**School of Architecture | Georgia Tech | Spring 20xx**

ARCH 1020: Media + Modeling I (3 credits)

Credit Hours: 3 credits (3 contact hours)

Days and hours of class: Tues/Thurs 3:00 – 4:15pm

Instructor: Name

Office location/Email address

Office Hours

**Course Description** (from the Catalog) Go to <http://www.catalog.gatech.edu/colleges/coa/architecture/#coursestext> to find the course description for the class.

Intermediate approaches to two and three dimensional modeling and representation in architecture using both manual and digital media and techniques.

**Instructional Methods**

This course provides foundational instruction in the theory and practice of architectural computation and geometric description. The goals of this course are: to provide students with the core technical skills necessary to design and document architectural designs, while in parallel establishing a foundation of inquiry into the geometric and mathematical foundations of architectural geometry, form and space.

Students will be introduced to ways of modeling geometry using computer aided design through lectures, tutorials, and assignments. The course is organized as a series of weekly modules that each introduce a topic of architectural / geometric representation. Lectures will provide the background, theoretical framework and historical context of the topic. Each session will have a designated workshop where students are expected to practice and utilize introduced concepts towards the completion of given assignments. Assignments will cover different types of geometry, compositional complexity and introduce students to different mediums of architectural production and media.

Assignments will be organized around a group of selected precedent projects chosen from a range of historical epochs in architectural history, in order to develop rich and articulate drawings and models that are full of detail and aesthetic features. Exercises will digitally reproduce, expand on, and assemble design elements from these historical precedents into organized compositions and presentations of increasing complexity. Students will work individually and in groups. Each student group will be first developing a set of drawings that extract and diagram elements from their historic precedent (such as windows, columns, decorative elements, vaults, etc.). These elements will be used to generate new assemblages by combining multiple variations that suggest a new composition through sections, plans and elevations, 3D models and ultimately 3D printed physical models and animations. These drawings will become essential to develop a digital model that captures the spatial qualities that are represented in drawings. The final design will be displayed in an exhibition format using foam board mounted drawings.

# Learning Objectives

This course is designed to accomplish the following learning objectives:

1. Learn basic orthographic drawing and drafting methods
2. Ability and clearness to present ideas through digital models and vector based graphics
3. Understand the basic relationships between digital models, scale and space
4. Ability to use line-weights and drawing hierarchies to differentiate building elements
5. Clearness and precision to model and represent orthogonal geometry
6. Ability to explain design procedure through the use of diagrams

Software programs that will be covered include AutoCAD, Rhinoceros, Adobe Illustrator, and Vray for Rhino. The class is structured around four main sections with associated assignments that will facilitate learning outcomes to establish core skills necessary for design studios and subsequent professional practice.

**Course Procedure and Organization**

Students will be introduced to the content of the course through four main topics, with associated software programs, that together develop a foundational skill set of architectural modeling, drafting and graphic representation:

* Module 1: 2D Drafting (AutoCAD)
* Module 2: 2½D Presentation (AutoCAD -> Illustrator) + Midterm Review
* Module 3: 3D Modeling (Rhino)
* Module 4: 4D+ Animation and Rendering (VRay)
* Final Presentation

The class is lecture/tutorial and assignment based. Lectures will introduce various geometric principles and compositional aspects related to the topic. Tutorials will provide technical instruction on the software applications and techniques discussed. Lectures and tutorials will be uploaded after the class for students to review and practice the covered tools and information. Students are encouraged to take notes and follow the workshop sessions by working on either given examples or their own design models. In parallel to lectures, students will be given additional online tutorials to practice and improve their skills while working on assignments.

Throughout the 15 weeks the technical skills required for the course will be implemented through software tutorials and technical exercises (1/3 of the overall course time). Conceptual understanding and implications for the design process will be explored through in-class work sessions (2/3) that require student participation and engagement. During in-class workshop sessions students are expected to develop conceptual understanding and implications for the given design tasks.

**Course Requirements and Assignments**

The class will be structured around 4 main assignments plus a final presentation and supplementary quizzes and exercises spanning over 15 weeks. Requirements for the course are successful completion of the assignments and showing a proficient understanding of programs that are covered. Attendance is mandatory.

Students are expected to spend at least 6 hours a week on practicing and mastering foundational skills for diagramming, 3d modeling and drafting techniques. The assignments are structured to accommodate student learning outcomes and foster practice by utilizing similar tools and concepts. Each assignment builds on those that have come before. Therefore, from the very beginning of the semester, the more care you put into each individual assignment, the more prepared you will be for all subsequent assignments. There is no better guarantee of success in the class than consistent engagement and a determination to do the weekly readings according to a regular, timely schedule.

**Assignment List\***

All assignments will be graded on a point scale system that adds to 100 points total. The percentage / points for each assignment is listed below and shown on the schedule:

Module 1: Drafting (15 points)

Module 2: Presentation + Midterm Review (20 points)

Module 3: Modeling (15 points)

Module 4: Animation and Rendering (15 points)

Final Presentation (25 points)

Attendance + Participation (10 points)

**Grading Scale\***

The grade scale for all individual components of the course as well as for completion of the final course grade will be as follows:

100 - 90 % - A - Excellent

89 - 80 % - B - Good

79 - 70 % - C - Satisfactory

69 - 60 % - D - Minimally Passing

59 - 00 % - F - Failing

\*Failure to submit assignments on time or meet the specified requirements will directly influence your grade for the course. There will be no incompletes awarded without appropriate reason or without a prior meeting, in person, of the student and the instructor. All assignments must be completed in order to receive a passing grade in the class.

