

# ARCH 3352 | Building Information Technology Syllabus



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**Office Hours:** by appointment

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**Catalogue Description:** Building Information Technology - Prerequisite: ARCH 1353, ARCH 2355, and ARCH 3350. Analysis of communication of technical information and the process of preparing documents for building construction using Building Information Modeling (BIM).

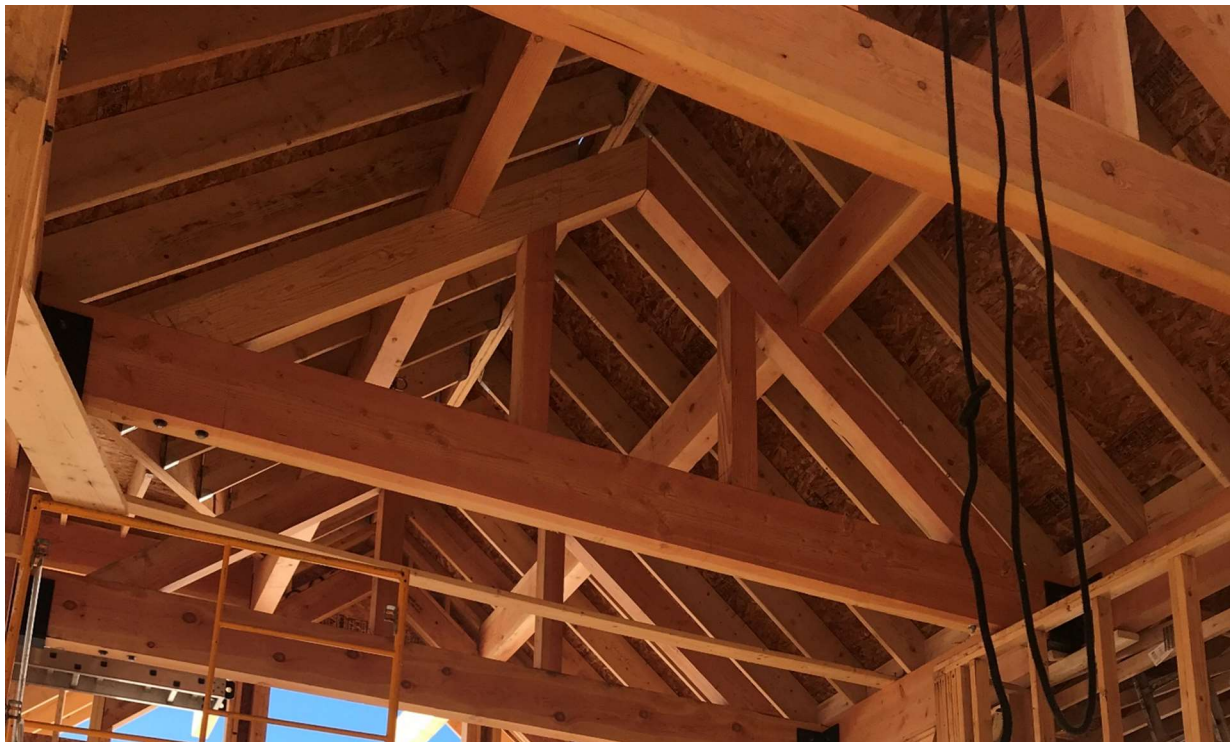
**Course Description:** Construction drawings, often referred to as working drawings, are a communication medium whose purpose is to graphically convey the design requirements for a construction project. They respond to the intent of the design by indicating in considerable detail how the building components of the project are assembled and joined. The drawings work together with the specifications to illustrate and describe the intended results. While the drawings communicate how the building's elements and components come together to realize the design intent, the specifications define the exact nature of each building component, and how it must perform.

Students in this class will use Revit to produce a set of construction drawings for a small building. The concept of specifications will be addressed in the class as well.

In addition to the primary COA instructor for contract documents and construction drawings, a technology consultant from the firm of Chapman Harvey Architects will offer primary instruction in Revit. There will also be teaching assistants who will offer assistance.

