

UNIVERSITY OF FLORIDA
M.E. RINKER, SR. SCHOOL OF CONSTRUCTION MANAGEMENT

BCN 4252 – Introduction to Building Information Modeling (3 credits)

Spring 2021

INSTRUCTOR:	Dr. Masoud Gheisari Room 322 Rinker Hall, Phone: 352-273-1166
TEACHING ASSISTANT:	Jing Wen & Gilles Albeaino TAs' Room: Virtual Zoom Office
CLASS TIME/ROOM:	Tue, 3:00 p.m. – 4:55 p.m. @ RNK 220 and Zoom Thu, 3:00 p.m. – 3:50 p.m. @ RNK 220 and Zoom
OFFICE HOURS:	TAs will be available during office hours at Virtual Zoom Offices Thu. 01:55–02:45 p.m. Thu. 03:55–03:50 p.m. any other time by appointment
COURSE WEBSITE:	Canvas https://lss.at.ufl.edu/
EMAIL:	Mail tool in Canvas
PREREQUISITES:	BCN 3255C – Graphic Communication in Construction (Successful completion of Graphic Communication in Construction automatically ensures that the student has the prerequisite for this course as it is now designed.)

COURSE DESCRIPTION

Learn current building information modeling (BIM) software to identify design errors, to improve construction process.

COURSE METHOD

- The class meets twice weekly: a one-hour session and a two-hour session.
- **Synchronous Sessions:** Some class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

- **Asynchronous Sessions:** Some class sessions (specially the software-related sessions) may be audio visually recorded prior to the session and then the links to the recorded contents will be provided to students on CANVAS either before or during the session.

COURSE LEARNING OUTCOMES

At the completion of the course, students will be able to demonstrate the ability to:

- ❶ Use building information modeling to identify design errors (SACS 5, ACCE SLO 10)
- ❷ Use building information modeling to improve construction process (SACS 5, ACCE SLO 10)
- ❸ Create a basic building information model (SACS 5, ACCE SLO 10)
- ❹ Manipulate a building information model using current software tools (SACS 5, ACCE SLO 10)

SACS = Southern Association of Colleges and Schools

ACCE = American Council for Construction Education

SLO = Student Learning Outcome

SACS 5: Communicate technical and financial data effectively in speech and in writing to all stakeholders in the construction process.

ACCE SLO 10: Apply electronic-based technology to manage the construction process

TEXTBOOKS

Required content/material will be provided by instructor through CANVAS.

HARDWARE AND SOFTWARE REQUIREMENT

Hardware Requirements:

- **Mouse**
 - A **mouse** with a **scroll wheel** is **required** for this class.
- **Webcam and Microphone**
 - A **webcam** and **microphone** are required to attend the session and also to take the quizzes and tests online. Many laptops come with built-in cameras and microphones; if not, you will be required to have them separately.
- **Laptop**
 - A **laptop** computer is **required** for all the students in the Rinker School. Therefore, in this class you will be allowed to work only on your own laptop. If anything goes wrong with your laptop, notify the instructor as soon as the problem occurs. In that case, you will be allowed to use only the computers in the Rinker School computer lab. If you use anyone else's computer (besides your own or a computer in the Rinker School computer lab), it will be considered violation of the Rinker School policy and, thus, will be dealt with accordingly.
 - For more information about **BCN's computer requirements** visit the website: <https://dcp.ufl.edu/rinker/academics/computer-requirements/>

Software Requirements:

- **Course-related Software:**
 - **Autodesk Revit 2021:**
 - Download Link: <https://www.autodesk.com/education/free-software/revit>
 - You need to create an Autodesk account using your UFL email address
 - The student-version is available for free through your Autodesk account
 - **Navisworks Manage 2021:**
 - Download Link: <https://www.autodesk.com/education/free-software/navisworks-manage>

- The student-version is available for free through your Autodesk account
 - Installation is very similar to Revit (Logging in to the same Autodesk account you created for Revit using your UFL email address)
 - Please make sure that you download and install **Navisworks Manage** and not Freedom
 - **Other Software/App/Cloud-based Tools** (The list will be updated throughout the semester)
 - Autodesk ReCap 360 Pro (latest version):
 - Download Link: <http://www.autodesk.com/education/free-software/recap-360-pro>
 - You might have already installed this software when installing Revit. Check before installing this!
 - Augment Desktop:
 - Download Link: <http://www.augment.com/technology/augment-desktop/>
 - SmartReality+:
 - Download Link: <http://smartreality.co/>
 - HoloBuilder:
 - Download Link: <https://www.holobuilder.com/>
- **Exam/Quiz/...-related Software:**
 - **Honorlock**
 - All the exams, quizzes, in-class projects will be proctored online using **Honorlock**
 - How to use Honorlock (Canvas Student Guide): <https://www.youtube.com/watch?v=xLSRgrBMz6c&feature=youtu.be>
 - Honorlock Student Guide: https://drive.google.com/file/d/1kzVSvd_wlGm0Edaw38PE6KjKhobCQxVt/view

