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|  FLORIDA ATLANTIC UNIVERSITY | COURSE CHANGE REQUEST Undergraduate Programs | UUPC Approval <u>2/27/23</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____ |
| | Department Architecture College Arts & Letters | |
| Current Course Prefix and Number ARC3185C | | Current Course Title Introduction to Digital Modeling and Documentation |
| <i>Syllabus must be attached for ANY changes to current course details. See Template. Please consult and list departments that may be affected by the changes; attach documentation.</i> | | |
| Change title to: Architectural Visualization Methods 2 Change prefix From: n/a To: Change course number From: n/a To: Change credits* From: n/a To: Change grading From: n/a To: Change WAC/Gordon Rule status** Add <input type="checkbox"/> Remove <input type="checkbox"/> Change General Education Requirements*** Add <input type="checkbox"/> Remove <input type="checkbox"/> <small>*See Definition of a Credit Hour.</small> <small>**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.</small> <small>***GE criteria must be indicated in syllabus and approval attached to this form. See Intellectual Foundations Guidelines.</small> | | Change description to: A continuation of ARC3133, this course explores advanced generative design strategies that leverage the importance of data in design decision-making. The impact of the current state-of-the-art methods on architectural production are examined relative to their theory and application. Change prerequisites/minimum grades to: ARC1301 AND ARC1302 AND ARC2303 AND ARC2304 AND ARC3133 Minimum passing grade: C Change corequisites to: No corequisite required Change registration controls to: n/a Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-). |
| Effective Term/Year for Changes: Fall 2023 | | Terminate course? Effective Term/Year for Termination: n/a |
| Faculty Contact/Email/Phone evermiss@fau.edu/ 954 6963417 | | |
| Approved by Department Chair _____ College Curriculum Chair <u>Eric Hanne</u> College Dean _____ UUPC Chair <u>Ethlyn Williams</u> Undergraduate Studies Dean <u>Dan Meeroff</u> UFS President _____ Provost _____ | | Date 2-8-2023 2/13/23 02/14/2023 2/27/23 2/27/23 _____ _____ |

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

ARC3185C Intro to Digital Modeling & Documentation (existing)
ARC3185C Architectural Visualization Methods 2 (proposed)

COURSE SYLLABUS

Credit Hours: 3 credits

Class Meeting Days: 3 hours/week

Instructional Method: In-person

Location: HEC #608 lab (6th floor)

Course Description

Existing Course Description:

~~Aims to develop basic skills in 3D modeling and graphic editing using a combination of software and address the designer's choice of software to facilitate the aggregation of one's work towards compiling final presentation boards.~~

Proposed Course Description:

A continuation of ARC3133 (proposed renaming: Architectural Visualization Methods 1), this course explores advanced generative design strategies that leverage the importance of data in design decision-making. The impact of the current state-of-the-art methods on architectural production are examined relative to their theory and application.

Prerequisites

Prerequisites: ARC1301, ARC1302, ARC2303, ARC2304, **ARC3133** with minimum grades of "C"

Course Objectives/Learning Outcomes

Existing Objectives:

~~This introductory course aims to promote an understanding of the ways digital tools have influenced architectural production and examine a number of representational tools such as CAD (2D, 3D) and graphics editing software, and the various ways in which they may be combined to offer a comprehensive (and composite) method of working. Students are expected to develop skills in 3D modeling using a variety of software like Rhino, Grasshopper, Sketchup and, with the additional support of tools like, ie. Illustrator, Photoshop, InDesign, prepare cohesive graphic layouts of 3-dimensional data. In this process, they will be required to reflect on the theoretical repercussions of using such tools within an architectural context.~~

Proposed Objectives:

This course aims to promote an understanding of the ways computational tools can influence architectural production and the ways in which they may be combined to offer an integrative method of designing. Students are expected to develop skills in state-of-the-art techniques and methods using a variety of generative computational tools. In this process, they will be required to reflect on the theoretical and practical repercussions of data driven methods within an architectural context.

Course Evaluation Method

| Course Stage | Course Schedule | Course Content | Grade Weight |
|----------------|-----------------|--|--------------|
| Module 1 | Week 1-3 | Theory of Computational Design Thinking (individual work) | 20% |
| Module 2 | Week 4-7 | Generative Design Methodologies (individual work) | 25% |
| | Week 8 | Mid-term Review | 5% |
| Module 3 | Week 9-12 | Strategies implementation in Architectural Design (group work) | 25% |
| Module 4 | Week 13-15 | Final Project (group work) | 15% |
| | | Final Review | 5% |
| | | Class Attendance and Participation | 5% |
| Overall | | | 100% |

Project Documentation of Student work

The School of Architecture reserves the right to retain all student work for the purpose of record, exhibition, and instruction. All students are encouraged to reproduce all work for their own records prior to submission of originals to the instructor. In the event of publication, the author or the work will be recognized and receive full attribution. Upon completion of the final review, all students are required to submit any requested design revisions and all digital material from the whole semester, through a shared Google Drive, or other online platform specified by the instructor, **by [specified date]**. Final grades will be withheld until this material is turned in.

