Architecture Studio: Foundation II / 1st Year Spring
Spring 2017, CMU, Arch #48-105, M/W/F 1:30-4:20
Studio Website: www.andrew.cmu.edu/course/48-105

Coordinator: Kai Gutschow
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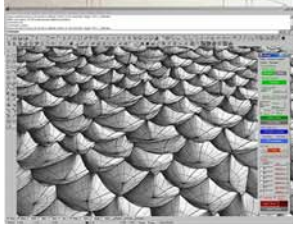
Off. Hr: by appt. in MM302

(1/18/17)

S'17 Syllabus





OVERVIEW: The 48-105 studio, called "Foundation II," is the second studio in CMU's professional B.Arch program. It builds on the lessons from 48-100 about clear architectural communication, abstract spatial-definition, and developing a confident design process. We expand from using drawing primarily as a tool of representation, to creating "discursive drawings" that act as vehicles for exploration and "motivating forces" that propel the imagination of architecture. We seek rigor in synthesizing and creating order from an ever larger array of parameters and performance criteria, but also stress a tolerance for uncertainty and multiple truths. We explore how materials, geometry, context, experience, and performance criteria can be harnessed to yield new and surprising insights about space and design. We work iteratively and reflectively. We emphasize the role of constraints and editing as fundamental to the design process. We explore the power of systems thinking. We give greater emphasis to computing, which is framed as a tool for describing and analyzing, but also for generating new understanding and testing proposals. The design process is still carefully controlled, but students are given autonomy to begin to speculate and take careful risks, both in their designs and in their drawings and presentations.

PROJECTS: There are two major projects, each a series of inter-related assignments:

Proj. 1: Drawing Performance: We begin with the recording of a mechanical device using the conventions of architectural drawing in order to understand its geometry and construction, and then work to tease out the performative potential, both real and imagined, through a series of drawings. A 2nd phase asks students to collaborate to design and build a large-scale, functioning wood instrument registering the performance of the mechanical device in space. This continues CMU's long tradition of a 1:1 woodshop project in freshman studio, instilling confidence in "making" and to test creative design ideas. A 3rd phase returns to drawing to introduce ideas of enclosure, the creation of space, issues of scale and the elements of architecture in relation to the mechanical instrument and its performance.

Proj. 2: Transforming Library: Building on lessons from Proj.1, as well as analysis from the co-requisite "Building Physics" course, we will design a small addition or "parasite" insertion into CMU's Hunt Library that will help transform (a small part of) the library and how we use and experience it. Program and the "library of the future" drive design, but the primary focus will be on the connections, transitions, and boundaries between inside and outside as well as adjoining spaces, as spatial experiences, as tectonic construction, and as performative thresholds.

LEARNING OBJECTIVES: At the end of the first year:
- You have the skills to create and communicate strong spatial definition in architecture, and to represent them in clear and highly articulated plans and sections.
- You are developing a personalized, systematic design process that can be harnessed with confidence to produce rigorous, poetic, and ingenious architecture by the deadline
- You work iteratively, always producing several variations in any step of the process
- You seek feedback, and incorporate it productively into your design process.
- You see constraints of all kinds as levers of creativity and ingenuity.
- You use criteria outside of your personal desires as primary motivators for design
- You look for systems or patterns in the given, external circumstances of an assigned project (site, precedent, materials, spaces, building type, program etc.), and seek to establish systems, geometries, and rules to generate coherent, rich design.
- You are learning to overcome setbacks, and developing tools for becoming "un-stuck"
- You have command of, and can select appropriately from, a wide array of architectural drawing and representation skills (2D and 3D, analogue & digital techniques, physical and digital models) for the most effective, efficient, and elegant results.
- You are confident in using the computer, 3D modeling and ideas of computation to motivate both rigorous and experimental design variations
- You implement research skills relevant to the design process, and to begin to understand both the similarities and differences between research and design.
- You have begun to explore how architecture is made and constructed, and use that understanding to create vital and memorable, materialized experiences.
- You feel confident making robust, well constructed models that begin to move beyond mere representation, towards prototypes that test performance and ideas.
- You are accumulating experience to discuss the fundamental elements, basic design principles, and important disciplinary questions of our field, so that you can begin to define "what is architecture?" and distinguish it from related disciplines.