**Archiving**

In some courses, selected students may be required to submit physical examples of their work or digital examples no later than one week after the end of term, to their instructors or administration for archiving. By enrolling, each student grants a license to reproduce and display his or her work. This is a chance for students to have their work shown online and potentially featured in forthcoming publications.

# Class Schedule

See attached annotated class schedule. Please note: this schedule is subject to periodic revisions over the course of the term. Updated schedules will always be posted on the shared course folder.

# COURSE POLICIES

**Attendance**

Attendance at all class meetings is mandatory and crucial to successful completion of this course. If you do not present your work or participate in class your course grade will be affected. Attendance will be taken at the beginning of each class period and punctual arrival is required. Late arrivals or departures from class will be counted as absences; **more than two unexcused absences or three total absences will be grounds for reduction of your course grade by a full letter grade**. Absences will be excused only for medical or family emergencies documented in writing. Student must contact instructor as soon as possible to inform them of the emergency situation. Failure to do so will potentially result in an unexcused absence. There will be no incompletes awarded without appropriate reason nor without a prior meeting, in person, of the student and the instructor. Grade queries or disputes should be taken up first with one’s section instructor. If they cannot be resolved at that level, they may then be brought to the coordinator’s attention.

Your grade for this course will be determined based upon the quality of the work you produce, your improvement over the course of the semester, completion of required course assignments, quality of class participation, and attendance, attitude and ethical conduct.

Link to GT Attendance Policy - <http://catalog.gatech.edu/rules/4/>

**Grading**

Your grade for this course will be determined based upon the quality of the work you produce, your improvement over the course of the semester, completion of required course assignments, quality of class participation, and attendance, attitude and ethical conduct. Remember, grades are earned by you – not given by your instructor.

* A grade of “F” indicates a failure to meet the course requirements, including attendance, minimum requirements concerning presentation and fulfillment of course requirements. In case of an “F”, the course will need to be repeated.
* A grade of “D” means that you have significant attendance problems, your performance is poor, including failure to meet deadlines, the basic requirements of the course, and/or your project is not plausible.
* A grade of “C” means that you have met the minimum requirements of the course, but your project is plausible, even if substantially undeveloped.
* A grade of “B” means that you have met the basic requirements of the course and that your project is developed to the point where evaluation can be made according to the course criteria.
* A grade of “A” means that your project clearly represents both a clear understanding of course criteria, and a self-motivated exploration beyond the basic course requirements. Projects that receive grades of “A” are exemplary projects in terms of concept, production, and craft.

Evaluation of a student’s performance in each course is the responsibility of the instructor for that course. If the grade is disputed, a student may appeal to the instructor for a review. If, after the review, the student still believes that a grade has been assigned unfairly, the student may submit a written request for a grade appeal to the School Chair. The petition must clearly state the reasons for the appeal. A committee of faculty and students will convene to review the work and make a decision as to whether the grade will stand or be changed. Petitions must be settled and a final grade submitted to the registrar no later than three weeks after the end of the term in which the course was completed. The School Chair will inform the student of the committee’s decision regarding the grade appeal, and their decision is final.

A student may receive a grade of incomplete (I) by requesting permission from the instructor prior to the date of the final examination or presentation. Permission will be granted only under extraordinary circumstances and usually for medical reasons.

# Academic Integrity and Conduct

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. All Georgia Tech students should familiarize themselves with and abide by the Georgia Tech Honor Code: <http://www.catalog.gatech.edu/rules/18/>. Any student suspected of cheating on a quiz or exam or caught plagiarizing will be reported to the Office of Student Integrity.

For expectations of student and instructor conduct more generally, consult section 19 of the catalog listed above, entitled “Code of Conduct,” http://www.catalog.gatech.edu/rules/19/, and section 22, entitled “Student-Faculty Expectations,” at http://www.catalog.gatech.edu/rules/22/.

All persons in the classroom are expected to behave with courtesy towards others and in a way that does not interfere with the regular conduct of the class. Cell phones are to be turned off when students enter the classroom and should remain off for the duration of class; laptop computers are to be used only for taking notes; and students should not engage in private conversations while the instructor or other students are speaking. Anyone who does not adhere to these basic courtesies will be asked to leave.

# Accommodations for Students with Disabilities

Any student with a disability, that may require accommodation, should contact Office of Disability Services at 404-894-2563 or visit <http://disabilityservices.gatech.edu> to make an appointment to discuss his or her special needs and obtain an accommodations letter. He or she should also schedule an appointment to speak with the course instructor.

**Emergencies**

In case of emergency (e.g., fire, accident, or criminal act), please call the Georgia Tech Police at 404-894-2500. Please note that Perry Minyard, IT Support Administrator for the College of Architecture, is also a firefighter and an Emergency Medical Technician (EMT) certified in performing CPR.

**Ownership**

Physical copies of student work submitted to the school to satisfy course requirements—including, but not limited to digital files, papers, drawings, and models—become the property of the school. It is assumed as no obligation to safeguard such materials and may, at its discretion, retain them, return them to the student, or discard them.

# College of Design Facility Rules and Guidelines

Please consult the Georgia Tech Student Handbook regarding the use of facilities and all Institute policies. Aerosol sprays of any kind are strictly banned from the studio and surrounding areas. A new spray painting booth is now in operation in the COA shop, on the ground floor of the East Architecture Building.

Shop Use: All students using shop facilities must first have completed an orientation. Safety first, always! Noise should be kept to a minimum. Music may be listened to only through headphones, including evenings and weekends.

Studio Housekeeping: Students should feel free to organize their space creatively and expressively, but with respect to others around them. Try to prevent clutter from becoming a nuisance, distraction, or a hazard. The cleaning staff makes every effort to determine what is and is not trash, but their job can be made easier if you keep drawings filed and models off of the floor.