



Course Title: Advanced CAD

Course Prefix: ARCH Course No.: 4733 Section No.: P01



“The most grandiose of designs lies fallow, unrealized and in a questionable state if it is never constructed.”
“..the act of architecture is not finished when the design is done, but when the building is built. However, most students see, and are taught, that the design is the end product.” Gerald Weisbach, FAIA

School of Architecture
 Department: Architecture
 Construction Science
 Art
 Digital Media Art
 Community Development

Course Location: Nathelyne Archie Kennedy Building, Room 227

Class Meeting Days & Times: Wednesdays; 6:00-8:50 PM

Catalog Description: “(2-2) Credit 3 semester hours. Advanced CAD

Prerequisites:

Co-requisites:

Mode of Instruction: Face-to-face On-line Hybrid

Instructor: Rania Labib

Office Location: N/A

Office Telephone: N/A

Fax: N/A

Email Address: ralabib@pvamu.ed

U.S. Postal Service Address: Prairie View A&M University
 P.O. Box 519
 Mail Stop 2100
 Prairie View, TX 77446

Office Hours: By appointment

Virtual Office Hours:

Required Text: N/A

Optional Text: N/A

Recommended Text/Readings:

Learning Resources
PVAMU Library:
 Telephone: (936) 261-1500;
 web: <http://www.tamu.edu/pvamu/library/>
 Use the Reference Desk at the library where the staff is eager to guide your research. They can orient you to hard copies and on-line resources.

University Bookstore:
 Telephone: (936) 261-1990
 web: <https://www.bkstr.com/Home/10001-10734-1?demoKey=d>

The Writing Center

Telephone: (936) 261-3700

The Writing Center's goal is to provide a friendly, stress-free environment for students from all over campus to meet with a consultant and talk about writing of all types. They provide a responsive audience and advice from experienced writers in sessions generally lasting thirty to forty-five minutes. Sessions of this length offer time to work individually with students on any aspect of the writing process: from brain storming and drafting, to revising and proofreading. They will explore ways to improve a student's overall writing skills. They do NOT proofread or edit for students, but instead teach proofreading and editing techniques. Their goal is to: make a better writer for the long term.

Student Academic Success Center

Telephone: (936) 261-1040

Student Academic Success Center identifies academic and social roadblocks that interfere with persistence and timely graduation of PVAMU students. SASC informs campus-wide policies by staying current with retention literature and best practices. Further, SASC develops programs and services that are specifically aimed at continuing the academic success of the first year. We strive to provide PVAMU students with **"Navigation to Graduation"**.

The Tutoring Center

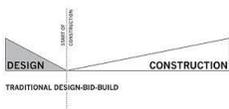
John B. Coleman Library in Room 209

Telephone: (936) 261-1561

Hours: Monday through Thursday 12 pm to 9 pm and Friday from 8 am to 5 pm.

Email: AEtutoring@pvamu.eduOpen to **all** undergraduate students enrolled for credit in targeted PVAMU courses. offers help for:

- Microeconomics, Macroeconomics
- Management Information Systems
- History, Government
- Statistics, Basics – Calculus II
- Psychology, Sociology
- English (Basics – Freshman Comp II), Speech
- Spanish I&II
- Biology (Pre-Med, Pre-Nursing)
- Chemistry (Bio & Nursing Majors)
- Physics
- Materials & Science

Course Goals and Overview:

The practice of architecture is rapidly changing due to the expanding use of computer-based systems that provide huge advances in visual presentation and graphics, as well as in basic design work. For every hour spent in design it takes roughly 3 to 4 hours to draw the information from which a contractor can build the project. Thus, most of your architectural career will involve preparing technical and construction documents to communicate the project design to the builder in order to properly construct the work. Unfortunately, most architecture school graduates come into the professional workforce with little if any knowledge about how this process actually works. ARCH 4443 will focus on making sure that when applying for your first job after graduation, you do so with an advantage over those graduates who focused solely on design and presentation skills. The primary emphasis (goal) of this course is to help you to understand the architect's role in preparing construction documents and specifications and understanding their importance to the general contractors. The student should improve their understanding of the technical aspects involved with project documentation

Course Outcomes/Learning Objectives**At the end of this course, the students will**

4733.1	Understand parametric modeling.
4733.2	Be able to apply parametric modeling strategies to a typical design and construction project.
4733.3	Be able to use parametric environments for optimized sustainable designs.