STUDIO CONTENTS / EXPECTATIONS / GRADING

FACULTY: As in 48-100, the studio will be led by a coordinator (Kai Gutschow), who will oversee all studio activities. See him with any and all concerns, especially if you need help. The class will be divided into two studios (A&B), each led by a team of three instructors. This enables greater dialogue and more viewpoints to be expressed and learned. Although the instructors all collaborate and meet regularly, and studios will each do identical projects, slight differences in approach will inevitably evolve in each studio. Students are encouraged to explore both studios, and get to know and learn from ALL the instructors.

Studio A: Talia Perry, Nida Rehman, Kent Suhrbier
Studio B: Lucas Bartosiewicz, Gretchen Craig, Annie Ranttila
Other Instructor Resources: Scott Smith, Martin Aurand, Eddy Man Kim, TA's, etc.

STUDIO SCHEDULE: We will meet from 1:30-4:20 every M/W/F in MMCH studio spaces. There will be a series of lectures, presentations, workshops, demonstrations, crits, and reviews during studio (see schedule for details). In addition, there will be woodshop sessions and field trips outside of studio. You should attend, take notes, and participate in ALL events and integrate them into your design work.

WOODSHOP: An important part of first year studio is becoming comfortable in the wood shop, learning the safety regulations, and being proficient on all the machines. Every student is required to sign up for, and attend a one-hour shop session outside of studio every week (Tu./Th 2:00-2:50 or We. 9:00-9:50). Scott Smith will give demonstrations, and offer help with questions or difficulties related to the fabrication of the studio project.

READING: Students should have read Peter Cook's Drawing the Motive Force of Architecture (2013) and Lebbeus Woods' Slow Manifesto (2015) over the winter break to begin the habit of reading more. Alongside the design projects this semester, instructors will lead discussions every other week on an array of theoretical writings and investigate important precedents in order to build skills in "reading" and analyzing architecture, drawings, and texts. The goal is to understand architecture as a discourse, a constructed cultural practice, and a vehicle for exploration, as much as a building. In general, students should make a habit of READING MORE about architecture: the best students usually read the most! Go beyond the blogs and internet. Get books on any subject, either through searches, or serendipity. Instructors will check for a rotating supply of new books on your desk every week: talk to them about your readings and interests!

LECTURE SERIES: SoA organizes an impressive lecture series each semester, bringing some of the world's most notable architects and thinkers to campus. You are REQUIRED to attend them ALL. Take notes and discuss them in studio. Also seek out lectures offered by the CFA schools of Art and Design, but also robotics and other departments on campus and at Pitt, as well as cultural events and happenings throughout the city!

FIELD TRIPS: There will be at least one long distance field trip offered to see architecture in person, and discuss ideas with instructors and peers *in situ*, an essential part of your architecture education. Plan early to clear your calendar, inform other instructors that you will be missing class, and locate the necessary funds (approx. cost is $200 + food, exact costs TBA). Stay tuned for details!

WEBSITES: www.andrew.cmu.edu/course/48-105/ contains assignments, readings, galleries of work & resources. Blackboard (www.cmu.edu/blackboard/.) is useful for emails and sharing documents: The library has a special page dedicated to 48-105 studio research: http://guides.library.cmu.edu/48-105. The archpcserver will be used to submit final work files at: \\archpcserver\Studios\S17-48-105. Continuing from last semester, we will use www.Realtimeboard.com to submit, share, and give feedback on your work.

SKETCHBOOK: One of the most important parts of establishing a rigorous design process is documenting your workflow meticulously, so you can reveal, understand, and improve the evolution of your ideas. Keep a single, medium-sized sketchbook to record ALL your ideas for studio, from research, lectures, and all projects. You are expected to fill at least 5 pages/week (at least 75pp./semester) and post work in studio and online regularly for feedback & peer review. Pages should be FULL of multiple iterations of quick sketches, as well as annotations/explanations, and can be added to, reworked, or improved over time.

You should photograph your sketches, trace drawings, sketch models, computer work, and other process work with a camera or phone, and then upload them to www.Realtimeboard.com. We will use this resource in parallel with the digital media course. More information to follow

PORTFOLIO / PROJECT DOCUMENTATION: As part of an effort to record your work for the future, especially for school websites and your own portfolios, the School REQUIRES all students to create and submit graphically well-designed "project documentation" of all projects. This semester we will ask you to prepare portfolio-like documentation of your projects soon after we finish each one using custom templates for the 48-105 studio. These will be collated at the end of the semester and submitted to the archpcserver as per School requirements. Submisson of these 'portfolios" or project documentation, is required. Stay tuned and see website and Blackboard for more info.

