EGDT-1020 3D Architectural Modeling

**Instructor Contact Information**

Professor Robert Price

**Course Description**

Utilizes a Building Information Modeling system (BIM) to design 3D architectural models. Covers 3D modeling design theory, parametric modeling methods, generation of residential and commercial construction plans and details, building components and systems, and manipulation of model information. May be delivered hybrid and/or online.

EGDT 1020 is a required course for the following degrees/certificates:

* Certificate of Proficiency in:
  + Architectural Design Technology
  + Structural Design Technology
* AAS Engineering Design Technology
* AS Engineering Design Technology
* Bachelor of Architecture
* AAS Facilities Management
* AAS Construction Management\*
* BS Construction Management\*

\*Required for the Commercial /Residential Focus

**Course Outcomes**

Upon successful completion of this course, students will be able to:

* Examine typical building materials & techniques applied to a 3D architectural model
* Compose both basic and complex residential building projects in a 3D model
* Create Building Information Models (BIM) for specific architectural projects in a residential context
* Generate floor plans, elevations, sections, details, and 3D views from a 3D architectural model

**Prerequisites and Needed Skills**

* No required Prerequisites
* Ability to use a computer and the internet.
* Ability to see detail and differentiate colors.

**Materials, Fees and Technology Tools**

**Required materials, fees and technology**

* Textbook: Exploring Autodesk Revit 2021 for Architecture, Sham Tickoo (Latest Edition)
* Access to a computer and a reliable internet connection
* Revit Building Information Modeling Software NOTE: Revit does not have a Mac version. It is possible to partition your drive using Boot Camp or install Parallels Desktop with Microsoft Windows to run a PC version of Revit on a Mac.
* Software Fee $18
* Lab access fee $35

**How This Course Works**

**Course Mode: ONLINE**

This is a fully online course. Online learning offers the convenience of continuing your education regardless of your access to the physical classroom.  Be aware that online courses at UVU have regular due dates and must be completed within the term you are registered.  You are expected to participate in the course online each week.

**Description of how course works:**

Canvas is where content, grades, and communications will reside for this course.

For this three (3) credit-hour course students should expect to spend up to 9 (+/-) hours a week for a full semester and 18 (+/-)  for a BLOCK class  completing course activities.

As a student you can expect this course to challenge and engage you as a learner. You will learn and apply the architectural principles for commercial and residential building types. We will be using the Revit software as indicated above to create detailed blueprints. There will be several check in type assignments to ensure you are progressing through the course toward three separate culminating projects. The first two projects are prescribed  residential and commercial building plans. The third project will be your choice of either a residential or commercial building plan and an opportunity for you to design something meaningful to you. We will be testing your knowledge along the way through a series of assignments, quizzes and exams.

**Attendance:**

You are expected to regularly participate in the course several times each week and complete all course activities.  Absence from our online class makes it extremely difficult to be a successful student.

**Student Responsibilities:**

* Start class the first week of the term.
* Be accountable by setting aside regular time each week to complete course activities and assignments on time as noted per the due dates.
* Learn how to use Canvas including communication tools (e.g. discussion, Canvas inbox, etc.). If you have technology-related problems contact the Service Desk.
* Abide by ethical standards. Your work must be your own.
* Contact your instructor as early as possible if an emergency arises. Do NOT wait until the last minute to ask for an extension.

**Instructor Responsibilities:**

* Respond to emails within ONE business day. If multiple emails are received regarding the same question or concern, they may be responded to with an announcement to the entire class.
* Provide timely, meaningful, and constructive feedback on assignments.
* Facilitate an effective learning experience.
* Refer students to appropriate services for issues that are non-course content specific. For instance, technical issue, writing labs, accessibility services, etc.
* Mentor students through the course.