Course Requirements & Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

- **Assignments/Papers/Exercises:** Written assignments designed to supplement and reinforce course material
- **Exams:** Written tests designed to measure knowledge of presented course material
- **Projects:** Assignments designed to measure ability to apply presented course material
- **Class Attendance/Participation:** Daily attendance and participation in class discussions

Grading Matrix

Instrument	Value (points or percentages)	Total
Projects	2 projects	40
Assignments	4 to 8 assignments	35
Class Attendance/Participation	Attendance and in-class exercises	25
Total:		100
Additional Credit/Bonus (TBA)		15
Total:		115
Grade Determination:	A = 90-100 points B = 80-89 points C = 70-79 points D = 60-69 points; F = 59 points or below	

Course Procedures

Taskstream	Taskstream is a tool that Prairie View A&M University uses for assessment purposes. One of your assignments may be considered an "artifact," an item of coursework that serves as evidence that course objectives are met. More information will be provided during the semester, but for general information, you can visit Taskstream via the link in eCourses.
University Attendance Policy:	Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or assignment of a grade of "F." Absences are accumulated beginning with the first day of class.
Instructor's Attendance and Participation Policy	<p>As a student in a professional practice course at Prairie View A&M University you are expected to attend each class. Class attendance is recorded on roll sheets that are circulated to record <u>your</u> name and signature. Since attendance is critical to the learning objectives and the class discussions, a <u>400 point involvement grade is awarded for each class period (200 points for Part 1 + 200 points for Part 2)</u>. You start with <u>100 points</u> for attending each class session under the assumption that you have come to learn. However, to gain an understanding of construction materials and installation methods, you must do more than just show up. Attentiveness is important. For example, showing up for class and then reading the newspaper will cause a deduction from your 100 points. Other things that could cause you to lose points would be sleeping in class, working on other assignments in class, being late, being rude or being disruptive. However, if you are attentive during the lectures and discussions, you will be awarded an additional <u>40 points</u> for each class. The <u>remaining 60 points</u> per class are <u>earned</u> by action on your part such as diligently taking notes, finding or sharing your thoughts on the subject being discussed, or asking a thoughtful and appropriate question. These points, plus potential bonus points, could also be earned by writing a one-page reaction paper about the class material or finding an insightful article from the newspaper or an architectural magazine. <u>If you are late to class you are subject to losing all or parts of the 60 participation points. Typical deductions for being late are: Up to 5 minutes: 0 points; from 5 to 10 minutes: 20 points; from 10-15 minutes: 40 points; and over 15 minutes: 60 points.</u></p> <p>If you do not come to class, you may assume that you have received zero (0) points for the class period unless you have a university approved excuse in one of the following</p>

	<p>classifications:</p> <ol style="list-style-type: none"> 1. Participation in an activity appearing on the University authorized activity list. 2. Death or major illness in a student's immediate family. 3. Illness of a dependent family member. 4. Participation in legal proceedings that requires a student's presence. 5. Religious holy day. 6. Confinement because of illness. 7. Required participation in military duties. <p><u>If you miss class for one of these reasons, you must provide a memorandum plus supporting documentation to clear the absence from your record. These documents will be accepted for ONE WEEK AFTER THE ABSENCE HAS OCCURRED. There will be NO exceptions to this rule. This includes student-athletes who are to provide university forms for reporting absences to participate in approved competitions. Emails will not be accepted to clear these absences. After that, the involvement grade stands. If you have another reason other than these seven for being absent, you may submit a memorandum with supporting documentation requesting that the absence be removed from you record for ONE WEEK AFTER THE ABSENCE HAS OCCURRED. There will be NO exceptions to this rule. All requests will be reviewed and approved or disapproved based upon the justification that you provide in your memorandum. While other reasons for being absent are rarely approved; it is understood that you might feel that there is a higher priority that requires you to miss class. In accepting your decision to miss class, you must also be willing to accept the instructor's decision to not award you involvement points for the class or classes that are missed. To assist you in recovering lost points, there is an opportunity to earn up to 500 additional points towards your final grade</u></p>
Personal Conduct	<p>Students and faculty are expected to conduct themselves in ways that support individual learning and the learning of others. To that end members of the classroom community will conduct themselves in a professional and ethical manner to achieve these objectives. Any conduct construed to interfere with the learning opportunities of members of the class may result in the removal of the student from the class for that day. Repeated inappropriate conduct will result in permanent removal from the class. Based upon the fact that you are preparing for professional employment, you are expected to adhere to the following specific guidelines:</p> <ol style="list-style-type: none"> 1. <u>During regular class periods all students are expected to dress appropriately</u> in accordance with university regulations so that no disruptions in the learning experience will occur. 2. <u>No hats or caps will be allowed to be worn in the classroom during class sessions.</u> If you elect to wear a hat or cap during the lectures or class discussion, your decision will be respected. However you should also respect the instructor's decision to not award you daily participation points based upon that decision. 3. <u>Dress Code for Presentations:</u> Professional dress is expected for all design and technical presentations in class. Failure to adhere to the guidelines posted by the instructor will result in a deduction of ten percent (10%) from your final presentation score. 4. <u>No food or drink</u> is allowed in the classroom at any time. 5. <u>Cellular telephones are to be turned off or put on silent ring tone</u> during the class period. Texting is strictly prohibited during the class period. No "ear phone" units will be allowed. If your cell phone rings during the lecture or you are texting you are subject to losing all participation point for that class period. 6. <u>Laptops must emit no noise.</u> Make sure your laptop is warmed up and your battery charged before class starts. A laptop is allowed only for taking notes or accessing relevant course material during the class. Checking email, playing a game, messaging and other non-class related activities are not allowed at any time. 7. <u>Harassment</u> of your fellow students of any kind will not be tolerated. 8. <u>No children, friends, family members or guests are allowed in the class without prior approval.</u> Failure to adhere to this rule will result in a "0" for that class period.
Conduct of the	Please note the following rules for the conduct of the class.