EXPECTATIONS / ADVICE

Collaboration & Teamwork: Architecture is a "team sport," with many different people contributing to the final products. The design studio should be, too. Make your design process collaborative with all your instructors and fellow students. Share inspiration, information, and responsibilities freely. Be supportive of each other. Respect character and personality differences. Since collaboration is essential, working in the studio on studio projects (except shop and computers) is required. Work to inspire, be a leader in the studio.

Participation & Speaking: You are expected to participate actively in all discussions and pin-ups. If you are shy or have difficulty speaking up, practice with your friends, and ask your instructor for help. Architects MUST be able to speak clearly, loudly, and with confidence in public.

Intensity & Time: Be efficient, learn to develop good time-management skills. Studio sessions should be intense and super-focused. Unsupervised time should be highly productive and self-motivated. Multi-tasking is by definition distracted working. Avoid distractions such as social media, videos, leaving the studio, etc.

Iterations and Variations: Architectural design is a complicated, multi-layered process that requires lots of "practice": lots of time, reflection, searching, setbacks, and effort. You won't get it right on the first try; you need to stick to it, and do it over and over. Your work should be iterative, cyclical, constantly coming back to explore issues, rather than rigidly linear. Work to find multiple and alternate solutions at all points of the process, from first idea to final drawing. Avoid being stubborn or bound to a single proposal. Always move forward with several ideas, rather than needing to "start over." Be sure to record your various design iterations.

Rigorous Design Process: Seek to be as rigorous and methodical as possible about your intent and design process. Arbitrariness, randomness, chaos, and blind intuition are not "architectural." Allow the ideas to "emerge" out of the process, engage in "form-finding", rather than willfully imposing *a priori* ideas onto the project. Explore broadly, and get input from a wide variety of sources (instructors, peers, readings, travel, etc.), but in the end your design process must lead to a single, rigorous, personal synthesis of your learning and experience. It should be coherent, not just a compilation.

Constraints / Multiple Parameters: Architecture is always a mix of multiple parameters and constraints that need to be balanced with design speculation and risk taking. Take advantage of the constraints. See them not as shackles, but as levers of creativity and ingenuity. The best designs are often the result of the most constraints. Avoid using your personal desires or taste to justify design; avoid the words "I want".

Seek Feedback & Ask Questions: Be curious; ask specific questions, and invite feedback and criticism, explore very different ideas. Always try to answer "why" things happen, not just how. Allow yourselves to take the suggestions of critics or borrow from past masters or existing solutions. Be sure you have specific questions for your instructors about your worn work, and for your peers, about their work. Try to be precise and focused in your questions, and not vague or overly open-ended.

Speculation & Flexibility: You should be willing to try new things, to try things you don't want to, to explore new ideas, to follow suggested feedback, but also to be bold, to take a stance, and to be amazed by things you did not expect. Sometimes rules need to be broken in order to supercede their preconceptions. We want you to experiment and speculate, and yet be deeply committed to your ideas at each step of the way. Be flexible and not afraid to alter direction, ideas, or details, especially in relation to criticism. If you are comfortable doing things one way, try a different tactic. You are still a beginner: don't cling so much to your established ideas.

Tolerance for ambiguity and multiple truths: One of the most important skills learned in college is a tolerance for ambiguity or uncertainty, a willingness to embrace the incomplete and indefinite, to stick with an approach or question despite the discomfort of not knowing the answer or where you're headed. It requires relinquishing control to make room for new, emerging, or unexpected connections to crystalize. Avoid "perfectionism" and "over-doing" it, particularly on process work. Instead, "Just do it." Accept the fact that there might be numerous ways of answering the same question, each with different positive results, but not necessarily all equally good or right. There are better and worse solutions, but there are no "right answers" in architecture. It always depends.

Constant Synthesis of Scales, Elements & Media: you should always work simultaneously on the design of the whole, and the design of individual elements, at several different scales, and in different media, looking at both the context and detail, moving constantly between all the scales and tools. Your design process should include multiple drawing types, a variety of media, and a range of speeds, and all drawings should be done with intensity to achieve high quality results. At all points in the design process you should have a "complete set" of high quality drawings available for feedback on your desk, rather than many incomplete fragments of process work, layers of poorly drawn plans, or lackluster sketches. Create drafts of all drawings early; don't wait for final presentations to synthesize your work.

