

CMCI STUDIO
CRITICAL MAKING STUDIO
APRD-5007-001: Critical Making Studio 2
Fall 2018
Wednesday, 9am – 12pm

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Office hours by appointment.

Nothing is a mistake. There's no win and no fail, there's only make. ~ John Cage

COURSE DESCRIPTION

Critical Making Studio 2 is a first semester project-based studio course that provide a foundation in the creative process of making with new and emerging digital and physical technologies responsible for shaping and reshaping the world around us. In this course students work towards becoming fluent across digital and physical creative practices used in the development of new products and services. This includes developing project documentation, building skills in modern web development tools and workflows, 2D/3D modeling using Computer-Aided Design (CAD) tools such as Rhino and Autodesk Fusion 360, and leveraging digital fabrication tools and materials such as 3D printing and CNC machining to produce physical prototypes.

COURSE OBJECTIVES

1. Develop students' awareness of current research and creative application of emerging technologies for making; Analyze and deconstruct systems of logic, design, and pattern to understand fundamental frameworks, concepts, and patterns of thought; Develop the ability to collect and filter information, formulate questions, and propose hypotheses.
2. Establish design protocols for students to exercise the interplay of critical thinking and critical making; Sharpen senses in design methodologies and emerging practices; Learn by evaluating, imitating, questioning, and recreating processes or systems of logic, design, and pattern.
3. Further students' creative practices and proficiencies that support the generation of quality work through hands-on making across a variety of materials and disciplines.
4. Advance creative work through critique, reflection, presentation, and documentation.

CLASS EXPERIENCE

This studio course is project-based and hands-on. Each week will consist of instructor-led discussions introducing new concepts. Students will work individually and in groups with class time being a combination of lecture sessions and working sessions. Informal critiques will take place weekly in the course of discussion about projects. Students will develop deliverables based on project parameters and their areas of interest. Deliverables will reach varying levels of fidelity based on project structure and instructor expectations.

SCHEDULE

The course will follow a general pattern of five 3-week project-based phases. Each phase will consist of weekly assignments and end of phase projects. Review the course deliverables section for more information.

This semester, the course will be exploring a variety of themes spanning digital and physical making. The full class schedule can be found at <http://make.cmci.studio/>. Be sure to check the schedule often.

Phase 1: Going Digital

In this phase students will become familiar with tools and workflows used in the production of digital media ranging from project documentation to technology stacks used for modern web development. Students will work with the languages of the Internet (HTML / CSS / JS) to develop a greater understanding of computational foundations and digital product development.

Phase 2: Web Applications, Libraries, and Frameworks

In this phase students will advance their understanding of tools and workflows used in modern web development. Using industry standard tools such as Node.js and React, students will deepen their understanding of how to develop and deploy functional web applications.

Phase 3: From CAD to CAM

In this phase students will become familiar with 2D/3D modeling workflows used in product prototyping and design. Using industry standard tools such as Autodesk Fusion 360 and Rhino 3D, students will learn how to work spatially and parametrically in the digital domain in preparation for digital fabrication in the physical domain.

Phase 4: Digital Fabrication

In this phase students will become familiar with CNC machining, tool path design, and materials used in the development of physical devices and products. Students will realize their digital designs using 3D Printing and/or CNC Milling. They will explore a variety of soft and rigid materials such as foam, silicone, rubber, plastic, metal, and wood.

Phase 5: Final Projects

In this phase students will propose and realize a final project.

COURSE DELIVERABLES

The course deliverables will consist of weekly assignments and five 3-week projects. The Phase 5 project is the final project for the course and will carry more weight than the other four projects.

Assignments are due by the start of the next class period and will not be graded. Even though weekly assignments will not be graded, they are expected from all students. Assignments will be posted on the class schedule each week for each phase.

Projects can be done independently or as a group of 2-3 people. In groups, the workload must be distributed as decided by the team members and guided by project parameters. All students are required to provide documentation for contributions in every project worked on.

This studio based course is 3 credit hours which means students should expect to dedicate at least 2-3 hours per credit hour. This translates into 6-9 hours per week. Consider 6 hours a minimum expectation for one studio course and plan accordingly.