#### Communication Literacy Plan:

Communication Literacy (CL) in Architecture is evidenced by competency in speaking, writing, and usage of representational media in order to clearly communicate design ideas, site relations, spatial conditions, materials, systems, and components to both within the profession and with the general public. Our faculty members endorse a sequenced approach to the CL plan with each course building on skills acquired in the previous course and advanced to the subsequent course. The CL plan in Architecture, concludes with the upper level three courses in which students demonstrate fulfillment and efficiency of verbal presentation, writing and technical documentation within their critical thinking in architecture.



## Learning Outcomes:

Students completing this class will be able to:

1. Technically document critical aspects of construction drawings including the sequence of drawings, dimensioning, conventions and techniques, and specifications that communicate the materials, assemblies and details of all elements that control how a building is built.
2. Demonstrate the logic and critical thinking by which design drawings are further defined and measured to describe the building elements and the technology necessary to realize a functioning built form.
3. Recognize fundamental factors effecting building costs and communicate in writing why one cost estimate is more valid than another.

**NAAB Criteria:** For purposes of accreditation, students in this class must demonstrate understanding or ability in the following criteria:

**B.4 Technical Documentation (Ability):**

- Write limited outline specifications
- Organize and produce technically clear drawings using prevalent software (Revit)
- Construct digital models identifying specific materials and assemblies

**Grading:** (500 PTS TOTAL – two lowest 20pt grades will be dropped)

EX_00	10 points	Information card
EX_01	10 points	Framing + Annotation + Families
EX_02	20 points	Design
EX_03	20 points	Site
EX_04	20 points	Build-ups
EX_05	20 points	Plans
EX_06	20 points	Elevations + Sections
EX_07	20 points	Large scale drawings
EX_08	20 points	Wall Sections + Details
EX_09	20 points	Axon dissociated
<b>EX_10</b>	<b>200 points</b>	<b>Cover sheet + Renderings + Complete Set</b>
EX_11	20 points	Reveals + Sweeps
EX_12	20 points	Presentations Techniques
<b>EX_13</b>	<b>100 points</b>	<b>Presentation Refinement</b>
EX_14	20 points	Financial Considerations <i>(not eligible to be dropped from overall grading)</i>

## Class Organization:

### SECTION 001

#### MONDAY

9:00am – 9:50am                      Lecture

#### FRIDAY

9:00am – 9:50am                      Lecture

10:00am – 11:50am                  Lab

### SECTION 002

#### MONDAY

11:00am – 11:50am                  Lecture

#### WEDNESDAY

9:00am – 9:50am                      Lecture

10:00am – 11:50am                  Lab

## Assessment:

**Individual Project and Grading** - Each student will design and technically document their own small project. Technical documentation of each student's project will be comprised of weekly assignments throughout the semester to be worked on both inside and outside of lab. Each week, students will be given an assignment to work on during and outside of lab time. Assignments will be turned in each week as described. The total amount of points available for the semester is 500 (not including extra credit). Extra Credit is available as prescribed in EX\_10 Complete Set. Extra Credit is also available on occasion in 5-point increments (1% of total grade). Students will use Revit to prepare technical documentation.

## COVID 19:

Many of the policies listed below may not be applicable since we will be remotely and not in person. We will adhere to the University and College Policies as they become revised and communicated.

## Texas Tech University Operating Policies:

**ADA Statement:** Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.

**Academic Integrity Statement:** Academic integrity is taking responsibility for one's own class and/or course work, being individually accountable, and demonstrating intellectual honesty and ethical behavior. Academic integrity is a personal choice to abide by the standards of intellectual honesty and responsibility. Because education is a shared effort to achieve learning through the exchange of ideas, students, faculty, and staff have the collective responsibility to build mutual trust and respect. Ethical behavior and independent thought are essential for the highest level of academic achievement, which then must be measured. Academic achievement includes scholarship, teaching, and learning, all of which are shared endeavors. Grades are a device used to quantify the successful accumulation of knowledge through learning. Adhering to the standards of academic integrity ensures grades are earned honestly. Academic integrity is the foundation upon which students, faculty, and staff build their educational and professional careers. [Texas Tech University ("University") Quality Enhancement Plan, Academic Integrity Task Force, 2010]

**Religious Holy Day Statement:** "Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. A student who is excused under section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