Computing & Computation: Most students do not maximize the potential of the computer to change how we think and work as architects: they use it only as a glorified drafting tool. This semester we will focus on Rhino. You should strive to develop a more sophisticated and professional understanding about how the computer & software work, about how you can integrate more complicated parameters and implement more advanced form-making into your design process than is possible without it. All students should seek advice, feedback, and help to improve their computing skills to become more sophisticated users of the amazing tools that are changing the nature of architectural practice and construction.

Integrated Research & Theory: All true creativity and invention builds on existing ideas. Read, discover, and speculate on how your ideas fit into, and build on, the rich traditions of architectural discourse, theory, and know-how. You can't invent new knowledge unless you know how to build on the existing ideas.

EVALUATION CRITERIA: Grades will be assigned based on the following 10 criteria. If you have doubts about how well you are doing, ASK your instructor, COME see the coordinator, and/or GO find help with advisors, including Heather Workinger. Don't wait; don't assume you know.

1) Passionate and collaborative attitude & effort; works hard, eager to learn; a leader in the studio who works well with others, helps classmates, shares and promotes greater understanding in everyone.

2) Comprehension of the problem and goals; asks questions for greater understanding; understands what is being taught, and what should be learned; initiative beyond what is expected in the project statement

3) Strength of idea and conceptual clarity in design solutions; a high degree of challenge, quality, resolution & completeness in all phases of the work; able to articulate "why?" each aspect of the design exists

4) Rigorous design process; able to understand and explain the individual process and decisions-making; uses tools (especially the computer) in a sophisticated and professional manner to achieve clear results

5) Seeks feedback & responds well to criticism and multiple points of view; not stubborn. But also self-motivated, self-directed, does not wait for answers, shows initiative.

6) Integrates research into the design process, from a broad range of resources, including precedents and ideas from beyond the current studio and courses; bring your own background and interests to the studio.

7) Works willingly within constraints, asks questions about, and balances between multiple (sometimes conflicting) design parameters, understands the power of limits, concision, and editing.

8) Dedication to iteration, ability to create and distinguish between multiple solutions; seeks to develop a systematic and methodical process, creating rule-bound solutions, with rigor, refinement, and richness of detail

9) Commitment to imaginative exploration and creative problem-solving, a willingness to explore unfamiliar ideas, take risks, and a growing comfort with uncertainty, ambiguity, and multiple truths; open minded.

10) Clarity of communication, excellence, and rigor in graphic, written, and verbal modes, both analog and digital, 2D and 3D; work goes beyond the merely factual, and expresses ideas and a particular point of view

RULES, GRADING, FINE PRINT

Academic Integrity: All 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, especially with regard to tolerance, cheating, plagiarism and other behaviors that imperil learning, respect, and collaboration. See https://www.cmu.edu/academic-integrity/index.html.

Professional Work Space: Your foremost intention as an architect is to create spaces that will *improve the human condition*. The studio environment is no exception. You are expected to respect and maintain the studios as the best possible places for exploration and expressing architectural ideas. Keep the studios neat, **clean** and professional looking. Share the space, desks, and wall space. Use the large open space of the 1st year space to promote flow and dialogue between studios, but also respect and be considerate of peers, especially with respect to noise and chatter during studio time. Clean up the space around you regularly, and empty the space of all work, materials and trash at the end of the semester.

Forbidden: No food, no audible music, no use of cell-phones in the studios or lecture hall during class times. Minimize them during other times. Avoid watching videos, texting or using social media while working. Science has proven that "mutli-tasking" is actually impossible, it leads to diminished focus and performance. Do not drag the desks across the hardwood floors. Drawing or cutting on desks or walls or floors, or otherwise defacing or soiling school property is forbidden. Spray-mount and spray-paint are forbidden from all parts of MMCH! Avoid plaster, resin, and messy projects in the studio. Clean up!