Grading Scale

For this course, group work and individual work will account for specific parts of your grade. Within group projects, students may have an opportunity to comment on the quality, content, and volume of work of their fellow group members. These comments shall be taken into account when assigning a final grade for participation and engagement at the discretion of the instructor. Though the grading rubric above will be used in evaluation of student performance, please keep in mind that each week is essentially worth a percentage of your grade. You will be graded often in a timely manner, so you are certain of your academic standing in studio. Also note, that failure to follow verbal and written directions will negatively affect your grade. In specific terms, each percentage point is equal to one (1) point, with a cumulative value of one hundred (100) possible points.

Grade scale: A: 97-100 pts / A-: 93-96 pts / B+: 88-92 pts / B: 83-87 pts / B-: 79-82 pts / C+: 75-78 pts / **C: 71-74 pts (min. pass)** / C-: 67-70 pts / D+: 63-66 pts / D: 59-62 pts / D-: 55-58 pts / F: Below 55 pts.

In general terms, letter grades above indicate that students have achieved the following:

A to A- Excellent Work

Work of exceptional quality typically achieved through purposive self-direction, rigor, and expansive design investigations of the studio objectives. This work demonstrates a very high level of intellectual and material craftsmanship with results that are beyond the expectations established for a student at this level of study.

B+ to B- Good Work

Work of a high quality that exhibits insight, development, and academic performance above an average level. Work at this level exhibits a certain level of self-direction and discovery beyond a mere understanding of course content and objectives. Work is independently directed and demonstrates a high level of intellectual and physical craftsmanship.

C+ to C Average Work

Average work satisfies the objectives of the course, demonstrating an understanding of course content, and competence in concept production, design development, and craftsmanship in final work products. This work is typical and exhibits modest or normative intellectual and design ambition.

C- to D- Marginal Work

Marginal work is failing work, characterized by indifference and a marginal understanding of course content. This work is incomplete, manifesting little initiative, and lacking design development and integration of key concepts in the final work products. Students who earn a grade lower than a C typically do not read assigned literature, investigate relevant precedents, attend class, or maintain consistent progress in work production.

F Failing Work

Failing work is unacceptable and without substantive consideration of course content and/or satisfactory design development in work products. This work typically lacks synthesis of content, detail, specific course objectives, and/or is substantially incomplete. The work betrays incompetence and the inability to perform in a satisfactory manner at this level of study.

I Incomplete Work

Work that is Incomplete for a minor part of the course requirements due to an illness or other excused absence. An Incomplete is not intended to be an extension of the semester due to marginal performance. A passing grade is expected once the work is completed. An "I" is merely provisional and rolls over to an F in the following semester.

NAAB Student Performance & Program Criteria

The following National Architectural Accreditation Board (NAAB) Student Performance Criterion (SPC) are satisfied in this course. Definitions of the listed criteria can be found on the NAAB website. NAAB.org/Conditions

A.2 Design Thinking Skills

Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.

A.3 Investigative Skills

Ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.

A.4 Architectural Design Skills

Ability to effectively use basic formal, organizational and environmental principles and the capacity of each to inform two- and three-dimensional design.

A.5 Ordering Systems

Ability to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.

A.6 Use of Precedents:

Ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.

PC.5 Research and Innovation: How the program prepares students to engage and participate in architectural research to test and evaluate innovations in the field.

Credit Hour Policy

Outside of class time, it is expected that, on average, each student will work a minimum of 6-8 hours per week on homework assignments, readings, research papers, interactive tutorials, study groups or other projects.

Policy on the Recording of Lectures

Students enrolled in this course may record video or audio of class lectures for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. **Recording class activities other than class lectures**, including but not limited to student presentations (whether individually or as part of a group), class discussion (except when incidental to and incorporated within a class lecture), labs, clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations between students in the class or between a student and the lecturer, **is prohibited, unless otherwise stated by the instructor**. Recordings may not be used as a substitute for class participation or class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct and/or the Code of Academic Integrity.

Attendance Policy

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Certain sessions of the course may be recorded using Microsoft Teams, which is available to all FAU Students. The instructor will provide a sign-in link (Google Form) at the beginning of class. Students who **have not signed in 15' after start** of class will be marked as **late and will receive a 2 point penalty**; students who **have not signed in 30' after start** of class will be marked as **absent** for that session. Each unexcused absence shall result in a penalty of 5 points from your final cumulative point total. Furthermore, students **absent more than TWO classes** without serious reasons (medical or otherwise) given in writing in advance of the class may-upon the instructor's judgment-fail the class. If the class the class meets once a week, each 3-hour session is equivalent to two regular 1.5hr sessions. Students absent from a required presentation, assignment, or examination will receive, without exception, an F for that presentation, assignment, or examination.

Policy on Makeup Tests, Late Work, and Incompletes

Absence does not absolve the student from homework, assignments, or work progress due on the day of absence and the work due the following class. In case of absence, it is the student's responsibility to contact someone from the class to get information on the material covered and assignments. **Late work will not be accepted.** Missed projects or class activities due to an **unexcused** absence will result in a zero for that activity.

