list on MS AECM curriculum or with substitution request	Management (12 units) Computational Skills (12) From approved list on MS AECM curriculum or with substitution request	Quantitative Modeling (12 units) From approved list on MS AECM curriculum or with substitution request	↓ Qualification	1 semester
Electives (9 units)	3 or more units of courses or independent study related to your potential topic		6 or more units of courses related to your potential topic	↓ Proposal	1 semester
TOTAL (114 units)	36 min. units	36 min. units	42 units	↓ Dissertation	3 semesters

[^] *Residency* The minimum required full-time residency for all PhD programs in the School of Architecture is two (2) years. Full-time status (minimum 36 units per semester) is required up to and including the Proposal phase. Certain students are legally required to maintain Full-time status for the entire duration of the program (e.g. international students on a visa). See Graduate Student Handbook (available online) for additional details and regulations.

[§] *Game Plan, Qualification, Proposal, & Dissertation* For details and regulations about the Game Plan, Qualification, Proposal and Dissertation processes please see the Graduate Student Handbook (available online).

** *Expected Effort* is an approximation, and is not a Residency requirement.

UPDATED 03.01.2022

Ph.D. in Building Performance & Diagnostics Curriculum Chart

updated 1/26/16

Doctor of Philosophy in Building Performance & Diagnostics (PhD-BPD)

Description

The PhD in Building Performance & Diagnostics degree program is intended for practitioners, researchers, and educators in architecture and the building industry who wish to be leaders in advanced building technologies and their performance.

Curriculum

% For details on Residency requirements see Page 2.

YEAR 1		Fall	Spring
General 6 units			48-711 Paradigms of Research in Architecture (6)
Core 21 units	48-722 Building Performance Modeling (12)		48-723 Performance of Advanced Building Systems (9)
Core Selectives 21 units	CORE SELECTIVES* (Fall or Spring)		
Computing/ Alternatives 18 units	Recommended computation courses (Fall or Spring) 15-110 Principles of Computing (10) 15-121 Introduction to Data Structures (10)		
Open Selection 9 units	OPEN SELECTION*** (Fall or Spring)		

* Core Selectives are courses that are accepted as fulfilling the requirement of showing proficiency in aspects of BPD. Please see (page 3) of MSBPD Curriculum for a list of approved Core Selective options.

** Computing is not required, but is recommended for those intending to do a PhD in the area of performance simulation. Students may substitute these Computing units with a Selective or Elective, subject to approval by the PhD-BPD Track Chair.

*** See (page 2) of MSBPD Curriculum for notes on Open Selection options.

YEAR 2		Fall	Spring
Core 24 units	90-711 Empirical Methods for Public Policy & Management (12) †		90-722 Management Science I: Optimization & Multi-Criteria Methods (6) † 90-760 Management Science II: Decision Risk Modeling (6) † 48-721 Building Controls & Diagnostics (12)
Electives 15 units	ELECTIVES (Fall or Spring)		

† Select 90-711, or combine the 90-722 and 90-760 courses for a total of 12 units

All course numbers/titles and their schedules may be subject to change. For additional and up-to-date information on these and other course offerings (course descriptions, schedules, instructors, etc.) please visit the University's Schedule of Classes (SOC) webpage at: <www.cmu.edu/hub/courses/soc.html>.

Ph.D. in Computational Design Curriculum Chart

PhD-CD

Doctor of Philosophy in Computational Design

Computational Design is the discipline concerned with computational approaches to problems in design — whether these relate to creation, presentation, analysis, evaluation, interaction, embodiment, making or just aesthetic expression, albeit for real or imagined application, both perceived and conceived.



Requirements	Year 1		Year 2 onwards
<p>English Language Demonstrable proficiency in the English language</p> <p>Residency The minimum required full-time residency for the PhD program in the School of Architecture is two years. Students who have graduated from the MS-CD program can count one year towards the minimum residency period.</p> <p>Full-time Enrollment Students are required to be enrolled full-time up to the successful completion of the qualifier phase (including all required coursework). Some students are legally required to maintain full-time status for the entire duration of the program, for example, international students on a visa. See <i>Graduate Handbook for rules and regulations</i>.</p>	<p>Research 48-727 <i>Inquiry into Computation, Architecture and Design</i> (9) Students who have previously and successfully taken either of these courses can claim a waiver of this requirement. Should either of these courses not be offered, students may select a suitable alternative, e.g., 48-711 <i>Research Methods and Paradigms in Architecture</i>.</p>	<p>Research 48-746 <i>Shape Machine</i> (9) Advanced computation course based on student's area of research (9-12)</p>	<p>Every doctoral student is required to demonstrate ability for research prior to candidacy by completing 48 units minimum of satisfactory independent research Students who enter the program after completing the MS-CD program may consider their Master thesis to be equivalent to 36 units of satisfactory research provided that they attained a grade of B+ or better</p> <p style="text-align: center;">↓ <i>Game Plan</i></p> <p>The <i>game plan</i> specifies the student's chosen area of concentration and an abstract of scope of work within that area and the list of courses taken. Each member of the student's advisory committee signs off on the game plan.</p> <p style="text-align: center;">↓ <i>Qualifier</i></p> <p style="text-align: center;">↓ <i>Proposal</i></p> <p style="text-align: center;">↓ <i>Thesis Defense</i></p>
	<p>Computation 15-122 <i>Principles of Imperative Computation</i> (10) Students who have previously and successfully taken 15-122 can claim a waiver from this requirement. Each student in the PhD-CD Program must take an advanced computation course. No waiver will be granted.</p>	<p>Computation Advanced computation course based on student's area of research (9-12)</p>	
	<p>Core <i>Selectives</i> (24) Selective core courses provide students with proficiency in various aspects of computation that might relate to design. These are selections from a combination of courses offered by School of Architecture Computational Design faculty and elsewhere, for example, from the School of Design, Department of Civil and Environmental Engineering, Department of Mechanical Engineering, School of Computer Science, Human Computer Interaction Institute, Robotics Institute, etc. See the <i>Master of Science in Computational Design curriculum</i>.</p>	<p>Core <i>Selectives</i> (24)</p>	

Ph.D. in Architecture Curriculum Chart

PhD-Arch

Doctor of Philosophy in Architecture

This program advances critical spatial, humanistic, and social scientific perspectives on the built environment, with focus areas including spatial and environmental justice, urban and architecture history, digital humanities, and community centered methods of research and design.

<p>REQUIREMENTS</p> <p>Residency The minimum required full-time residency for the PhD program in the School of Architecture is two years.</p> <p>English Language Demonstrable proficiency in the English language</p> <p>Full-time Enrollment Students are required to be enrolled full-time up to the successful completion of the qualifier phase (including all required coursework).</p> <p>Some students are legally required to maintain full-time status for the entire duration of the program, for example, international students on a visa.</p> <p><i>See Graduate Handbook for rules and regulations.</i></p>	YEAR 1		<p>Year 2 onwards</p> <p>Every doctoral student is required to demonstrate ability for research prior to candidacy by completing 48 units minimum of satisfactory independent research.</p> <p>Game Plan The game plan specifies the student's area(s) of concentration, reading lists within each area, an abstract of scope of work, and the list of courses taken. Each member of the student's advisory committee signs off on the game plan.</p> <p>Qualifier</p> <p>Proposal</p> <p>Dissertation and thesis Defense</p>
	<i>Fall</i>	<i>Spring</i>	
	GENERAL (18)		
	48-620: Situating Research (3) 48-792: PhD Independent Study (6-9)	48-792: PhD Independent Study (6-9)	
THEORY AND METHODS (18) Students can select from these or other relevant courses (at SoA or other units), in conversation with their advisors.			
48-634: Architectural Theory and Contemporary Issues (6-9) 48-699: Environmental injustice, racism, and unfreedom (3) 48-750: Histories of Urban Design (9)	48-641: Modern Architecture and Theory (9) 48-711: Paradigms of Research in Architecture (9) 48-712 Issues of Global Urbanization (Variable)		
THEMATIC SELECTIVES (42-48) Students can select courses on a range of themes relating to their research (including race and space, environmental humanities, histories of the built environment, urbanization etc.). These could be selected from courses offered by the School of Architecture, School of Design, Department of History, Heinz College or other units at CMU or at the University of Pittsburgh.			
Selectives	Selectives		

Advisory Committee, Qualifying Examination Panel, and Doctoral Committee

Upon admission, each Ph.D. student will be assigned an advisor (based on the student's research interest), who will be the Principal Advisor of the student. The Principal Advisor, who must be a full-time faculty of the School of Architecture, is responsible for all academic and administrative actions that become necessary during the course of study. The student, in consultation with their Principal Advisor, is responsible for selecting an Advisory Committee. This is normally done after completing all required coursework.