Class and Care of the Facility	<ol style="list-style-type: none"> 1. <u>Class will begin at the appointed time.</u> 2. <u>Class is dismissed when so indicated by the instructor.</u> Students are expected to be on time and stay throughout the entire class period. Leaving the classroom before the class is dismissed without prior approval from the instructor will result in a loss of participation for that class. 3. All class members are required to <u>keep the classroom in a clean and orderly manner</u> to facilitate the number of students using it each day. Failure to maintain the classroom as requested by the instructor will result in a deduction in participation points for all class members for that date of instruction. 4. <u>Lecture Notes and Handouts</u> will be sent to your official university email. Handouts distributed during a class period will not be distributed at any other time. It is the student's responsibility to get a copy from another student or source.
Submission of Assignments:	Assignments are due at the start of the class session. No late work will be accepted without proper documentation.
Formatting Documents:	Microsoft Word is the standard word processing tool used at PVAMU. If you are using other word processors, be sure to save the document in either the Microsoft Word, Rich-Text, or plain text format.
Exam Policy:	Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).
Professional Organizations and Journals	
References	
University Rules and Procedures	
Disability Statement (See Student Handbook):	Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator. Students should also inform the instructor of their need for accommodations immediately at the outset of the course so that a solution designed to being successful in class can be produced.
Academic Misconduct (See Student Handbook):	You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.
Forms Of Academic Dishonesty:	<ol style="list-style-type: none"> 1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations. 2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test. 3. Fabrication: use of invented information or falsified research. 4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.
Nonacademic Misconduct (See Student Handbook)	The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either: (1) the instructor's ability to conduct the class; (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.
Sexual misconduct (See Student Handbook):	Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.
Student Academic Appeals Process	Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty

	days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.
Technical Considerations for Online and Web-Assist Courses	
Minimum Hardware and Software Requirements	<p>Pentium with Windows XP or PowerMac with OS 9</p> <ul style="list-style-type: none"> -56K modem or network access -Internet provider with SLIP or PPP -8X or greater CD-ROM -64MB RAM -Hard drive with 40MB available space -15" monitor, 800x600, color or 16 bit -Sound card w/speakers -Microphone and recording software -Keyboard & mouse -Netscape Communicator ver. 4.61 or Microsoft Internet Explorer ver. 5.0 /plug-ins <p>-Participants should have a basic proficiency of the following computer skills:</p> <ul style="list-style-type: none"> -Sending and receiving email -A working knowledge of the Internet -Proficiency in Microsoft Word -Proficiency in the Acrobat PDF Reader -Basic knowledge of Windows or Mac O.S.
Netiquette (online etiquette):	Students are expected to participate in all discussions and virtual classroom chats when directed to do so. Students are to be respectful and courteous to others in the discussions. Foul or abusive language will not be tolerated. When referring to information from books, websites or articles, please use APA standards to reference sources.
Technical Support:	Students should call the Prairie View A&M University Helpdesk at 936-261-2525 for technical issues with accessing your online course. The helpdesk is available 24 hours a day/7 days a week. For other technical questions regarding your online course, call the Office of Distance Learning at 936-261-3290 or 936-261-3282
Communication Expectations and Standards:	All emails or discussion postings will receive a response from the instructor, usually within 48 hours. Urgent emails should be marked as such. Check regularly for responses. You can send email anytime that is convenient to you, but the instructors will check their email messages continuously during the day throughout the work-week (Monday through Friday) during normal office hours. Instructors should respond to email messages during the work-week by the close of business (5:00 pm) on the day following their receipt of them. Emails received on Friday will be responded to by the close of business on the following Monday.
Submission of Assignments-On Line Courses:	Assignments, Papers, Exercises, and Projects will distributed and submitted through your online course. Directions for accessing your online course will be provided. Additional assistance can be obtained from the Office of Distance Learning.
Discussion Requirement-On Line Courses:	<p>Because this is an online course, there will be no required face to face meetings on campus. However, we will participate in conversations about the readings, lectures, materials, and other aspects of the course in a true seminar fashion. We will accomplish this by use of the discussion board.</p> <p>Students are required to log-on to the course website often to participate in discussion. It is strongly advised that you check the discussion area daily to keep abreast of discussions. When a topic is posted, everyone is required to participate. The exact use of discussion will be determined by the instructor.</p> <p>It is strongly suggested that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board.</p>