Classroom etiquette and participation: In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers or radios are to be disabled in class sessions. Students using electronic communication devices during class or otherwise not participating in class (sleeping, eating) will be considered ABSENT from class at the discretion of the instructor, and receive a 4-point penalty from their final cumulative point total.

Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

Disability Statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

Code of Academic Integrity Policy and Ethical Responsibilities

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high-quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see the Code of Academic Integrity in the University Regulations at [http://www.fau.edu/regulations/chapter4/4.001 Code of Academic Integrity.pdf](http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf).

The Dorothy F. Schmidt College of Arts and Letters expects students to communicate their ideas effectively and professionally. This includes legible text with proper spelling, punctuation, and grammar, as well as reference citations that meet the standards of your discipline for research and scholarly writing. Once it is documented in writing or in drawing, an idea is the intellectual property of the author.

When presenting anything that is not your own, you are legally and ethically bound to identify your source. To do otherwise is plagiarism, which constitutes cheating. Plagiarism is unacceptable in the University community. Using the ideas, writings, or drawings of another and attempting to pass them off as yours is plagiarism. Examples of plagiarism include, but are not limited to: lifting material verbatim (or with minimal changes) directly from someone else's work without citing the original author, as well as submitting work prepared by someone else as your own. Plagiarism is a very serious offense, as is submitting a product which was not originally prepared for this course, or one which is used to fulfill the requirements of more than one course. In any such case, the student will receive no credit for the work, and/or a failing grade for the course. Moreover, depending on the severity of the offense and any previous violations, additional penalties may be assessed by the university (including academic probation or expulsion from the university). A grade of "F" received for academic misconduct cannot be removed from your transcript through FAU's forgiveness policy.

Required Texts

No required texts are specified.

Recommended Texts

A number of readings from various sources will be provided by the professor to support the class, including but not limited to the following:

- *From Control to Design*, by Tomoko Sakamoto
- *AD: Versatility and Vicissitude*, by Hensel, Menges
- *Tooling*, by Benjamin Aranda & Christopher Lasch
- *Digital Tectonics*, Neil Leach
- *AD: Computational Design Thinking*, by Achim Menges & Sean Ahlquist

General Information

Information concerning academic regulations, student rights and responsibilities may be found in the current Florida Atlantic University Catalog and Student Handbook. This does not apply to students receiving services from the Office with Student Disabilities. When the instructor's consent is given, the materials are for personal use only and are not for distribution or sale in any fashion.

1. Safewalk - Night Owls, Ft. Lauderdale: Tel. 954-762-5611 Campus security will escort individuals' day or night. Call ahead or go to their offices.
2. Discrimination or Harassment: Tel. 561-297-4004. Students who have concerns about on-campus discrimination or harassment can contact the FAU Equal Opportunity Program for assistance. The Boca office is located in Administration Building Room 291.

Outside Employment

While the University is sensitive to the financial and professional needs of our students, outside employment is not considered an extenuating circumstance in cases of poor performance, excessive absences or failure to submit assigned work on schedule.

FABLAB Usage Protocols

For all new FAU School of Architecture Students, the FabLab Safety Orientation must be completed to gain access to any part of the FabLab. You can enroll yourself in this course through the following link: <https://canvas.fau.edu/enroll/JEW9J6>

Proposed Topical Outline

Week 1 Theory of generative design fundamentals

Review of concepts and techniques from ARC3133 Architectural Visualization 1

Week 2 Theory of generative design fundamentals

Readings & Discussion

Week 3 Theory of generative design fundamentals

Importance of data in architectural design/ theoretical frameworks

Module 1 Assignment Submission (Grade: 20%)

Week 4 Generative Design

Exploration of existing generative methods in architectural design

- Design project 1 conceptualization

Week 5 Generative Design

Exploration of existing generative methods in architectural design

- Design project 1 Critiques

Week 6 Generative Design

Application of selected generative methods in architectural design

- Design project 1 conceptualization

Week 7 Generative Design

Application of selected generative methods in architectural design

- Design project 1 presentation

Module 2 Assignment Submission (Grade: 25%)

Week 8 MIDTERM Presentations (Grade: 5%)

Week 9 Strategies implementation in Architectural Design

Overview of state-of-the-art methods for architectural design

Week 10 Strategies implementation in Architectural Design

Application of selected state-of-the-art generative design methods for a design problem

- Design project 2 conceptualization

Week 11 Strategies implementation in Architectural Design

Application of selected state-of-the-art generative design methods for a design problem

- Design project 2 Critiques

Week 12 Strategies implementation in Architectural Design

Application of selected state-of-the-art generative design methods for a design problem

- Design project 2 presentation

Module 3 Assignment Submission (Grade: 25%)

Week 13 Final Project

Application of selected state-of-the-art generative design methods for a design problem

- Design project development

Week 14 Final Project

Application of selected state-of-the-art generative design methods for a design problem

- Design project development

Week 15 Final Project Critiques

Module 4 Assignment Submission (Grade: 15%)

Week 16 FINAL Presentations (Grade: 10%)