Attendance: Design studio is the backbone of your architectural education. You are required to attend and be on time for every studio, including all the lectures. Studio starts promptly at 1:30. Come prepared, and ready to learn. You are expected to stay in class through the end of studio at 4:20, or longer for reviews, or if your instructor expects it (except for approved extra-curricular activities). Lateness, excessive coming-and-going, and leaving early are disruptive, disrespectful, and unacceptable. If you will be late, or cannot make it to class, or must leave early, always notify your instructor and the coordinator in advance by email. *More than three late arrivals or absences (excused or un-excused) can result in failure and expulsion from the studio.*

Excuses: In general, we do not accept excuses of any kind for missing studio or coming late. A visit to the nurse or doctor's office is NOT considered an "excused" absence. Only a note from a university official, or a doctor that *explicitly forbids you from attending class*, constitutes an excuse. When in doubt, come even if sick!

Completeness & Deadlines: There are strict deadlines for studio projects in the 48-105 studio. We will mark down all students who do not have all the minimum requirements by the deadline without an official excuse (as determined by the academic advisor and the coordinator). Every effort will be made to discuss exceptions: when in doubt, see the coordinator!! In order to make final reviews celebrations of excellent work, incomplete projects may NOT be allowed to present. Such work will be graded afterwards, and marked down for incompleteness / lateness. Working past the project deadline in any way without the permission of the coordinator will lower your grade. Those students who have obviously done less work will be open to comments about this during the review, and will be granted less review time: "less work begets less feedback." You must complete ALL the assignments by **May 10, 2017** in order to receive a passing grade.

Redoing / Improving Your Work: All students are encouraged to keep improving their work, even after the assignment is due, in order to demonstrate their willingness and ability to work with feedback and meet expectations. If you improve your work after it has been evaluated, please inform your instructors, so they can note the improvement and possibly raise your grade. No work can be submitted after final deadline.

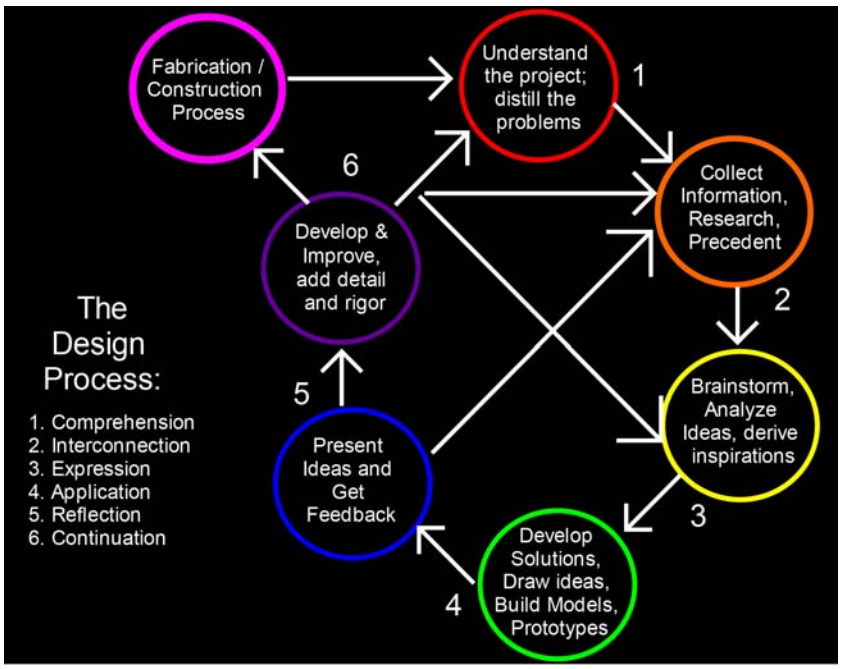
Standards: We will use the following grading standards:
A - excellent, enlightened invention. Superlative or exemplary work. Initiative and passion that exceeds what is expected in the project statement. Significant understanding of the problems and key issues. Conceptual clarity. An attitude of self-motivated exploration, open-mindedness, and a willingness to benefit from criticism.
B - very good, convincing development and comprehensive resolution. Excellent effort, some exemplary work, a thorough understanding and solution to the problem. Project displays conceptual foundation, well crafted. Competence and mastery of skills. Open, inquisitive, and enthusiastic attitude.
C - satisfactory, exploration of alternatives in the resolution of the project. Satisfactory or adequate work which meets the minimum requirements of the problem and course; is it passing, but should be improved. Shows understanding of the problem, with some deficiencies. Reasonable mastery of skill and concepts.
D - deficient skills, process, or product that does not show enough understanding of the problem or expectations. Consideration of factual knowledge, but often attended with a closed-minded attitude with respect to criticism and self-motivation. Long term, this work is unacceptable in a professional program.
R - repeat. Work which is unsatisfactory, which does not meet the requirements of the problem or course, and shows a serious deficiency in skills or effort, or is incomplete. Raises questions with respect to the future success within the program.