**Grading and Late Work Statement**

**Grading Scale:**

The following grading standards will be used in this class:

|  |  |
| --- | --- |
| Grade | Percent |
| A | 94-100 |
| A- | 90-93 |
| B+ | 87-89 |
| B | 83-86 |
| B- | 80-82 |
| C+ | 77-79 |
| C | 73-76 |
| C- | 70-72 |
| D+ | 67-69 |
| D | 63-66 |
| D- | 60-62 |
| E | 0-59 |

**Assignment Categories:**

|  |  |
| --- | --- |
| Activity | Percent |
| Getting Started Assignments (7) | 5 |
| Assignments (13) | 15 |
| Projects / Project Checks (25) | 35 |
| Discussions (Optional) (16) Students Helping Students | 0 |
| Quizzes (14) | 10 |
| Reviews / Exams (2) | 35 |
| Total | 100 |

**Late Work Statement:**

The best way to be successful in this course is to submit all assignments by their due date.  All assignments are available from the beginning of the term and you can work ahead.  Discussion participation must occur as per the current module of the class.

Late work will be accepted but is penalized at 5% per day for a maximum of 100%. It is possible to turn in something so late that you receive no credit.

If unforeseen circumstances arise that may cause more than a couple of days late penalty, contact your instructor as soon as possible. You will be expected to provide appropriate documentation and some of the late penalties may be waived.

**Assignment and Assessment Descriptions**

**Getting Started Assignments:**

One of your first assignments is to complete the syllabus quiz.  It is important that you familiarize yourself with the syllabus (this document) and all the information in the Course Orientation module.  This quiz is multiple/choice, true/false and must be taken as many times as necessary to receive a perfect score.  This will ensure that course expectations are clear.

Other getting started assignments include getting the software, textbook, updating your profile and notifications, introducing yourself to your classmates, and learning how to use the Assignment Navigator. Additionally, at the end of the course you will have the opportunity to complete a Student Rating of Instructor (SRI) assignment.

**Assignments:**

Assignments consist of textbook activities. The Assignment Navigator will help you locate the information by page number in the textbook to complete these activities.

**Projects and Project Checks:**

There will be several check in type assignments to ensure you are progressing through the course toward three (3) separate culminating projects. The first two projects are prescribed residential and commercial building plans. The third project will be your choice of either a residential or commercial building plan and an opportunity for you to design something meaningful to you.

**Discussions:**

Discussions will be forums to ask for and receive help from other students on architectural modeling topics. These Students Helping Students discussions are optional and ungraded.

Be sure to ask your questions early on so there will be time for others to respond.

**Quizzes and Exams:**

There will be a chapter quiz for most modules to check your understanding of the textbook readings.  Quizzes are multiple choice, multiple attempts, and open book. Your highest score will be recorded.

The midterm and final exams are timed application exercises where you will complete an architectural drawing with provided specifications to show what you have learned in the preceding modules.  Exam Reviews are provided to help you prepare.

**Course Schedule**

This is an outline of the course assignments by module.  Refer to the assignments for specific due dates. If this course is delivered on a block schedule, expect to cover the material in half the time.