ACCREDITATION/ASSESSMENT CRITERIA Table No. 1-NAAB CRITERIA

This course is structured to assist the student meet the following criteria shown in **Table No. 1** as established by the National Architectural Accreditation Board (NAAB). To view the entire list, go to the NAAB website, www.naab.org and access "2014 NAAB Conditions for Accreditation."

Performance Criteria	Ability ☑	Understanding ☑	Course Learning Outcomes Competencies (T, R, I)		
			T Taught	R Reinforced	I Utilized/ Integrated
REALM A: Critical Thinking and Representation					
A.1. Professional Communication Skills (Ability)					
A.2. Design Thinking Skills (Ability)				R	
A.3. Investigative Skills (Ability)					
A.4. Architectural Design Skills (Ability)					
A.5. Ordering Systems (Ability)					
A.6. Use of Precedents (Ability)				R	
A.7. History and Global Culture (Understanding)					
A.8. Cultural Diversity and Social Equity (Understanding)					
REALM B: Building Practices, Technical Skills, and Knowledge					
B.1. Pre-Design (Ability)					
B.2. Site Design (Ability)					
B.3. Codes and Regulations (Ability)					
B.4. Technical Documentation (Ability)					
B.5. Structural Systems (Ability)					
B.6. Environmental Systems (Ability)				R	
B.7. Building Envelope Systems and Assemblies (Understanding)					
B.8. Building Materials and Assemblies (Understanding)					
B.9. Building Service Systems (Understanding)					
B.10. Financial Considerations (Understanding)					
REALM C: Integrated Architectural Solutions					
C.1. Research (Understanding)				R	
C.2. Integrated Evaluations and Decision-Making Design Process (Ability)					
C.3. Integrative Design (Ability)				R	
REALM D: Professional Practice					
D.1. Stakeholder Roles in Architecture (Understanding)					
D.2. Project Management (Understanding)					
D.3. Business Practices (Understanding)					
D.4. Legal Responsibilities (Understanding)					
D.5. Professional Conduct (Understanding)					

COURSE OUTLINE: EVENT AND LECTURE SCHEDULE			
This schedule is subject to change as the semester proceeds in order to cover the most important material in the time allotted. Any revisions will be duly noted and announced in class. All referenced readings are taken from the required text.			
	Registration/Assembly Dates		Dates exam scores will be posted

	Key Dates		Holidays
	Graduation Applications		Guest lectures
	Dates for Exams		Project Team Workshop

16 WEEK CALENDAR

Week One: Topic January 14-18, 2019	<i>Introduction to Rhino</i>		
Chapter (s):			
Assignment (s):			
University Events: 	January 16, 2019 [Wednesday]	UNDERGRADUATE: LATE REGISTRATION/ADD COURSES FOR SPRING 2019.	
	January 18, 2019 [Friday]	UNDERGRADUATE: ADD/DROP COURSES/CHANGE COURSE SCHEDULE ENDS FOR SPRING 2019	
Week Two: Topic January 21-25, 2019	User interface and basic 2D commands		
Chapter (s):			
Assignment (s):			
University Events: 	January 21, 2019 [Monday]		MARTIN LUTHER KING DAY (University Closed)
Week Three: Topic January 28-February 1, 2019	Advanced 2 D commands		
Chapter (s):			
Assignment (s):			
University Events:			
	January 30, 2019 [Wednesday]	CENSUS DATE (12TH CLASS DAY): COURSE RESERVATIONS CANCELLED FOR NON-PAYMENT.	
		LAST DAY TO WITHDRAW FROM COURSE WITHOUT ACADEMIC RECORD. A FINANCIAL RECORD WILL STILL EXIST.	
			SPRING 2019 GRADUATION LATE APPLICATION DEADLINE. There will be NO exceptions to this deadline.
February 1, 2019 [Thursday]	NOTE! WITHDRAWAL FROM COURSES "WITH ACADEMIC RECORD" (W) BEGINS; ENDS MARCH 29, 2019		
Week Four: Topic February 4-8, 2019	Introduction to 3D modeling in Rhino		
Chapter (s):			
Assignment (s):			
University Events: 			
Week Five: Topic February 11-15, 2019	Advanced Modeling		
Chapter (s):			