The Advisory Committee must be composed of at least three faculty members. The Principal Advisor will chair the Advisory Committee. One of the members of the Advisory Committee must be external to the School of Architecture.

Students may request to change the composition of the Advisory Committee at any time during the course of study. Such requests must be made in writing to the PhD Programs Committee and will be reviewed and subject to approval by the Committee.

For the Qualifying Examination in Phase 1 of the Ph.D. Program, the Advisory Committee will form the Examination Panel (see [Qualification for Candidacy](#)).

For Phase 2: Thesis Proposal and Phase 3: Dissertation, the Advisory Committee will become the Doctoral Committee of the Ph.D. candidate (see [Phase II](#), [Phase III](#)).

PhD Game Plan

Once the Advisory Committee is formed, the student must submit a Game Plan to PhD Program Committee, which will include the following information:

- The names and affiliations of members of the Advisory Committee
- Specification of the chosen area of concentration and an abstract of scope of work within the area of concentration
- A list of courses taken (with grades achieved) and/or to be taken

The Game Plan must be signed by the student's Advisory Committee and submitted to the PhD Program Committee. The Game Plan (and any subsequent modifications thereof) must be approved by the PhD Program Committee. A sample of the Game Plan is provided in the Appendix B.

Program of Study

The minimum required full-time residency (minimum 36 academic units per semester) for the Ph.D. program in the School of Architecture is two years. Ph.D. students who have completed one or more

years in one of the School's Master programs may count one year of their Master study toward the Ph.D. residency requirement.

Students who are unable to complete any phase after twice the expected time may be asked to withdraw from the program. See also [Time to Degree](#).

Phase I: Course Work and Candidacy

The objective of this phase is to familiarize students with the tools, concepts and methods that characterize their area of concentration.

Phase 1 ends when a student passes the Qualifying Examination and is awarded doctoral candidate status.

Course Work Requirements

Students entering the program, unless otherwise approved, must complete the schedule of courses, and achieve the minimum total course work units for the selected area of concentration.

Students entering the program with a Master degree from Carnegie Mellon University or other institutions, through written petition, may be granted waivers for those courses already taken, and these may be counted towards the required total course work units; such courses will be assigned a Pass grade which is non-factorable toward the QPA calculation. However, the student's Advisory Committee may also require additional courses deemed necessary for the specific topic in the area of concentration.

Students, in consultation with their Advisory Committee, may also request for substitution of a required course to meet specific needs.

The student is responsible for submitting all requests for course waivers and substitutions and any other deviation from the published course work requirements to the PhD Program Committee through the Principal Advisor (and with their agreement) for approval. Any approved change must be given in writing and recorded by the student in their Game Plan accordingly. Regardless of any such change, the minimum full-time residency requirement must be fulfilled.

Qualification for Candidacy

The Ph.D. Qualifying Examination is administered once each semester.

The student's Advisory Committee will form the Qualifying Examination Panel. The objective of the Qualifying Examination is to provide evidence that the prospective candidate is:

- Familiar with basic concepts, techniques and methodologies that characterize the selected area of concentration

- Ready and able to apply this knowledge through independent and self-directed research on their own
- Ready to demonstrate an ability to deal with specialized as well as broader views related to the field of study

PRECONDITIONS – Prior to taking the Qualifying Examination, the student must:

- Complete all required coursework with a minimum overall QPA of 3.0.
- Submit an up-to-date Game Plan (see [PhD Game Plan](#)) to the Graduate Program Administration.
- Complete the equivalent of at least 36 units of independent research, which is certified by the student's advisor, and submitted to the PhD Program Committee to be kept in the records.

The Ph.D. Qualifying Examination comprises two parts:

WRITTEN EXAMINATION – In which a student is asked to provide written answers to questions posed by the Qualifying Examination Panel. Composition of the questions is to meet the following goals:

- Test the student's knowledge of the area of concentration in depth
- Cover both conceptual and technical issues
- Test the student's ability to address a wider range of issues and problems associated with the field of study

Each examiner poses one (1) question. The chairperson of the Qualifying Examination Panel compiles the questions, which are circulated to the School's PhD Program Committee for review and feedback is provided to the Examination Panel.

The student is given time, equivalent to one (1) day for each question, to provide answers, which are then reviewed by the Examination Panel.

ORAL EXAMINATION – This examination is conducted by the Examination Panel, based on answers submitted by the student for the Written Examination. It provides an opportunity for follow-up explorations within the spectrum of topics established through the courses taken by the student.

The oral examination is scheduled no later than two (2) weeks after the answers to the written examination have been received. The oral examination is attended by the Examination Panel and by, at least one faculty designated by the PhD Program Committee, to act as an observer of the proceedings. Only the Examination Panel is permitted to ask questions. At the end of the examination, the Panel solicits the opinions of faculty present and formulates their own evaluation.

OUTCOME – There are three (3) possible outcomes:

- The student passes the examination.
However, the Examination Panel, in its judgment, may recommend additional work. All such recommendations must be specified in writing.
- The student fails, but in the Examination Panel's judgment, is able to correct their deficiencies through additional work and re-examination. The time frame for the scope of work and schedule of re-examination must be specified in writing. Each student may be permitted to be re-examined, but only once.
- The student fails and is dropped from the program.

The outcome of the examination is given in the form of a written evaluation, signed by the committee and observer, and communicated to the PhD Program Committee for the records, and to the student on the day of the oral examination. A sample sign-off sheet is shown in [Appendix C](#).

Phase II: Thesis Proposal

The objective of this phase is to identify a suitable thesis topic and to complete the preliminary research needed to plan a course of action leading to a successful dissertation on that topic.

Candidates will have to demonstrate their ability to:

- Isolate, define and structure a previously unstructured or unresolved problem in their area of concentration
- Make an original contribution to this field
- Follow the general conventions and techniques of academic research
- Apply knowledge and skills acquired through the course of study
- Communicate ideas in a clear and coherent manner

Form of Proposal

A thesis proposal must be submitted in written form to the Doctoral Committee and prepared for an oral presentation at a public seminar. It should be concise and lucid, but sufficiently complete to allow for an evaluation of the above criteria.

The following parts are required:

Cover page, listing the following:

- Proposed title
- Candidate's name
- School's name and degree sought

- Names and affiliations of the Doctoral Committee members
- Date of submission

Abstract, which summarizes the proposal and succinctly states its salient points.

Description of the research problem, to be addressed in the thesis. This description must:

- State the problem in a concise manner
- Explain its significance and the context in which it arises

Description of the approach, to be pursued. At minimum, it must contain the following:

- A review of the research and theory relevant for solving the problem
- A specification of the conceptual framework adapted for solving the problem
- An identification of specific theories, methods or sources of data expected to be employed in the thesis
- A preliminary timetable

Bibliography.

Once the candidate's Doctoral Committee has received a complete thesis proposal, only then can its presentation be scheduled.

Submission of Proposal

One (1) week prior to the scheduled proposal presentation, two (2) copies of the thesis proposal must be posted publicly, and all faculty of the School of Architecture notified of the time and place of the meeting by the School.

Presentation of Proposal

The proposal presentation must be scheduled only one week prior, during, or two weeks after the Fall or Spring semesters as per the official University calendar. The Chair of the Doctoral Committee will organize the event and inform the Graduate Program administration.

A proposal presentation cannot be scheduled to overlap with another.