GRADING CRITERIA

Grades are viewed as a means to communicate evaluation of your work and progress. Specific evaluation criteria will be provided with each exam/project/class activity. Work will be evaluated through in-class feedback and/or written commentary. Projects, exams, and individual assignments during the semester will be numerical grades. Each of them will be evaluated and those evaluations will be provided to students based on their request. The breakdown of grades will depend on:

Activities*	Points
BIM & Construction Management Project Assignments (A)	360
BIM & Reality Capturing & Visualization Project Assignments (B)	320
BIM & Field-related Technologies Project Assignments (C)	120
Final Poster /Project	200
Total:	1000

**Activities and assessments may be modified where necessary as determined by the instructor; proper notification will be given*

Grades will not be curved but you will have various opportunities throughout the semester to achieve extra points for exhibiting more engagement and learning. Your “Total Points” will be divided by 10 and then your grades will be computed according to the following scale:

A 93.00-100	B+ 87.00-89.99	C+ 77.00-79.99	D+ 67.00-69.99	E less than 60.00
A- 90.00-92.99	B 83.00-86.99	C 73.00-76.99	D 63.00-66.99	
	B- 80.00-82.99	C- 70.00-72.99	D- 60.00-62.99	

ASSESSMENT METHODS AND TARGETS

Assessment	CLO 1	CLO 2	CLO 3	CLO 4	Target
Project Assignments/Reports (A)	X			X	At least 80% receive a C- or better
Project Assignments/Reports (B)			X		At least 80% receive a C- or better
Project Assignments/Reports (C)		X			At least 80% receive a C- or better
Final Project	X	X	X	X	At least 80% receive a C- or better

CLASS ATTENDANCE

- **Attendance is strongly encouraged.** In-class assignments/activities/quizzes might be given each lab-lecture period. You need to work on the assigned lecture exercises/lab assignments/quiz during the class. However, if you are not there or you do not work on the assigned exercise/quiz during the class you cannot get credit for participation and assignments. Additionally, extra credit points are occasionally awarded for attendance and participation in the lecture.
- There are **no make-ups** for missed classes unless you discuss your absence with the instructor **before** the classes you miss and provide appropriate **documentation within 1 week** to support your absences. The **make-ups for excused absences** could be done only **for one week after the absence date**.
- If you miss a class, please make arrangement to discuss the missed session with a classmate. You should also get notes from other students.
- If you will miss a class, you must complete and **submit your assignment in advance**, i.e. **before** the class you will miss.

PROJECT ASSIGNMENT

- **Late assignments and late final project will not be accepted, regardless of circumstances.** For late assignments and late final project, student will receive a zero on the assignment/final project.
- All work turned in for this course should have professional quality in content and presentation.
- Assignments may be graded by detailed checking or based on overall attempt. Instructor may choose not to grade some homework.
- All the assignments and final project have to be **submitted exclusively in Canvas**.
- It is **your responsibility** to verify the successful submission of the assignments/final project in Canvas. Submission by **email** or the **digital media** (such as USB drive) **will not be accepted**.
- In the case you have technical difficulties with Canvas, please contact the UF Help Desk at learning-support@ufl.edu, or (352) 392-4357 - select option 2, or go to Ground floor of the Hub. If your technical difficulties will cause you to miss a due date, you **MUST** report the problem to UF Help Desk **before the due date/time**. Include the ticket number that you are given in an e-mail to the instructor to explain the late assignment due to problem with Canvas.
 - Types of questions that should be directed to the Help Desk:
 - I cannot log into Canvas
 - I have clicked on the "submit" button for my assignment and nothing is happening
 - I cannot upload an assignment
 - Canvas has given me an error message and I cannot submit my assignment.
 - Poor internet connections cannot be accommodated with a ticket from the UF Helpdesk.
 - The instructor reserves the right to accept or decline tickets from the UF Helpdesk based on individual circumstances.
- An introduction and support for the E-Learning in Canvas system can be found at: https://lss.at.ufl.edu/help/Student_Faq
- Due to the nature of the class and the Revit/Navisworks software, any consultation regarding assignments/final project and the use of the software will be conducted exclusively **in person**, that is, consultations **via email will not be conducted**.