Assignment (s):		
University Events: 	February 11, 2019 [Monday]	NOTE! 20 TH CLASS DAY
Week Six: Topic February 18-22, 2019	Introduction to mid-term project	
Chapter (s):		
Assignment (s):		
University Events: 		
Week Seven: Topic February 25-March 1, 2019	Mid-term project help	
Chapter (s):		
Assignment (s):		
University Events: 		
Week Eight: Topic March 4-8, 2019	Mid-term project due	
Chapter (s):		
Assignment (s):		
University Events: 		
Mid-Term Exam 	March 7-9, 2019 Thursday through Saturday	
Week Nine: Topic March 11-15, 2019	SPRING BREAK!	
Chapter (s):		
Assignment (s):		
University Events: 	 UNIVERSITY CLOSED ON MARCH 15, 2019	
Week Ten: Topic March 18-22, 2019	Introduction to Grasshopper	
Chapter (s):		
Assignment (s):		
University Events: 	March 19, 2019 [Tuesday]	60% of term is completed!
	March 19, 2019 [Tuesday]	 MID-TERM EXAM GRADES DUE BY 11:59 pm
Week Eleven: Topic March 25-29, 2019	Grasshopper components	
Chapter (s):		
Assignment (s):		
University Events: 	March 27, 2019 [Wednesday]	Founders Day/Honor Convocation LAST DAY TO APPLY FOR SPRING 2019 GRDUATION (TO PARTICIPATE IN THE CEREMONY)
	March 29, 2019 [Friday]	NOTE! WITHDRAW FROM COURSE "WITH RECORD ("W") ENDS.
Week Twelve: Topic April 1-5, 2019	Parametric modeling I	
Chapter (s):		
Assignment (s):		

University Events: 	March 31–April 2, 2019	Provost Program Review: MCD in Community Development
Week Thirteen: Topic April 8-12, 2019	Introduction to final project	
Chapter (s):		
Assignment (s):		
University Events: 	April 8, 2019 [Monday]	NOTE! PRIORITY REGISTRATION BEGINS FOR FALL 2019 SEMESTER.
Week Fourteen: Topic April 15-19, 2019	Final project help	
Chapter (s):		
Assignment (s):		
University Events: 	April 14–16, 2019	Provost Program Review: BS in Construction Science
	April 19, 2019 [Friday]	 1 Good Friday [Student holiday]
Week Fifteen Topic April 22-26, 2019	Final project help	
Chapter (s):		
Assignment (s):		
University Events: 	April 21-23, 2019	Provost Program Review: BS in Digital Media Arts
Week Sixteen April 29-May 3, 2019	Final Project due	
	April 29, 2019 (Monday)	COURSE REVIEW DAY (Classes must convene and instructors will prepare students for Final Exams)
	April 30, 2019 (Tuesday)	COURSE REVIEW DAY (Classes must convene and instructors will prepare students for Final Exams) LAST DAY OF CLASSES FOR SPRING SEMESTER 2019 LAST DAY TO WITHDRAW FROM UNIVERISTIY FOR SPRING 2019 SEMESTER.
	May 1-7, 2019 [Wednesday-Tuesday]	FINAL EXAMINATION PERIOD
	May 9, 2019 [Thursday]	FINAL GRADES DUE FOR GRADUATING CANDIDATES BY NOON
	May 11, 2019 [Saturday]	COMMENCEMENT
	May 14, 2019 [Tuesday]	FINAL GRADES DUE FOR ALL STUDENTS

STATEMENT OF AGREEMENT

I have read the Course Syllabus for **ARCH 4733** for the Spring Semester 2019, including the Class Lecture and Event Schedule, and agree to abide by the conditions for the class as spelled out in this document. My signature indicates my personal commitment to meeting the course objectives and succeeding in this educational endeavor.

Signature-Student

Student name (Please print neatly)

Student ID #

Date

Signature-Instructor

Instructors name

Date

RETURN THIS PAGE FROM THE SYLLABUS TO THE INSTRUCTOR TO COMPLETE YOUR ENROLLMENT IN THIS COURSE.

RECEIVED WITH STUDENT'S SIGNATURE: _____

ENTERED INTO GRADE BOOK: _____