The proposal must be presented at a public seminar. The faculty at large of the School will be invited to this presentation.

The Doctoral Committee and one neutral observer from another program must fully participate in person, or by "live interaction" via telephone conference call, videoconference, voice-over-Internet, and Webcam or other "synchronous" communication systems that may be available at the time.

The Doctoral Committee will make a decision on the acceptance of the proposal, based on the written proposal, the seminar and the opinions of the attending faculty. This decision, signed by the committee, is communicated in writing to the PhD Program Committee for the records and to the student within one week of the examination.

It is up to the discretion of the PhD Program Committee to ask any candidate who fails the proposal to withdraw from the program. No candidate can remain in the program after two failed proposal attempts.

Phase III: Dissertation & Defense

The objective of this phase is to write a dissertation based on the selected topic that:

- Represents a significant research accomplishment
- Makes a significant contribution to knowledge in the area of concentration
- Includes material worthy of publication

Submission of Dissertation

Candidates must submit to the Doctoral Committee a substantially complete version of their dissertation no later than one and one-half (1½) months before the deadline stipulated by the University in the semester in which they hope to complete their Ph.D. program of study. The committee then has a maximum of one (1) month to review the dissertation; during this time, the student may be required to do further writing and amendments.

Two (2) weeks prior to the scheduled dissertation defense, three (3) copies of the final draft will be posted publicly, and all faculty of the School of Architecture notified of the time and place of the meeting by the School.

Dissertation

A dissertation must be publicly defended. This defense serves to:

- Give faculty the opportunity to assess whether the research program specified in the candidate's thesis proposal has been carried out satisfactorily
- Provide a forum for the communication of the research results

No dissertation will be scheduled for public defense until the document representing the work of the candidate is reviewed and accepted for presentation by the candidate's Doctoral Committee. At minimum, it must include:

- Title page
- Abstract

- Table of contents
- A finished text that completely describes the work and includes all references and citations

The style and format of this document shall conform to those accepted in the field closest to the dissertation's field of study. This document will be called the "final draft" of the dissertation, from here on.

A doctoral student must register for 48-797 PhD Dissertation Defense in the semester in which their dissertation is defended.

The dissertation defense must be scheduled only one week prior, during, or two weeks after the Fall or Spring semesters as per the official University calendar. The dissertation defense cannot be scheduled to overlap with another.

The Chair of the Doctoral Committee will organize the event and inform the Graduate Program administration. The administration will disseminate the event announcement throughout the campus.

The Doctoral Committee and one neutral observer from another program must fully participate in person, or by "live interaction" via telephone conference call, videoconference, voice-over-Internet, and Webcam or other "synchronous" communication systems that may be available at the time.

The Doctoral Committee will make a decision on the acceptance of the dissertation, based on the written work and the oral defense and consideration of views of other faculty. This decision must be communicated in writing to the PhD Program Committee for approval. It is up to the discretion of the PhD Program Committee to ask in writing any student who fails the dissertation phase to withdraw from the program. No student may remain in the program after failing two dissertation attempts.

Students can only be certified for the award of the Ph.D. degree after their Doctoral Committee and the Dean of the College of Fine Arts have signed off on their dissertation (certifying passing both the oral and written parts) and an approved final draft of their dissertation (hard copy and a soft copy on CD) has been made available for public dissemination through the Carnegie Mellon University Library and the University Microfilms Incorporated.

Electronic Dissertation Submission

Electronic submission procedures as well as more information on the student's publishing options may be found on Hunt Library's website:

<https://www.library.cmu.edu/datapub/sc/dissertation/submitting>.

On the website can be found the Ph.D. dissertation electronic submission checklist which is intended to be completed by the student:

https://www.library.cmu.edu/sites/drupal-live.library.cmu.edu/files/Dissertation_Submission_Checklist_Electronic.pdf.

The student will have the option of choosing to publish through ProQuest and/or presenting their dissertation in the Research Showcase. Again, more information on these options can be found through the library's website.

Once the checklist is completed by the student and has been returned to their graduate coordinator along with a PDF of their dissertation, a signature page should be created with typed signatures, not real signatures. This signature page should be attached to the beginning of the PDF. The file can then be uploaded to the Library's FTP site by the graduate coordinator.

Instructions for depositing the dissertation onto the FTP server may be found here:

https://libwebspace.library.cmu.edu/libraries-and-collections/Services/Dissertation/How_to_Upload_Documents_to_Library_FTP_Server_Mac.pdf

<https://libwebspace.library.cmu.edu/libraries-and-collections/Services/Dissertation/How%20to%20Upload%20a%20document%20to%20the%20Library%20FTP%20server%20using%20Windows.pdf>

Once the dissertation is uploaded to the FTP server, a notification email must be sent to Melanie Klaput melaniek@andrew.cmu.edu at Hunt Library.

After the dissertation has been uploaded, a paper copy of the student's checklist, their ProQuest forms (if applicable) and any payment for ProQuest options chosen by the student should be mailed to the Mailroom at Hunt Library.

All But Dissertation (ABD) Status

After the completion of Phase II of the Ph.D. Program in the School of Architecture, doctoral candidates shall be regarded as All But Dissertation (ABD). The School of Architecture verifies the achievement of ABD status, which the School certifies, in writing, to Enrollment Services.

Doctoral Candidacy Policies for ABD

The School of Architecture adopts the general University's policies pertaining to ABD status ("Doctoral Student Status Policy" adopted April 5, 2011), with specific declarations relevant to the School (<https://www.cmu.edu/policies/student-and-student-life/doctoral-student-status.html>).

The university's policies cover: time limits on doctoral student status, a definition of ABD status, a definition of In Residence and In Absentia status for doctoral students and the tuition charged for students In Residence and for students In Absentia. These rules apply to all doctoral students. Students who began their doctoral studies prior to the date of this policy's revision may follow time-to-degree requirements from the previous policy, but all other rules set forth in this policy will apply immediately to all doctoral students.

All references to the department in the sequel will apply to the School of Architecture.

All references to college in the sequel will apply to the College of Fine Arts.

ABD Status

All But Dissertation (ABD) status is intended for doctoral students whose only remaining requirements are the completion and defense of their thesis. Once the student meets the departmental criteria⁽¹⁾

ABD status must be approved by the department in writing to:

universityregistrars-office@andrew.cmu.edu.

In Residence versus In Absentia

Once students achieve All But Dissertation status, they must choose whether to complete their dissertation In Residence or In Absentia. A doctoral student In Residence maintains student status and all consequent student privileges and continues to be actively engaged with the university. A doctoral student In Absentia status, ABS, is one who has left the university with the intent of completing their dissertation but not actively engaged with the university and does not require university resources as outlined below. When a student decides whether to pursue All But Dissertation In Residence or In Absentia, they must complete an ABD Status Agreement, which is available on [The HUB](https://www.cmu.edu/hub/registrar/registration/abd.html) web site (<https://www.cmu.edu/hub/registrar/registration/abd.html>). Once the academic department approves the agreement, the student may change their status from In Residence to In Absentia multiple times. A student In Residence or In Absentia must meet the specific criteria noted in Sections below.

The university will not verify any student In Absentia as a "student" for immigration or loan purposes. All But Dissertation students in J1 or F1 immigration status must continue to follow the Department of Homeland Security (DHS) regulations.⁽²⁾

ABD Students In Residence

All But Dissertation students In Residence receiving any financial support (such as tuition, stipend, fees or health insurance, whether full or partial), tied to activities that are integral to their doctoral program that is paid by or administered by the university must be enrolled for at least thirty-six units to maintain full time student status and all subsequent student privileges. The Provost may grant exceptions to the thirty-six (36) units enrollment requirement.⁽³⁾

All But Dissertation students In Residence who are not receiving any financial support (such as tuition, stipend, fees or health insurance, whether full or partial), from the university tied to activities that are integral to their doctoral program should consult their college policy to determine the number of units for which they must be registered in order to maintain full-time student status and all subsequent privileges.