| **Module** | **Assignments** |
| --- | --- |
| Orientation | * Update Profile/Notifications * Get Course Software * Get Textbook and Assignment Navigator * Syllabus Quiz * Introduce Yourself |
| 1 | * Assignment 1 (Set Up Project Files) * Project 1 (Set Up) * Ch02 Quiz (Basic Program Concepts) |
| 2 | * Assignment 2 (Modeling Walls) * Assignment 3 (Placing Doors/Windows) * Project 1 (Exterior and Interior Walls) * Project 1 (Doors and Windows) * Ch03 Quiz (Basic Wall Concepts) * Ch04 Quiz (Basic Building Components) |
| 3 | * Assignment 4 (Editing Tools) * Assignment 5 (Creating Grid/Section Views) * Project 1 (Revision to Master) * Project 1 (Levels, Footings, and Foundation) * Ch05 Quiz (Editing Tools) * Ch06 Quiz (Datums and Standard Views) |
| 4 | * Assignment 6 (Roofs and Floors) * Project 1 (Floors, Ceilings, and Roof) * Project 1 (Drawing Set Up) * Ch07 Quiz (Basic Building Components II) * Submit Project 1 |
| 5 | * Assignment 7 (Curtain Walls) * Project 2 (Introduction) * Ch08 Quiz (Basic building Components III) |
| 6 | * Project 2 (Levels and Grids) * Project 2 (Walls, Foundation, Floor Slab Edge) |
| 7 | * Project 2 (Curtain Walls) * Project 2 (Split Face, Paint, and Wall Sweeps) * Project 2 (Columns, Pile Caps, and Beams) |
| 8 | * Midterm Exam Review * Pre-Midterm Exam Set Up * Midterm Exam * Post-Midterm Exam Files |
| 9 | * Assignment 8 (Dimensions and Tags) * Project 2 (Mezzanine Floor and Stairs) * Project 2 (Dimensions) * Ch11 Quiz (Annotations and Dimensions) |
| 10 | * Assignment 9 (Schedules) * Project 2 (Mezzanine Floor Detail - Drafting View) * Project 2 (Door Schedule) * Ch12 Quiz (Details and Schedules) |
| 11 | * Assignment 10 (Drawing Views) * Project 2  (Site) * Project 2 (Roofs) * ch09 Quiz (Site Features) |
| 12 | * Assignment 11 (Massing) * Project 2 (Drawing Set Up) * Ch10 Quiz (Massing Tools) * Ch13 Quiz (Drawings) * Submit Project 2 |
| 13 | * Assignment 12 (3D Views) * Assignment 13 (Rendering * Project 3 (Introduction) * Project 3 (Proposal) * Project 3 (3D Views and Exterior Renderings) * Project 3 (Interior Renderings) * Ch14 Quiz (3D Views) * Ch15 Quiz (Renderings and Walkthroughs) |
| 14 | * Project 3 (Custom Walls) * Project 3 (Complicated Roofs) |
| 15 | * Submit Project 3 * Project 3 (Self Assessment) |
| 16 | * Final Exam Review * Pre-Final Exam Set Up * Final Exam * Post-Final Exam Files * SRI |

**Academic Integrity**

As stated in Utah Valley Universities Policy 541 – Students Rights and Responsibilities Code:

“5.4.4 – Each student is expected to maintain academic ethics and honesty in all its forms, including, but not limited to, cheating and plagiarism as defined hereafter:

Cheating is the act of using or attempting to use or providing others with unauthorized information, materials, or study aids in academic work. Cheating includes, but is not limited to, passing examination answers to or taking examinations for someone else, or preparing or copying another's academic work.

Plagiarism is the act of appropriating another person's or group's ideas or work (written, computerized, artistic, etc.) or portions thereof and passing them off as the product of one's own work in any academic exercise or activity.

Fabrication is the use of invented information or the falsification of research or other findings. Examples include but are not limited to:

Citation of information not taken from the source indicated. This may include the incorrect documentation of secondary source materials.

Listing sources in a bibliography not used in the academic exercise.

Submission in a paper, thesis, lab report, or other academic exercise of falsified, invented, or fictitious data or evidence, or deliberate and knowing concealment or distortion of the true nature, origin, or function of such data or evidence. d) Submitting as your own any academic exercise (written work, printing, sculpture, etc.) prepared totally or in part by another.”

“Cheating” of any kind on an assignment, project, or exam will result in failing the assessment and the incident will be reported to the Student Conduct Office.

Posting questions and/or answers from assignments, projects or exams on internet “cheating” websites and the use of these websites is a violation of the Student Code of Conduct and will be reported to the Student Conduct Office.  You will lose credit for any assessment posted on these sites.

Sanctions for a second incident may include failing the assessment, failing the class, suspension, or withholding a degree.

**UVU Policies and Resources**

**Accessibility Services:**

Students who need accommodations because of a disability may contact the UVU Office of Accessibility Services (OAS), located on the Orem Campus in LC 312. To schedule an appointment or to speak with a counselor, call the OAS office at 801-863-8747. Deaf/Hard of Hearing individuals, email nicole.hemmingsen@uvu.edu or text 385-208-2677.