University of Florida | School of Architecture

ARC 2180 Introduction to Digital Architecture Fall 2016

ARC 2180 Introduction to Digital Architecture (3 Credits)
ARC 6911 Graduate Section 7112 (3 credits)

Professor: Sung Keun Hong Email: sungkeunhong@ufl.edu
Office: TBA Office Hours: TBA

Lecture
Meeting Times: M Period 10-11
Location: TUR L011

Lab Sessions
Location: ARC 116 CIRCA Lab

Section	Meeting Times	GTA	Email
2270 / 7112	Tues Thurs 2-3	TBA	TBA
2335	Tues Thurs 4-5	TBA	TBA
2347	Tues Thurs 6-7	TBA	TBA
Dept. Controlled	Tues Thurs 10-11	TBA	TBA

Course Communications:
The majority of texts, files, and information to be used in the course will be distributed via the UF Canvas course website. Students are advised to familiarize themselves with the Canvas interface, as announcements, assignments, and project submissions will be handled through the site. Students are also encouraged to use the built-in Conversations function for communications; check your UF email daily, as many critical announcements and updates will be made through this site.

Purpose of Course
The advent of digital tools in the past 20 years has led to a revolution in the way contemporary design practices are conducted. Architects of the modern age are required to be virtuosos at their instruments of production, encompassing analog and digital forms of representation, drawings, and modeling. The broad range of tools available at our disposal has led to diverse approaches regarding the conceptualization, exploration, production, and ultimately representation of architecture. In this mass sea of information overload, it is critical to identify, appropriate, and master the relevant tools of our trade in an efficient manner. This course aims to introduce students to the basic theoretical and practical foundations of digital practice while gaining proficiency with multiple workflows and operational paradigms current in contemporary practice.

Course Goals and Objectives
All students at the end of this course should show:
Awareness of
a. creative potential of computers and digital media b. the impact of computers on the process of design
Understanding of
a. the relationship between movement and space b. the relationship between experience and context c. the relationship between working method and product
d. digital media is not an end in itself, it is a means by which to create, study, and experience representations of architectural solutions
Ability to

a. create an architectural solution using digital media as a spatial design tool in all phases of design b. utilize specific software packages and transfer files between them c. choose an appropriate working method for a given problem
d. synthesize knowledge and skills obtained in previous architectural design studios and courses to decide appropriateness of each design tool for each design task.

Instructional Methods
This course will serve to teach students basic computer literacy while exposing them to the vast opportunities for the understanding and creation of place, space and architecture. We will begin learning the software through basic tutorials, leading into direct application for studio work. Students are encouraged to explore the abilities of all programs well beyond the realms discussed in class, learning through trial *and even* error in order to become more fluent. It will be the student's responsibility to discover the ultimate strengths of computer applications as design tools, and the inevitable limitations presented by this digital media.

This course is intended to supplement the ongoing work of design studio. Issues of site and urban analysis, digital design and site transformation, digital design development and detailing and design communication and presentation will be discussed during labs and lectures. This course is also intended to serve as preparation for further studies within the School of Architecture and professional work beyond.

You will not be expected to master all programs and tools within the 16 week semester. Instead, the purpose of this class is to introduce and familiarize you with the software through in-class demonstrations and assigned tutorials, in order to facilitate further learning and exploration on your own time. Due to the large number of students in this class, lab sessions are provided (and required) twice a week in order to allow time for more hands-on learning. Attendance for both lecture and lab sessions is mandatory, and will be recorded and factored into semester grades. Three unexcused absences total for both lecture and lab will result in a full letter grade deduction, while four and more unexcused absences will result in an automatic "E" grade for the semester.

Course Content
The course will cover:
01_ The basic underlying mathematics, theories, and concepts of CAD [Computer Aided Design]
02_2D raster/vector graphics workflow integration from production to presentation with Adobe Photoshop, Illustrator, and InDesign
03_2D drafting, annotation, plotting, and general CAD management with Autodesk Autocad
04_ Basic 3D modeling and presentation techniques with Google Sketchup
05_ Advanced 3D modeling in McNeel's Rhinoceros 5.0 to cover topics of three-dimensional modeling, analysis, strategies for diagrammatic representation, model analysis, and Rhinoceros as intermediate platform for workflow integration between various production platforms.
06_ Basic rendering with the following plugin for Rhino 5.0: Brazil for Rhino.
07_ Advanced rendering and management with plugins [VRay, Maxwell Render], scene setup and lighting techniques, material creation and development, camera and scene animation, and production render queuing.
08_ Learning integrated workflows to transfer content between all of the above programs.

The course will be conducted in the form of weekly workshops in the computer lab and accompanying weekly lectures to cover theories and methods, with brief lab assignments to ensure proliferation and adoption of course material. There will be 3 major semester projects integrated with the studio design project, utilizing representational techniques learned during the course of the semester.

Course Requirements
It is assumed that every student in this seminar will take an active role in ensuring its quality.
Come to class (on time). *Attendance is mandatory and will be checked every day.* ***Do the work.*** *Complete each assignment by its due date and scheduled time.*
Do your OWN work. *Plagiarism will not be tolerated and will result in a failing grade for the semester (not to mention disciplinary action at the university level).*
Get curious*. Take this opportunity to test your own personal boundaries.*

Software
CIRCA Lab will have copies of most of the important software, so purchase is unnecessary. However, it may be beneficial to invest in some of the software for personal use in the long term, since this will be your bread-and-butter far into your academic and professional careers. The majority of the companies offer free or deeply-discounted educational licenses.

Adobe : http://www.adobe.com/creativecloud.html
Autodesk: http://www.autodesk.com/education/free-software/all
Sketchup: http://www.sketchup.com/
McNeel: http://www.rhino3d.com/
VRay: http://www.chaosgroup.com/en/2/index.html
Brazil: http://brazil.rhino3d.com/
Maxwell: http://www.maxwellrender.com/

Texts and Disks
There is no mandatory text for this class. Handouts and readings will be provided and distributed as PDFs for download prior to class; it is your decision if you want to print them out for reference.

You will be required to come to class with portable storage devices if working off the computer lab computers. The disk as well as your personal online storage folders will primarily be used for project submissions for grading, and for storage and transportation between computers. You will want to transfer your computer work to a DVD at the end of the semester due to its extended shelf life. Flash drives and mechanical drives both have a tendency to fail irrecoverably, therefore periodical and redundant backups of your valuable work is highly advised.

COURSE POLICIES:

Attendance Policy
Late and /or incomplete work will not be accepted. Attendance and working in lecture and lab is mandatory. **Three unexcused absences** will result in a full letter grade deduction, while **four or more unexcused absences** will result in an automatic "E" semester grade. Unexcused late arrival or early departure from the seminar is unacceptable and will automatically count as an absence**. Plagiarism will not be tolerated, and will result in a failing grade for the semester.**

Grading Policies
15% Semester Project 1
25% Semester Project 2
25% Semester Project 3
25% Lab Assignments
10% Attendance

There will be three semester projects as well as roughly bi-weekly lab assignments that will test the understanding of the software and the application of the tools discussed in lab and lecture sessions.

Grading Scale

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Numeric Grade	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	0-59
Quality Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0

UF Grading Policy

Information on UF's grading policy can be found at the following location:
http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

****NETIQUETTE: COMMUNICATION COURTESY:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. [Describe what is expected and what will occur as a result of improper behavior]

http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf

GETTING HELP:

For issues with technical difficulties for E-learning in Sakai, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

** Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

Disclaimer: This syllabus represents my current plans and objectives for the course. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.