All But Dissertation students In Residence who are pursuing their doctoral degree on a part time basis and are not receiving any financial support (such as tuition, stipend, fees or health insurance, whether full or partial), from the university tied to activities that are integral to their doctoral program should consult their college policy to determine the number of units they must be registered for in order to maintain part time student status and all subsequent privileges. Note that doctoral students must be a full time graduate student for at least one academic year or more if required by the student's home college.

All But Dissertation students who are employed by the University in a capacity independent of their educational program and are pursuing a doctoral degree part time, may register for the number of units required by their department in order to remain in part time status so long as they are not receiving any financial support (such as tuition, stipend, fees or health insurance, whether full or partial), tied to activities that are integral to their doctoral program by their college, school or department. Questions about eligibility for tuition benefits should be referred to the Benefits Department.

Final Semester Tuition ABD Students In Residence

Students who are supported by the university must be registered for thirty-six (36) units for the entire final semester and will be assessed their college's full-time tuition.

If a student completes all Ph.D. degree requirements and is certified by:

September 30 (in the Fall Semester), or February 28 (in the Spring Semester), tuition will be adjusted to \$0; however, they will remain enrolled for thirty-six (36) units for the semester.

October 31 (in the Fall Semester), or March 31 (in the Spring Semester), tuition will be adjusted to 50% of the full-time tuition; however, they will remain enrolled for thirty-six (36) units for the semester.

After October 31 (in the Fall Semester), or after March 31 (in the Spring Semester), but BEFORE the first day of the next semester, tuition will NOT be adjusted, and they will remain enrolled for thirty-six (36) units for the semester.

Fees will NOT be adjusted.

Students registered for less than thirty-six (36) units are NOT eligible for a tuition adjustment, regardless of certification date.

ABD Students *In Absentia*

An All But Dissertation doctoral student may, upon departmental certification, be regarded as In Absentia when, and so long as, the following three conditions apply:

- The student has been enrolled as a full-time graduate student at Carnegie Mellon University for at least one academic year or more if required by the student's home college. Part-time graduate enrollment may, at the department's discretion, be counted pro-rata toward this requirement.
- The student does not receive any financial support (such as tuition, stipend, fees or health insurance) tied to activities that are integral to their doctoral program that is paid by or administered by the university.
- The student does not require substantial use of university resources. Departmental certification of this condition shall be subject to guidelines established by the school or college.

In accordance with university guidelines, students In Absentia MAY⁽⁴⁾:

- Use university libraries
- Use the university stores
- Use computing facilities only for department communications and for thesis text preparation
- Enter university buildings for faculty/student consultations
- Be eligible for student health insurance as determined on a case by case basis (5)
- Use the Career and Professional Development Center
- Become university employees

May NOT:

- Be employed with a graduate student stipend⁽⁶⁾
- Maintain legal F1 or J1 student status
- Use University Health Services⁽⁵⁾
- Buy parking permits⁽⁷⁾
- Use athletic facilities⁽⁷⁾
- Reside in university housing

Employment of ABD Students In Absentia

As noted above, All But Dissertation students In Absentia are extended only minimum access to university resources. The student does not receive any financial support (such as tuition, stipend, fees or health insurance, whether full or partial), tied to activities that are integral to their doctoral program paid by or administered by the university. An All But Dissertation student In Absentia cannot be hired for work by Carnegie Mellon University directly related to completing their dissertation and/or make substantial use of resources for work toward the doctorate as noted above.⁽⁴⁾ In order to be in compliance with these policies, the university's employment policies and the Internal Revenue Service, an All But Dissertation student In Absentia may only be hired for university employment through the appropriate employment process. Questions should be referred to Human Resources.

Tuition and Fee Effects of In Absentia Student Status including the Final Semester

While an All But Dissertation student is In Absentia, no tuition will be assessed. The student will, however, be responsible for all applicable fees. An All But Dissertation student who is In Absentia, who returns to defend their dissertation must change from In Absentia to In Residence and shall be required to register and pay for at minimum five units of graduate study, based on their current school/college's tuition before the degree is certified.

A student who receives support (such as tuition, stipend, fees or health insurance, whether full or partial) paid for or administered by the university, must follow the policy for Final Semester Tuition for All But Dissertation Students In Residence (see above) and is eligible for the tuition to be pro-rated as identified in the schedule.

A student who is not receiving any financial support (such as tuition, stipend, fees or health insurance, whether full or partial), paid for or administered by the university will be assessed for the 5 units and the tuition rate will not be adjusted based on certification date.

Doctoral Students Enrolled Prior to Fall 2011

Doctoral students enrolled prior to Fall 2011 are covered by the time to degree requirements as stated in the Doctoral Candidate Policies for All But Dissertation (ABD) Policy, which was in place from February 28, 1991 through May 31, 2011. The relevant policy section is: "Once students achieve ABD status, their doctoral degree candidacy shall continue for a maximum of seven full academic years, unless terminated earlier by conferral of the degree, by academic or administrative action, or by a lapse of candidacy due to more restrictive department or college policy. At the expiration of the seven-year period, candidacy status shall lapse. Once candidacy has lapsed, the person may resume work towards a doctoral degree only if newly admitted to a currently offered doctoral degree program under criteria determined by that program."

PhD Policy Notes:

⁽¹⁾ General examples of having met All But Dissertation requirements may include completing all courses and passing qualifying exams; completing all courses and acceptance of thesis proposal; etc. as defined by program, department or school.

⁽²⁾ The intent of the DHS regulations is that the student continues to pursue completion of the degree on a full-time basis under the jurisdiction of the university that will award the degree. International students who enter All But Dissertation status must remain In Residence and be registered full-time as defined in this policy to preserve F1 or J1 immigration status while they complete their degree. Questions about All But Dissertation status and immigration requirements should be addressed to the Office of International Education.

⁽³⁾ If granted exception results in the student's enrollment being reduced to less than half time, tax consequences may apply.

⁽⁴⁾ An All But Dissertation student In Absentia may be hired as an university employee without switching to active student status so long as the hiring department certifies that the student is not hired at Carnegie Mellon for work directly related to their dissertation and that the student does not inappropriately make substantial use of resources for work towards the doctorate as noted above. As an employee, an individual would be eligible for benefits that apply to their status as an employee, not as a graduate student.

⁽⁵⁾ University Health Services is not available to students in In Absentia status, except in an emergency, or on a case-by-case basis. All inquiries may be directed to the Manager of Business Operations, University Health Services.

⁽⁶⁾ Graduate students are not considered employees of the university as their primary affiliation with the university is as a student.

⁽⁷⁾ An individual whose primary relationship with the university is as an employee and who as Ph.D. student moves to the status of ABD In Absentia will be eligible for benefits that apply to their status as an employee.

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 <https://www.cmu.edu/policies/student-and-student-life/return-student.html> respectively.

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:

<https://www.cmu.edu/policies/student-and-student-life/withdrawal-of-a-degree.html>.

GRADING/EVALUATION

GRADING SCALE

Grading	Quality Points	Notes (as of Fall 1995)
A+	4.33	
A	4.0	
A-	3.67	
B+	3.33	
B	3.0	
B-	2.67	
C+	2.33	

C	2.0	Minimum grade for passing a course for graduate students
C-	1.67	
D+	1.33	
D	1.0	
R	0.0	Failure
X	0.0	Conditional failure
S	Non-factorable	Satisfactory
P	Non-factorable	Passing
N	Non-factorable	Not Passing
O	Non-factorable	Audit
W	Non-factorable	Withdrawal
I	Non-factorable	Incomplete
AD	Non-factorable	Credit granted for work completed at another institution or by examination credit

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:

	Inside Arch	Outside Arch
Core Course	No P/N *C or Better	No P/N *C or Better
Selectives	No P/N *C or Better	Yes P/N *C or Better
Electives	Yes P/N C or Better	Yes P/N C or Better
48-704 MS INTERN	Yes P/N, credits count except AECM	N/A

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>.