**Discrimination, Harassment, and Sexual Violence Statement:** Texas Tech University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from gender and/or sex discrimination of any kind. Sexual assault, discrimination, harassment, and other [Title IX violations](#) are not tolerated by the University. Report any incidents to the Office for Student Rights & Resolution, (806)-742-SAFE (7233) or file a report online at [titleix.ttu.edu/students](http://titleix.ttu.edu/students). Faculty and staff members at TTU are committed to connecting you to resources on campus. Some of these available resources are: TTU Student Counseling Center, 806-742-3674, <https://www.depts.ttu.edu/scc/> (Provides confidential support on campus.) TTU 24-hour Crisis Helpline, 806-742-5555, (Assists students who are experiencing a mental health or interpersonal violence crisis. If you call the helpline, you will speak with a mental health counselor.) Voice of Hope Lubbock Rape Crisis Center, 806-763-7273, [voiceofhopelubbock.org](http://voiceofhopelubbock.org) (24-hour hotline that provides support for survivors of sexual violence.) The Risk, Intervention, Safety and Education (RISE) Office, 806-742-2110, <https://www.depts.ttu.edu/rise/> (Provides a range of resources and support options focused on prevention education and student wellness.) Texas Tech Police Department, 806-742-3931, <http://www.depts.ttu.edu/ttpd/> (To report criminal activity that occurs on or near Texas Tech campus.)

**Civility in the Classroom Statement:** Texas Tech University is a community of faculty, students, and staff that enjoys an expectation of cooperation, professionalism, and civility during the conduct of all forms of university business, including the conduct of student-student and student-faculty interactions in and out of the classroom. Further, the classroom is a setting in which an exchange of ideas and creative thinking should be encouraged and where intellectual growth and development are fostered. Students who disrupt this classroom mission by rude, sarcastic, threatening, abusive or obscene language and/or

behavior will be subject to appropriate sanctions according to university policy. Likewise, faculty members are expected to maintain the highest standards of professionalism in all interactions with all constituents of the university ([www.depts.ttu.edu/ethics/matadorchallenge/ethicalprinciples.php](http://www.depts.ttu.edu/ethics/matadorchallenge/ethicalprinciples.php)).

**LGBTQIA Support Statement:** I identify as an ally to the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community, and I am available to listen and support you in an affirming manner. I can assist in connecting you with resources on campus to address problems you may face pertaining to sexual orientation and/or gender identity that could interfere with your success at Texas Tech. Please note that additional resources are available through the Office of LGBTQIA within the Center for Campus Life, Student Union Building Room 201, [www.lgbtqia.ttu.edu](http://www.lgbtqia.ttu.edu), 806.742.5433."

Within the Center for Campus Life, the Office serves the Texas Tech community through facilitation and leadership of programming and advocacy efforts. This work is aimed at strengthening the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community and sustaining an inclusive campus that welcomes people of all sexual orientations, gender identities, and gender expressions.

### College of Architecture Policies:

**Project Submittals:** The College of Architecture (COA) reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grade is the property of the COA and remains such until it is returned to the student.

**Attendance:** Students are responsible for attending class. A total of four absences is considered excessive. The student may be required to drop the class or receive a grade of "F". Whether an absence is excused or unexcused is determined by the instructor, with the exception of absences due to religious observance and officially approved trips according to guidelines specified in the TTU Catalog. Students are expected to comply with TTU rules for reporting student illness requiring absence from class for more than a week, or immediate family deaths.

Failure to work in class with undivided attention, any tardiness, leaving early, lack of participation, walking in and out of lectures, general socializing, goofing around, disruptive behavior, etc. may count as absences.

**Class Environment:** The building is a tobacco and alcohol free environment. Sound devices (TV's, CD, or radios, etc.) require the use of headphones at all hours. The use of spray paint or aerosol products of any kind is not permitted in the building.

**Required Drawings:** A list of required sheets will be distributed along with a list of drawings, notes, renderings, and schedules required for each sheet.

**Reference Material:** Reference sets of Construction Documents are available in Room 801 and by email as needed.

**Software Required:** Student version of Revit 2021

### Current Reference Texts:

*Building Codes Illustrated*  
*Building Construction Illustrated*  
*The Architects Studio Companion*  
*Architectural Graphic Standards*

*Francis D.K. Ching & Steven R. Winkle*  
*Francis D.K. Ching*  
*Edward Allen & Joseph Iano*  
*Charles George Ramsey*