EVALUATION

Work for Critical Making Studio is evaluated based on the following:

1. Attendance and Participation. This is a project based course and will involve the presentation of concepts, sketches, and prototypes as well as the critique of fellow classmates. All students are expected to be active participants in both activities.
2. Quality and Quantity of project deliverables. This studio based course requires a healthy level of *creative immersion and balance* to be successful. Explore your creative process through making and always deliver to the best of your abilities. Achieve quality through quantity.
3. Collaboration will also be a factor of evaluation if you choose to work on projects in teams of no more than 2-3 people. The division of duties on any project needs to be clearly defined and documented by all team members and will factor into individual evaluations.

ATTENDANCE

All students are expected to attend every class session. If missing is unavoidable, notify faculty and any teammates you are currently working with as far in advance as possible.

RESOURCES

All course resources including related readings, shop safety, materials, and equipment can be found at <http://make.cmci.studio/>.

Appendix: University Policies & Procedures

A full list of CU's academic policies can be found online at <https://www.colorado.edu/policies>.

Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

For more information, see the policies on classroom behavior and the Student Code of Conduct.

<https://www.colorado.edu/policies/student-classroom-and-course-related-behavior>

<https://www.colorado.edu/osccr/>

Departmental Policy on Class Attendance

In an effort to accommodate student demand for courses, the Department of Advertising, Public Relations and Media Design (APRD) will administratively drop enrolled students who do not attend both of the first two class meetings in a semester of term.

Disability

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see Temporary Medical Conditions: Injuries, Surgeries, and Illnesses guidelines under Quick Links at Disability Services website and discuss your needs with your professor.

More Information:

<https://www.colorado.edu/disabilityservices/students>

<https://www.colorado.edu/disabilityservices/students/temporary-medical-conditions>

Religious Observance

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please notify me as quickly as possible regarding any possible absences so that we can plan your work accordingly.

See the campus policy regarding religious observances for full details.

<https://www.colorado.edu/policies/observance-religious-holidays-and-absences-classes-andor-exams>

Discrimination and Harassment

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. The University of Colorado does not discriminate on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status in admission and access to, and treatment and employment in, its educational programs and activities. (Regent Law, Article 10, amended 11/8/2001). CU-Boulder will not tolerate acts of discrimination or harassment based upon

Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, or veteran status. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://hr.colorado.edu/dh/>.

Honor Code

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion).

More Information:

<https://www.colorado.edu/policies/academic-integrity-policy>

<https://www.colorado.edu/osccr/honor-code>

Athletic Events

The Boulder Campus has two separate but similar policies governing conflicts between a student's athletic events and his or her classes and exams. One policy governs students involved in intercollegiate varsity athletic events. The other policy governs students involved in Club Sports events. Each policy is accompanied by a detailed report with guidance on how instructors may deal with conflicts when they arise. Both policies may be viewed in detail on the Boulder Faculty Assembly's website:

Policy on conflicts involving Intercollegiate Athletics,

<http://www.colorado.edu/FacultyGovernance/committees/IAC.html>

Policy on conflicts involving Club Sports

<http://www.colorado.edu/FacultyGovernance/committees/studentaffairs.html>

The two policies are substantially similar, having the following terms in common:

- That it is the student's responsibility to notify each instructor, in the first week of the semester and in writing, about any known conflicts between academic requirements and athletic events.
- That instructors have full authority to decide whether and/or how to accommodate those conflicts. While an instructor has the right to refuse to make accommodations, he or she is permitted to provide such accommodations.
- That coaches are forbidden from initiating contact with instructors regarding schedule conflicts, grades, or academic progress. The Intercollegiate Athletics Office of Academic Support Services and the Recreation Center's Collegiate Club Sports coordinators may contact instructors about certain topics. There is no rule preventing faculty from contacting these support organizations. Policy terms that are specific to intercollegiate varsity events, as opposed to club sports events, include: That intercollegiate varsity athletic events during final exams, which are normally forbidden by university policy, must be approved in writing by the BFA Intercollegiate Athletics Committee well in advance of the event. Students involved in these events must then work with their instructors in regard to any missed work.