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/student-affairs/theword/academic/appeal-of-grades-and-academic-actions.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

<https://www.cmu.edu/policies/student-and-student-life/transfer-credit-evaluation-and-assignment.html>

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, digital, and programmatic access to ensure that students with disabilities have equal access to their educational experience. We work to ensure that qualified individuals receive reasonable accommodations as guaranteed by the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973. Students who would like to receive accommodations can begin the process through [Disability Resources' secure online portal](#):

<https://rainier.accessiblelearning.com/cmu/>

or email access@andrew.cmu.edu to begin the interactive accommodation process.

Students with physical, sensory, cognitive, or emotional 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 access@andrew.cmu.edu, or call (412) 268-6121.

Sexual Misconduct Policy

The University prohibits sex-based discrimination, sexual harassment, sexual assault, dating/ domestic violence, sexual exploitation, stalking, and violation of protective measures. The University also prohibits retaliation against individuals who bring forward such concerns or allegations in good faith.

The University's Sexual Misconduct Policy is available at:

<https://www.cmu.edu/policies/administrative-and-governance/sexual-misconduct/index.html>

The University's Policy Against Retaliation is available at:

<https://www.cmu.edu/policies/administrative-and-governance/whistleblower.html>

If you have been impacted by any of these issues, you are encouraged to make contact with any of the following resources:

- Office for Institutional Equity and Title IX

<http://www.cmu.edu/title-ix/>

412-268-7125

institutionalequity@cmu.edu

- University Police

<https://www.cmu.edu/police/>

412-268-2323

Additional resources and information can be found at:

<https://www.cmu.edu/title-ix/resources-and-information/index.html>

Gestational and Parental Accommodations

<https://www.cmu.edu/graduate/programs-services/maternity-accommodation-protocol.html>

Providing holistic student support is a top priority at Carnegie Mellon.

The protocols on this page are designed to support the parental needs of students and their families.

Students seeking any of the Parental Accommodations described below

must register with the Office of the Dean of Students by contacting the office for an appointment by calling 412-268-2075.

Students are encouraged to register with the Office of the Dean of Students ninety (90) days in advance of the anticipated arrival of the child as applicable in the individual circumstance. At the time of registering, students will have the opportunity to consult about resources, procedures, funding options and preparation for discussing academic accommodations with the student's academic department. Students should also consult with their academic advisors either before or in conjunction with registering with the Office of the Dean of Students.

Accommodations for Gestational Parents

The birth 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. Students whose anticipated delivery date is during the course of a semester may need to take time away from their academic responsibilities. Carnegie Mellon students seeking time away are afforded two options as possible accommodation:

- **Short-Term Accommodation for Gestational Parents** – A short term absence from academic responsibilities up to a maximum of six (6) weeks. Short-Term 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 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

(<https://www.cmu.edu/policies/student-and-student-life/student-leave.html>) drop all remaining courses for the semester and are unenrolled for the semester. International students must consult with the Office of International Education (<https://www.cmu.edu/oie/>) before considering this option due to visa implications.

Parental Accommodation for Doctoral Students

The university offers a Parental Accommodation for qualifying doctoral student parents to include up to four (4) weeks of time away from academic responsibilities with continued stipend support. This accommodation can be utilized within six months of the birth or placement of a child through adoption, foster care or legal guardianship. Gestational parents may utilize both the Short-Term Accommodation for Gestational Parents and the parental accommodation.

Careful planning and consultation is necessary given the unique contexts and requirements of each student's situation. Students will remain fully enrolled and will receive assistance in navigating the necessary planning and consultation processes.

Financial Assistance for Student Parents

Carnegie Mellon also offers the following options for financial assistance to students who become parents while enrolled:

Interest Free Loan – Any student who becomes a parent is eligible to apply for an interest-free parental loan (<https://www.cmu.edu/student-affairs/dean/loans/>) from the Office of the Dean of Students.

Doctoral Stipend Continuation (Gestational Parents) – Doctoral students who are the gestational parent and who receive an academic stipend

funded by Carnegie Mellon are eligible to continue to receive stipend funding for up to six (6) weeks during a Short-Term Accommodation for Gestational Parents or during a Formal Leave of Absence. Continued academic stipend funding may be extended by two (2) weeks, for a total of eight (8) weeks, if an absence longer than six weeks is medically necessary.

Doctoral Stipend Continuation (Non-gestational Parents) – Doctoral students who receive an academic stipend funded by Carnegie Mellon and are becoming a parent by adoption, birth, or through guardianship are eligible to continue to receive stipend funding for up to four (4) weeks during a Short-Term Parental Accommodation.

Consensual Intimate Relationship Policy Regarding Undergraduate Students

<https://www.cmu.edu/policies/student-and-student-life/consensual-relationships.html>

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.

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>.

Specific Declarations in the School of Architecture

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](#)."

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>. 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/>.

Resources and Regulations Governing Research at Carnegie Mellon

- Office of Sponsored Programs
<https://www.cmu.edu/osp/>

- Office of Research Integrity & Compliance
<https://www.cmu.edu/research-compliance/index.html>
- Intellectual Property Policy
<https://www.cmu.edu/policies/administrative-and-governance/intellectual-property.html>
- Policy on Restricted Research
<https://www.cmu.edu/policies/research/restricted-research.html>
- Human Subjects in Research Policy
<https://www.cmu.edu/policies/research/human-subjects-in-research.html>

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 48-704 MS INTERN or 48-695 M.Arch Internship 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
<https://www.cmu.edu/sfs/financial-aid/index.html>.

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

2023-2024

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

Note: The following pages are meant to broadly include only some of the resources available to graduate students. It is not an exhaustive appendix of resources, and students are strongly encouraged to visit the various websites linked below for the most up-to-date information.

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Key Resources for Graduate Student Support

Office of Graduate and Postdoctoral Affairs

<https://www.cmu.edu/graduate>

graded@cmu.edu

The Office of Graduate and Postdoctoral Affairs provides university-wide support for all graduate students and academic programs, with a focus on supporting graduate student success at Carnegie Mellon. Examples of resources offered through the Office of Graduate and Postdoctoral Affairs include, but are not limited to:

- Website with university resources, contact information for CMU programs and services, possible financial assistance and potential funding opportunities, and various procedural and policy information
- Newsletter to all graduate students with information on activities, resources, and opportunities
- Professional development seminars and workshops, and various programming and events for the graduate student community

The Office of Graduate and Postdoctoral Affairs also works directly with the colleges and departments on issues related to graduate students and serve as a resource for developing policy and procedures. The Office of Graduate and Postdoctoral Affairs partners with many other offices and organizations, such as the Graduate Student Assembly, to support the holistic graduate student educational experience.

Office of the Dean of Students

<https://www.cmu.edu/student-affairs/dean/>

The Office of the Dean of Students provides central leadership of the metacurricular experience at Carnegie Mellon including the coordination of student support. Graduate students will find the enrollment information for Domestic Partner Registration and Parental Accommodations in the Office of the Dean of Students or on their website. This Office also manages the Student Emergency Support Funding process. There are currently three forms of support funding for enrolled students: emergency student loans, student parental loans, and the Tartan

Emergency Support Fund. Inquiring students will be provided with additional information about the various types of funding during a consultation meeting with a member of the Dean of Students team. Tuition costs are not eligible for Student Emergency Support funding.

College Liaisons and the Student Support Resources team serve as additional resources for graduate students. College Liaisons are senior members of the Division of Student Affairs who work with departments and colleges addressing student concerns across a wide range of issues. College Liaisons are identified on the Important Contacts list in Student Information Online (SIO). The Student Support Resources team offers an additional level of support for students who are navigating a wide range of life events. Student Support Resources staff members work in partnership with campus and community resources to provide coordination of care and support appropriate to each student's situation.

The Division of Student Affairs

The Division of Student Affairs includes (not an exhaustive list):

- Athletics, Physical Education and Recreation
- Career and Professional Development Center (CPDC)
- Center for Student Diversity and Inclusion
- Cohon University Center
- Counseling & Psychological Services (CaPS)
- Dining Services
- Office of Community Standards and Integrity (OCSI)
- Office of Student Leadership, Involvement, and Civic Engagement (SLICE)
- University Health Services (UHS)
- Wellness Initiatives

Center for Student Diversity & Inclusion

<https://www.cmu.edu/student-diversity/>

Diversity and inclusion have a singular place among the values of Carnegie Mellon University. The Center for Student Diversity & Inclusion actively cultivates a strong, diverse and inclusive community capable of living out

these values and advancing research, creativity, learning and development that changes the world.