Grading Distribution: Your studio grade will be determined by the coordinator and your studio instructors. The grading process in 1st year is focused heavily on "process" (this includes sketches, research, class participation, willingness to explore, your enthusiasm and passion for the subject), as well as the final product and performance at reviews. The coordinator, who is responsible for the pedagogy of the entire studio, is responsible for 30% of your grade. The final grade will be weighted as follows: Proj. 1. (50%) + Proj. 2. (50%) = 100%. The mid-term grade will be a statement about progress and promise, based on the grades for Proj. 1, but also an indication of the passion and trajectory of the student.

Special Needs: Students with any documented medical, psychological, or learning conditions that require special classroom accommodations MUST see the coordinator as soon as possible so we can make the appropriate arrangements. Where possible, you should present an official "special accommodations form" (see https://www.cmu.edu/hr/eos/disability/students/index.html). Ask for help right away, don't wait. Failure to seek help well before the problems arise will not be tolerated.

Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit http://www.cmu.edu/counseling/.
If you need HELP, reach out to a friend, faculty or family member you trust to get support!

EMERGENCY: In the event of a true emergency please contact the CMU police at 412-268-2323. For all other special situations, please contact the coordinator as soon as possible so we can make arrangements with respect to studio, or see Heather Workinger (haw5@andrew.cmu.edu), or the main office.



Architecture Studio: 1st Year Spring

Spring 2017, CMU, Arch #48-105

Coordinator: Kai Gutschow
Email: gutschow@andrew.cmu.edu

S'17 Schedule - as of Jan 18 (Subject to Revision: see www.andrew.cmu.edu/course/48-105)

Week / End	Monday 1:30-4:20	Wednesday 1:30-4:20	Friday 1:30-4:20
#1	**Jan**. 16 MLK Celebration **No Studio**	18 *All School Mtg, 1:30-2:50* Start Proj.1 with instructors	20
#2	23 Lec.1 - Discursive Drawing, MM103 DUE: Drawing of Tool *SoA Lec. Odile Decq*	25 Readings #1 - 3:20-4:20 *← Art Lec. Sandi Hilal (1/24)*	27
#3	30 Lec..2 *(Media: Drawings Due)*	**Feb. 1**	3
#4	6 *(Physics: Lighting Test 2/7)* →	8 Readings #2	10
#5	13 *SoA Lec. Grafton Architects*	15	17
#6	20 *SoA Lec. Studioteka Design*	22 Readings #3 *← (Arch'l History Exam 2/21)*	24
#7	27 Lec.: Begin Proj.2 Library *SoA Lec. Selldorf Architects*	**Mar. 1**	3
#8	6 *(Physics: Lighting Test 3/8)* →	8 Readings #4 *(Media: Shade-Shadow Test)*	10 Mid-Semester Break **No Studio**
	Mar. 13-17 Spring Break		
#9	20	22	24
#10	27 Symposium: What is a Library? *SoA Screening: Making Space*	29 Readings #5	31 Class Trip →
#11 Class Trip	**Apr.3** *(Arch'l History Exam 4/4)* →	5	7
#12	10 *(Physics: Thermal Test 4/12)* → *SoA Lec. Nida Rehman*	12 Readings #6	14
#13 Easter	17	19	21 Spring Carnival **No Studio**
#14 Carnival	24	26 Readings #7	28
#15	**May 1** Pre-final Drawings Due	3 *(Media: Final proj. due)*	5 CMU Classes end
#16	**May 8 FINAL REVIEW**	10 Student Conferences	12 DUE: Studio Document'n *(Thermal Proj. Due, 5/12)*

Co-requisite Courses/Workshops:

- **Shop Sessions**: T/Th 2:00-2:50 & Wed. 9:00-9:50 - Scott Smith
- **Analog & Digital Media** -- M/W/F. 10:00-11:50 - Doug Cooper & Eddy Man Kim
- **Building Physics** - T/Th 10:30-11:50 - Omer Karaguzel
- **Architectural History Survey 1** - T/Th. 3:00-4:20pm - Diane Shaw
- **Freshman seminar** - T/Th 12:00-1:20pm - Heather Workinger