EXAMS AND PROJECTS

- **Exam and projects are mandatory** and scheduled in advance so plan to attend them at scheduled time.
- There are no make-ups for the missed exams and projects.
- The progress you make on your projects will be reviewed during the class. If you do not show proper progress, your project grade will automatically be zero!
- The majority of the exams, quizzes, in-class projects will be proctored online using **Honorlock**. It would be the students' responsibility to make sure that they have required hardware and software to properly run Honorlock during their in-session exams/quizzes/projects/...
 - See the Hardware and Software Requirements section of the syllabus

STUDENT EVALUATIONS

- Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

COMMUNICATION WITH THE INSTRUCTOR AND TEACHING ASSISTANT

- Use the **Canvas** environment to send an **email** to me and teaching assistant(s). **Do not e-mail me and teaching assistant outside of the Canvas system because emails received outside of Canvas will not receive a response.**
- Please try to communicate with me and teaching assistant(s) **during office hours**.
- Please **CC me and all TAs** within all the communications that you have with us.
- Please allow 24 hours for a response to your email through Canvas. Teaching assistant and I reserve the right not to respond to course inquiries on the weekend as well as on the weekdays after 5 p.m.
- Any communication regarding **grades** will be conducted only **in person** as communication about grades via email or phone is not considered a safe practice. **Any inquiry about the grades must be made within one week after the grade release date.**

HONOR CODE

- UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. [Click here to read the Honor Code](#). Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.
- **Duplication of an assignment and quiz/exam/project/activity** both manually or by computer will be considered an act of academic dishonesty and dealt with accordingly. Any violation of the Honor code will not be tolerated. A student that is found guilty of Academic Dishonesty will be given a **failing grade** for the course.
- Do not allow others to access your files as that will also be considered violation of the Honor Code.

DISABLED STUDENTS

- Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. [Click here to get started with the Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

CLASS DEMEANOR

- All **cell phones** should be **turned off** and **No text messaging** during class.
- **Arriving late** to the class or **leaving before** the end of the class will **not be accepted**. If you are attending the class, you need to be there from the beginning until the end of the class.
- **Exam(s)**: You may leave the exam at any time for any reason, but there will be no re-entry into the exam room. You need to submit your exam before you leave the room. If you will need to leave the room for medical or psychological reasons, be sure to provide me with documentation from the Office for Students with Disabilities.

CLASS SCHEDULE*

Week #	Class #	Day	Date	Topics	Project
1	1	Tue-2hr	12-Jan	Introduction to BCN4252 & Software Requirements	
	2	Thu-1hr	14-Jan	Site Development, Rendering, & Walkthrough	
2	3	Tue-2hr	19-Jan	Site Development, Rendering, & Walkthrough	Project Assignment
	4	Thu-1hr	21-Jan	Site Development, Rendering, & Walkthrough	Project Assignment
3	5	Tue-2hr	26-Jan	Clash Detection	Presentation
	6	Thu-1hr	28-Jan	Clash Detection	Navisworks
4	7	Tue-2hr	2-Feb	Clash Detection	Project Assignment
	8	Thu-1hr	4-Feb	360 Photo/videography	
5	9	Tue-2hr	9-Feb	360 Photo/videography	Project Assignment
	10	Thu-1hr	11-Feb	Quantity Take-off	Presentation
6	11	Tue-2hr	16-Feb	Quantity Take-off	Revit
	12	Thu-1hr	18-Feb	Quantity Take-off	Navisworks
7	13	Tue-2hr	23-Feb	Quantity Take-off	Project Assignment
	14	Thu-1hr	25-Feb	Quantity Take-off	Project Assignment
8	15	Tue-2hr	2-Mar	Construction Technology Review	JBK Construction Technology Report & Future of Work
	16	Thu-1hr	4-Mar	Guest Speaker Presentation	
9	17	Tue-2hr	9-Mar	Photo/Video-grammetry & Laser Scanning (+ UAVs)	Photo/Video-grammetry Presentation + UAV Presentation
	18	Thu-1hr	11-Mar	Photo/Video-grammetry & Laser Scanning (+ UAVs)	Wokflow (Recap360 & VLC) + Downloads (Recap360 & VLC)
10	19	Tue-2hr	16-Mar	Photo/Video-grammetry & Laser Scanning (+ UAVs)	Project Assignment + Q&A
	20	Thu-1hr	18-Mar	Photo/Video-grammetry & Laser Scanning (+ UAVs)	Quiz + Project Assignment Q&A
11	21	Tue-2hr	23-Mar	Virtual & Augmented Reality (AR)	Presentation
	22	Thu-1hr	25-Mar	Virtual & Augmented Reality (AR)	Project Assignment
12	23	Tue-2hr	30-Mar	Virtual & Augmented Reality (AR)	Project Assignment
	24	Thu-1hr	1-Apr	Guest Speaker Presentation	
13	25	Tue-2hr	6-Apr	Workday	Intro to final project
	26	Thu-1hr	8-Apr	Workday & Final Project Review	
14	27	Tue-2hr	13-Apr	Workday & Final Project Review	
	28	Thu-1hr	15-Apr	Workday & Final Project Review	
15	29	Tue-2hr	20-Apr	Final Project Presentation	
	-	-	-		
			24-30 Apr	Final Examinations	This course doesn't have a final exam
			5-May	Final grades available	

** The syllabus represents my current plans and objectives. As we go through the semester, those plans might need to be changed to enhance the class learning opportunity. Such changes, communicate clearly, are not unusual and should be expected.*

BCN4252 Course Roadmap

January

May