The Center offers resources to enhance an inclusive and transformative student experience in dimensions such as access, success, campus climate and intergroup dialogue. Additionally, the Center supports and connects historically underrepresented students and those who are first in their family to attend college in a setting where students' differences and talents are appreciated and reinforced, both at the graduate and undergraduate level. Initiatives coordinated by the Center include, but are not limited to:

- First generation/first in family to attend college programs
- LGBTQ+ Initiatives
- Race and ethnically focused programs, including Inter-University Graduate Students of Color Series (SOC) and PhD SOC Network
- Women's empowerment programs, including Graduate Women's Gatherings (GWGs)

Assistance for Individuals with Disabilities

<https://www.cmu.edu/disability-resources/>

The Office of Disability Resources at Carnegie Mellon University has a continued mission to provide physical, digital, and programmatic access to ensure that students with disabilities have equal access to their educational experience. The Office works to ensure that qualified individuals receive reasonable accommodations as guaranteed by the Americans with Disabilities Act (ADA) and Section 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 physical, sensory, cognitive, or emotional 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 access@andrew.cmu.edu, or call (412) 268- 6121.

Eberly Center for Teaching Excellence & Educational Innovation

<https://www.cmu.edu/teaching/>

The Eberly Center offers a wide variety of confidential, consultation services and professional development programs to support graduate

students as teaching assistants or instructors of record during their time at Carnegie Mellon University and as future faculty members at other institutions. Regardless of one's current or future teaching context and duties, Eberly's goal is to disseminate evidence-based teaching strategies in ways that are accessible and actionable. Programs and services include campus-wide Graduate Student Instructor Orientation events and our Future Faculty Program, both of which are designed to help participants be effective and efficient in their teaching roles. The Eberly Center also assists departments in creating and conducting customized programs to meet the specific needs of their graduate student instructors. Specific information about Eberly Center support for graduate students is found at:

<https://www.cmu.edu/teaching/graduatestudentsupport/>

Graduate Student Assembly

<https://www.cmu.edu/stugov/gsa/>

The Graduate Student Assembly (GSA) is the branch of Carnegie Mellon Student Government that represents and advocates for the diverse interests of all graduate students at CMU. GSA is composed of representatives from the different graduate programs and departments who want to improve the graduate student experience at the different levels of the university. GSA is funded by the Student Activities Fee from all graduate students. GSA passes legislation, allocates student activities funding, advocates for legislative action locally and in Washington D.C. on behalf of graduate student issues and needs, and otherwise acts on behalf of all graduate student interests. GSA's recent accomplishments are a testament to their making a difference, and steps to implementing the vision laid out by the strategic plan.

<https://www.cmu.edu/stugov/gsa/about-the-gsa/strategic-plan.html>

GSA offers an expanding suite of social programming on and off-campus to bring graduate students from different departments together and build a sense of community. GSA is the host of the Graduate Student Lounge on the 3rd floor of the Cohon University Center. GSA also maintains a website of graduate student resources on and off-campus. GSA continues to rely on student feedback to improve the graduate student experience at CMU. Feel free to contact them at gsa@cmu.edu to get involved, stop by their office in the Cohon University Center Room 304 or become a representative for your

department.

Office of International Education (OIE)

<https://www.cmu.edu/oie/>

Carnegie Mellon hosts international graduate and undergraduate students who come from more than 90 countries. The Office of International Education (OIE) is the liaison to the University for all non-immigrant students and scholars, as well the repository for study abroad opportunities. OIE provides many services including: advising on personal, immigration, study abroad, academic, and social and acculturation issues; presenting programs of interest such as international career workshops, tax workshops, and cross-cultural and immigration workshops; international education and statistics on international students in the United States; posting pertinent information to students through email and the OIE website and conducting orientation and pre-departure programs.

Veterans and Military Community

<https://www.cmu.edu/veterans/>

Military veterans are a vital part of the Carnegie Mellon University community. Graduate students can find information on applying for veteran education benefits, campus services, veteran's groups at CMU, and non-educational resources through the Veterans and Military Community website. There are also links and connections to veteran resource in the Pittsburgh community. The ROTC and Veteran Affairs Coordinator can be reached at urovaedbenefits@andrew.cmu.edu or 412-268-8747.

Carnegie Mellon Ethics Hotline

<https://www.cmu.edu/hr/resources/ethics-hotline.html>

The health, safety and well-being of the university community are top priorities at Carnegie Mellon University. CMU provides a hotline that all members of the university community should use to confidentially report suspected unethical activity, violations of university policy, or violations of law. Students, faculty and staff can anonymously file a report by calling 1-844-587-0793 or visiting <https://cmu.ethicspoint.com/>. All submissions are reported to appropriate university personnel and handled discreetly.

The hotline is NOT an emergency service. For emergencies, call

University Police at 412-268-2323.

Policy Against Retaliation

It is the policy of Carnegie Mellon University to protect from retaliation any individual who makes a good faith report of a suspected violation of any applicable law or regulation, university Policy or procedure, any contractual obligation of the university, and any report made pursuant to the Carnegie Mellon University Code of Business Ethics and Conduct.

Additional details regarding the Policy Against Retaliation are available at:

<https://www.cmu.edu/policies/administrative-and-governance/whistleblower.html>

Key Offices for Academic & Research Support

Computing and Information Resources

<https://www.cmu.edu/computing/>

Computing Services maintains and supports computing resources for the campus community, including the campus wired and wireless networks, printing, computer labs, file storage, email and software catalog. As members of this community, we are all responsible for the security of these shared resources. Be sure to review the Safe Computing (<https://www.cmu.edu/computing/safe/>) section and the University Computing Policy (<https://www.cmu.edu/policies/information-technology/computing.html>)

Visit the Computing Services website (<https://www.cmu.edu/computing/>) to learn more. For assistance the Computing Services Help Center is available at 412-268-4357 (HELP) or ithelp@cmu.edu.

Student Academic Success Center

<https://www.cmu.edu/student-success/>

The Student Academic Success Center's (SASC) work to support success focuses on creating spaces for students to engage in their coursework and approach to learning through many group and individual program options. SASC supports student success by providing academic coaching, subject-specific tutoring, effective communication strategies, accommodations for students with disabilities, and language support for multilingual learners. SASC engages with faculty and staff to improve the coordination and professional development for academic advisors. Visit the SASC website for more information about services offered in areas such as communication and language support; language and cross-cultural support; and learning support.

University Libraries

<https://www.library.cmu.edu/>

The University Libraries offers a wide range of information, resources, and services supporting graduate students in coursework, research, teaching, and publishing. The library licenses and purchases books, journals, media, and other needed materials in various formats. Library liaisons, consultants, and information specialists provide in-depth and professional assistance and advice in all-things information, including:

- Locating and obtaining specific resources
- Providing specialized research support
- Advanced training in the use and management of data

Sign up for workshops and hands-on topic-specific sessions such as data visualization with Tableau, cleaning data with OpenRefine, and getting started with Zotero. Weekly drop-in hours for Digital Humanities and for Research Data Research Management are scheduled during the academic year. Start at the library home page to find the books, journals, and databases you need; to identify and reach out to the library liaison in your field; to sign up for scheduled workshops; and to connect with consultants in scholarly publishing, research data management, and digital humanities.

Research at CMU

<https://www.cmu.edu/research/>

The primary purpose of research at the university is the advancement of knowledge in all fields in which the university is active. Research is regarded as one of the university's major contributions to society and as an essential element in education, particularly at the graduate level and in faculty development. Research activities are governed by several university policies. Guidance and more general information are found by visiting the Research at Carnegie Mellon website.

