Department of Mechanical Engineering

MSET 5220 – Building Information Modeling
Section 001 – Fall 2021 Syllabus

Meeting Room: DP F185
Tuesday 5:30pm-6:50pm
Thursday 5:30pm-6:50pm

INSTRUCTOR: Cheng Yu
OFFICE: NTDP F115X
PHONE: (940) 891-6891
OFFICE HOURS: by appointment

E-MAIL: cheng.yu@unt.edu

EVALUATION

Lab Exercises 45%
Midterm Exam 15%
Project 40%
TOTAL 100%

COURSE Description:
3 hours
Study of the concept and applications of the building information model (BIM) and electronic data interchange (EDI) between building software applications for architectural design, structural analysis, estimating, construction scheduling, project management and facility management. Topics expand beyond traditional 3D modeling to include state-of-the-art 5D modeling that incorporates the dimensions of cost and time into the BIM for a total building life cycle view.

COURSE OBJECTIVES:
At the conclusion of this course, you should be able to:

• discuss the purposes and applications of BIM in the construction industry.
• construct BIM models of construction projects using Autodesk Revit.
• apply BIM tools, skills and knowledge to a construction project.

COURSE POLICY/GRADING:

Lab Exercises:
• There will be 10 lab exercises, each worth 45 points towards your overall grade.
• These exercises will be due strictly based on the schedule shown in the course outline, unless specifically stated otherwise by the instructor.
• The grading for exercises will be specific to each, with criteria provided in each exercise handout.
• Only one late lab exercise will be accepted during the semester. It may be handed in by the last class session, and it will be graded at a 30% penalty.

Exams:
• There will be a midterm exam in Week 8, and will cover all material through Week 7.
• Exams will be cumulative, covering all topics including:
  o All presentations and any topics discussed in class
  o Any chapters of the text noted in the outline
  o Any work carried out to complete assignments and the project
• All exams will be open book and notes. Only printed material will be permitted (i.e. not laptops, cell phones, PDA’s, etc.)

Projects:
• Grading criteria will be provided in the project handout, to be posted to Canvas.
• The project will consist of a report with a BIM model, as well as a presentation, with the report/model to be worth 15 points and the presentation to be worth 5 points.

Other Policies:
• This course will adhere to UNT academic policies, including those for academic integrity (http://vpaa.unt.edu/academic-integrity.htm) and overall conduct (http://deanofstudents.unt.edu/conduct). It is your responsibility as a UNT student to be familiar with these policies, but feel free to ask the instructor any questions pertaining to these.
• Any accommodations for differing abilities will be made for this course as per the policies and determination of the Office of Disability Accommodation: http://disability.unt.edu/

COURSE MATERIALS:
• Additional materials to be provided in class/on website, including excerpts from manuals, etc.

COURSE OUTLINE: tentative and subject to changes

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
<th>MATERIALS</th>
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| 1    | Introduction to course.  
Presentation #1: Introduction to BIM.  
Lab Exercise #1: Datums and layout. | Ch. 1 |
| 2    | Presentation #2: How BIM works.  
Lab Exercise #2: Walls (pt.1). | Ch. 2, 3 |
| 3    | Presentation #3: How owners use BIM.  
Lab Exercise #3: Walls (pt. 2). | Ch. 4 |
| 4    | Presentation #4: How architects/engineers use BIM.  
Lab Exercise #4: Doors and windows. | Ch. 5 |
| 5    | Presentation #5: How contractors use BIM.  
Lab Exercise #5: Curtain Walls and other properties. | Ch. 6 |
| 6    | Presentation #6: How subcontractors use BIM.  
Lab Exercise #6: Floors and ceilings. | Ch. 9 |
| 8    | MIDTERM EXAM | |
| 9    | Presentation #7: The future of BIM.  
Lab Exercise #7: Roofs and blending tools. | Ch. 7 |
| 10   | Lab Exercise #8: Stairs and views. | |
| 11   | Lab Exercise #9: Rooms and schedules. | |
| 12   | Lab Exercise #10: Dimensions and details. | |
| 13   | Final project. | |
| 14   | Project work. | |
| 15   | Project work. | |
| 16   | Project presentations. | |
Policies

Academic Integrity: [https://deanofstudents.unt.edu/academic-integrity](https://deanofstudents.unt.edu/academic-integrity)

ADA Policy

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at [http://disability.unt.edu/](http://disability.unt.edu/). You may also contact them by phone at 940.565.4323.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation


The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:

1. Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.
2. Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.