Office of Research Integrity & Compliance

<https://www.cmu.edu/research-compliance/>

The Office of Research Integrity & Compliance (ORIC) is designed to support research at Carnegie Mellon University. The staff work with researchers to ensure research is conducted with integrity and in

accordance with federal and Pennsylvania regulation. ORIC assists researchers with human subject research, conflicts of interest, responsible conduct of research, export controls, and institutional animal care & use. ORIC also provides consultation, advice, and review of allegations of research misconduct.

Key Offices for Health, Wellness & Safety

Counseling & Psychological Services

<https://www.cmu.edu/counseling/>

Counseling & Psychological Services (CaPS) affords the opportunity for students to talk privately about academic and personal concerns in a safe, confidential setting. An initial consultation at CaPS can help clarify the nature of the concern, provide immediate support, and explore further options if needed. These may include a referral for counseling within CaPS, to another resource at Carnegie Mellon, or to another resource within the larger Pittsburgh community. CaPS also provides workshops and group sessions on mental health related topics specifically for graduate students on campus. CaPS services are provided at no cost. Appointments can be made in person, or by telephone at 412-268-2922.

Health Services

<https://www.cmu.edu/HealthServices/>

University Health Services (UHS) is staffed by physicians, advanced practice clinicians and registered nurses who provide general medical care, allergy injections, first aid, gynecological care, and contraception as well as on-site pharmaceuticals. The CMU Student Insurance Plan covers most visit fees to see the physicians and advanced practice clinicians & nurse visits. Fees for prescription medications, laboratory tests, diagnostic procedures and referral to the emergency room or specialists are the student's responsibility and students should review the UHS website and their insurance plan for detailed information about the university health insurance requirement and fees.

UHS also has a registered dietician and health promotion specialists on staff to assist students in addressing nutrition, drug and alcohol and other healthy lifestyle issues. In addition to providing direct health care, UHS administers the Student Health Insurance Program. The Student Health

Insurance plan offers a high level of coverage in a wide network of health care providers and hospitals. Appointments can be made by visiting UHS's website, walk-in, or by telephone, 412-268-2157.

Campus Wellness

<https://www.cmu.edu/wellness/>

At Carnegie Mellon, we believe our individual and collective well-being is rooted in healthy connections to each other and to campus resources. The university provides a wide variety of wellness, mindfulness and connectedness initiatives and resources designed to help students thrive inside and outside the classroom.

Religious and Spiritual Life Initiatives (RSLI)

<https://www.cmu.edu/wellbeing/resources/religious-spiritual/index.html>

Carnegie Mellon is committed to the holistic growth of our students, including creating opportunities for spiritual and religious practice and exploration. RSLI has relationships with local houses of worship from various traditions and many of these groups are members of CMU's Council of Religious Advisors. They also offer programs and initiatives that cross traditional religious boundaries in order to increase knowledge of and appreciation for the full diversity of the worldview traditions. RSLI staff are available to support students across the spectrum of religious and spiritual practice and would be more than happy to help you make a connection into a community of faith during your time at CMU.

University Police

<https://www.cmu.edu/police/>

x2323

The University Police Department is located at 4551 Filmore Street. The department's services include police patrols and call response, criminal investigations, fixed officer and foot officer patrols, event security, and crime prevention and education programming as well as bicycle and laptop registration. Visit the department's website for additional information about the staff, emergency phone locations, crime prevention, lost and found, fingerprint services, and annual statistic reports. 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. The report also contains 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. Graduate students can obtain a copy by contacting the University Police Department at [x2323](tel:412-232-2323). The annual security and fire safety report is also available online at:

<https://www.cmu.edu/police/annualreports/>

Shuttle and Escort Services

<https://www.cmu.edu/parking/transport/>

Parking and Transportation coordinates the Shuttle Service and Escort Service provided for CMU students, faculty, and community. The Shuttle & Escort website has full information about these services, stops, routes, tracking and schedules.

The WORD

<https://www.cmu.edu/student-affairs/theword/>

The WORD is Carnegie Mellon University's online student handbook and serves as the foundation for the department (and sometimes college) handbook. The WORD contains university-wide academic policy information and resources, community policies and resources, and describes the university level procedures used to review possible violations of these standards. It is designed to provide all students with the tools, guidance, and insights to help you achieve your full potential as a member of the Carnegie Mellon community. Graduate students are encouraged to bookmark this site and refer to it often. University policies can also be found in full text at: <https://www.cmu.edu/policies/>

Appendix B, GAME PLAN

A.1 SAMPLE ADVISORY COMMITTEE

Advisory Committee

Chair:

Professor's Name
School of Architecture, Carnegie Mellon University

Members:

Professor's Name
Department Name, University Name

Professor's Name
Department Name, University Name

...

A.2 SAMPLE LIST OF COURSES TAKEN/IN PROGRESS

Completed Courses & Credits

(excluding independent studies)

Date	Course #	Course Title	Credits	Grade
F20	15-462	Computer Graphics	12	3.33
F20	21-259	Calculus in 3D	9	3.67
S21	48-721	Building Control & Diagnostics	12	4.0

Courses in Progress

(excluding independent studies)

Date	Course #	Course Title	Credits	Grade
F20	48-749	Special Topics in CD	9	
F20	48-760	Advanced Computer Modeling	9	

Independent Studies

Date	Course #	Course Title	Credits	Grade
F20	48-XXX	Independent Study	9	
S21	48-XXX	Independent Study	9	

A.3 SAMPLE MILESTONES AND PUBLICATIONS

Milestones

Milestone	Date
------------------	-------------

Qualifying Exam	
-----------------	--

Thesis Proposal	
-----------------	--

Thesis Defense	
----------------	--

Publications

(List all publications here)

-
-
-
-

A.4 SAMPLE THESIS STUDY AREA

Thesis Study Area

Introduction

Contemporary advances in computational technology and techniques have produced means of accurately predicting the performance of lighting that are affordable in terms of time and cost, factors that have hitherto been identified as limiting the application of computational simulations in architectural design. In terms the design of computational tools used in the building industry, research has shown that most contemporary tools do not provide adequate support for design processes.

By applying state-of-the-art computational techniques, together with assessments of the design process and corresponding informational demands, it is postulated that lighting simulation tools can be designed to assist architects in design. Though specific to the lighting domain, the proposed simulation tool demonstrates the principles of design support tools by providing accurate visualizations within time and resource constraints of architectural practice, adopts relevant metrics of performance to provide operative information succinct to informational demands of design decisions, complements the adaptive-iterative nature of investigative design, and aid design synthesis by allowing greater coupling and flexibility between various design activities.

Nature of Design

The areas of study include identifying the conditions and constraints of design in the context of architectural practice. Research has identified the design process to be adaptive-iterative, where problems are often ill-defined and designers adopt decomposing strategies together with explicit problem paradigms to manage complexity. This hypothesis of reducing cognitive cost to handle a multitude of possibilities in complex problems allow insight into the seemingly disparate design strategies of iterative partial problem-solution conjectures as well as insistence on maintaining singular solution concepts as long as possible, in spite of contradictions encountered. With regards to design synthesis, it has also been shown that there is significant correlation between novel design decisions and the transition between drawing, examining and thinking.

This understanding and further examination of design processes can suggest a new way of designing simulation tools. Rather than focusing the user on details that enables a simulation to be conducted, the tool should alleviate such demands and allow quick successions between drawing and examining. This can be achieved by identifying the relevant metrics of performance and delivering operative information quickly.

Features that address the management and comparisons between design alternatives can complement the comparative nature of iterative search in design. The fundamental strategy is thus one that reduces the overheads in enabling examinations in the tripartite description of design activities referenced earlier.

Constraints of Practice

The second area of study attempts to allow the development of a useful tool by examining the conditions and constraints in architectural practices. There are general categories of design tasks throughout an architectural project, each with corresponding information requirements and resource constraints. This suggests the need for an adaptive tool or methods to manage the balance between accuracy and resource. Highly accurate models and algorithms may require excessive amounts of parameter definitions, computing resource and time. By identifying the range of practice conditions, we can establish levels of detail and accuracy at which the tool should operate at. Appropriate techniques such as automated statistical approximations, model and algorithmic simplifications or recycling solutions as estimates can be applied to address the varying objectives and resource constraints.

Other practical concerns affecting the deployment of simulation tools in architectural practice include how easy it is to learn and use the tool, how well the tool works with other popular software and protocols as well as the level of confidence users have of the simulation results with respect to using them in a professional context. Such concerns point to a need to address issues of usability, interoperability and validations.

Performance-Based Architecture

It is generally accepted that contemporary architecture design has become increasing complex due to both a growing sophistication in consumer demand as well as advancements in scientific knowledge. The performance-based mandate proposes consideration of design from holistic standpoints, beyond traditional disciplinary or domain partitions, by focusing on the overall performance of the design. Following this agenda, simulation tools should complement the focus on achieving comfortable and enjoyable environments, rather than the established and often prescriptive list of domain parameters, often encapsulated in prescriptive building regulations. While a comprehensive demonstration of such performance-based approach necessarily include at least a multi-domain tool, a similar shift in approach can still be illustrated within a single domain.

The concept of a bi-directional feature could allow users to focus on the objective rather than specific parameters. This feature directs user effort in defining performance criteria and computation to augment the identification of possibly complex means in meeting the criteria. By doing so, the tool supports design as a search more than design as an optimization of parameters.

Design Support Environment Framework

This section presents a rough outline of a lighting simulation environment for architecture design support. While in no way comprehensive of all the considerations pertinent to a design support tool, this outline illustrates the main issues to be discussed in the thesis.

There has been much debate over how software tools should be deployed, the main distinction between local versus network deployments. While this decision can be separate from the development of the core functionalities of software and allocated to a later stage, the considerations for effective use of limited computational resources, ease of management and features supporting distributed and collaborative use should be issues pertinent to the design of the tool.

Given that computational simulations are but part of a much larger design process, it is important to integrate it with other involved processes, thus the concept of a design support environment. This implies the use of common or similar semantics and protocols, allowing easy and efficient transitions between the many activities. Absent in contemporary situations, efforts such as middle-ware, interoperable data formats or consistent software user interfaces exist as stop-gap measures. While ideally the proposed simulation features should be designed as a package that can interface any modeling platform via industry standard data protocols, practical constraints may limit the feasibility of doing so. Nevertheless, the tool should capitalize on industry standards to reduce overheads, ease integration and provide a consistent working environment. This includes user interfaces, models of simulation processes and popular data format support.

Following the identification of suitable performance metrics such as illuminance distribution, type of illuminance (diffused vs. direct), luminance ratios (contrast), glare indices and extent of exterior views, the tool should adopt technical approaches based upon comprehensive fundamental principles that would give relevance to the results throughout the project. Excessive abstraction and rule-of-thumb methods should be avoided. The photon mapping method (Jenson 2001) holds particular promise.

To better complement the needs and constraints of practice, the tool should allow use at different levels of granularity, or level of detail (LOD). This might be achieved by offering different sets of user interfaces that automate and reveal parameters selectively, in response to particular needs at each design phase, without compromising the fundamental principles approach mentioned earlier. Since the general photon mapping is time and resource intensive, different techniques would have to be applied to achieve the desired performance of the tool. We can broadly categorize conditions that the tool would have to satisfy as: (1) quick investigations with similar global parameters, (2) detailed comparisons

among limited alternatives, (3) accurate analysis of a particular design. Generally, there will be more time allocated to the respective categories but modified by the type of design decision, if it is a high or low level design task. Higher level tasks such as planning usually enjoy more resources when compared to lower level tasks such as the determining the size of openings.

Given the categorizations, we might be able to apply specific techniques to moderate the resources required to implement the otherwise resource and specification intensive fundamental principles approach. For example, in high level tasks involving multiple quick investigations such as comparing massing strategies appropriate for the architectural program, a significant portion of the required parameters can be specified automatically by statistical means, thus reducing user effort. Since contextual lighting conditions would be similar between the alternatives, part of the lighting solutions can be reused, thus reducing the computational task and increasing the speed at which solutions are presented. By maintaining the same technical approach throughout various LOD, the results would remain relevant and also ease computation. For example, when a particular scheme is selected for detailed analysis, it might be possible that only certain components (such as the indirect lighting) have to be updated, or simply refined (additional iterations to refine the specular effects).

One of the challenges in designing the bi-directional feature is addressing the problem of ambiguity. Given a particular condition and a desired state, there may be a multitude of ways to achieve that state. For example, to increase the daylight availability in a partially designed space, any or a combination of alterations to the many variables including window location, size, shape and material of sunshade and interior reflectance may satisfy the objective. While techniques such as using preference-based weightings and explicit metrics such as construction cost or energy consumption may be useful, these approaches often contradict the explorative nature of design in searching for novel solutions. This consideration presents a dilemma; while techniques such as using empirical surveys to anticipate search behavior or the mentioned weighted metrics are effective at structuring, managing and speeding up complex search, they may undermine the value of the search itself in terms of design exploration. Care has to be taken in providing abstractions and subsequent metrics at appropriate levels so as to address both concerns.

Effectiveness in augmenting design is difficult to ascertain or quantify. Empirical testing and user surveys may be used to validate the hypothesis that a lighting simulation tool can be used to help develop designs.

Storyboard

Use Case 1 – A low-level design decision on aperture sizing

Designer specifies the location, and begins modeling the space, adding a window and light-shelf to a wall. He selects illumination distribution visualization and a false-color mapping of interior workplane illumination is superimposed on the model. The tool is able to simulate inter-reflections of the light-shelf accurately. The designer notices a glare problem. He manipulates the parameters of the window and the light-shelf while the tool presents the corresponding effects in real-time. The designer decides to make the highlight into a caustic feature on another wall rather than avoiding it. He specifies the new position of the caustic and preferences on which parameters to be affected. The tool presents alternatives that would achieve the desired effect.

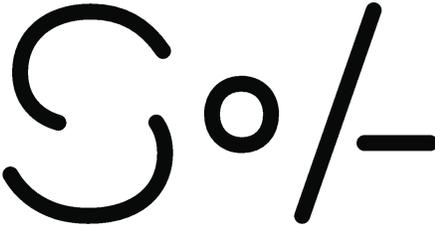
Use Case 2 – A high-level design decision on form

Designer specifies the location and begins modeling the building form. Lighting effects including shading, inter-reflections specular reflections are presented in real-time. Designer is unsatisfied with the shading on a façade and unable to modify the façade to achieve his intentions. He selects lighting contribution visualization. A vector field representing the lighting contribution on that façade is superimposed on the model. He modifies several parts of the building to achieve what he wants.

Use Case 3 – Design Synthesis

Designer wishes to design external sunshades. He studies the interior illumination, specifies acceptable ranges and confirms his choices after viewing high quality renderings of the space at such ranges. He specifies a volume outside the window as the physical bounds of the sunshade. The tool presents recommendations on transparency and reflectivity in a 3-D grid within the volume, which is updated as the designer begins to shape the sunshade. The designer eventually draws a sunshade that is too small causing the specified interior illumination to be exceeded, and the tool suggests changes to the window dimensions. The designer rejects the suggestion. The tool suggests a darker ceiling or carpet.

Appendix C, QUALIFYING EXAMINATION SIGN-OFF SHEET

School of Architecture College of Fine Arts		
PhD Qualifying Examination	Carnegie Mellon University	
STUDENT:		
EXAM DATE: WRITTEN		ORAL
OUTCOME: PASS	FAIL	
POST-CONDITIONS:		
EXAMINATION PANEL:		
NAME	PRINCIPAL ADVISOR	DATE
NAME		DATE
NAME		DATE
NAME	OBSERVER	DATE

POST-CONDITIONS (continued):



Appendix D, PHD THESIS PROPOSAL SIGN-OFF SHEET

School of Architecture		
College of Fine Arts		
PhD Thesis Proposal		
STUDENT:		
TITLE:		
PROPOSAL DATE:		
OUTCOME: PASS	FAIL	
DOCTORAL COMMITTEE:		
NAME	CHAIR	DATE
NAME [, AFFILIATION]		DATE
NAME [, AFFILIATION]		DATE
NAME [, AFFILIATION]		DATE

