

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

BCN 3255 – GRAPHIC COMMUNICATION IN CONSTRUCTION (3 credits)

Spring 2016

INSTRUCTOR:	Dr. Masoud Gheisari Room 322 Rinker Hall, Phone: 352-273-1166
TEACHING ASSISTANTS:	Hashem Izadi Moud, & Xun Zhang Room 340 Rinker Hall
CLASS TIME/ROOM:	Monday, Wednesday, 9:35 a.m. – 11:30 a.m. (Periods 3-4) RNK 240
OFFICE HOURS:	Monday 11:45 a.m. – 01:40 p.m. (Periods 5-6) Tuesday 12:50 p.m. – 01:40 p.m. (Period 6) Wednesday 11:45 a.m. – 01:40 p.m. (Periods 5-6) And any other time by appointment
COURSE WEBSITE:	Canvas https://lss.at.ufl.edu/
EMAIL:	Mail tool in Canvas
PREREQUISITES:	BCN 1251 - Construction Drawing (Successful completion of Construction Drawing automatically ensures that the student has the prerequisite for this course as it is now designed.)

COURSE DESCRIPTION

This course introduces students to various construction communication tools including building information modeling (BIM), the use of computer-aided drafting (applications of 4-D modeling in construction), piece-based simulations, and blueprint reading. The goal of the course is to help students understand how to apply these communication tools to successfully manage construction process.

COURSE METHOD

- The class meets twice weekly for two hours. Class will have integrated lecture-lab format. Lecture will usually be held at the first 1-hour of each class and then the remaining 1-hour will be used for lab.
- Students are expected to **stay in the class** until they satisfactorily complete and turn-in their assignments. A student is allowed to complete an assignment at home only if a student has remained for the full class period and needs additional time to complete the assignment.

COURSE OBJECTIVES

To teach the student to read, understand and use construction documents, and use building information modeling (BIM) technology. The goal of the course is to help students understand how to apply these communication tools to successfully manage construction process.

COURSE LEARNING OUTCOMES

Upon completion of the course students will demonstrate their ability to:

- ❶ Read, understand and use construction documents (construction drawings and project specifications) (SACS 5, ACCE SLO 7)
- ❷ Use building information modeling (BIM) technology for preconstruction modeling (SACS 5, ACCE SLO 10)
- ❸ Visualize a building and construction process by creating a building information model of a selected building (SACS 5, ACCE SLO 7, 10)
- ❹ Recognize the possibility for using BIM for estimating, scheduling, facility management, and energy analysis (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 7: Analyze construction documents for planning and management of construction processes.

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

TEXTBOOK

Architectural Commercial Design Using Autodesk Revit 2016, Daniel John Stine, SDC Publications, ISBN: 978-1-58503-969-2

RECOMMENDED TEXTS

BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors, 2nd Edition, Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston, Lin Ken-Yu. John Wiley & Sons Publication, 2011, 2nd Edition | 978-0-470-54137-1

REQUIRED EQUIPMENT, MATERIAL, AND SOFTWARE

Hardware Requirements:

- **Mouse**
- **Laptop**

The **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 the computer requirements visit the website:

<http://www.bcn.ufl.edu/computer-requirement/>

Software Requirements:

Autodesk Revit 2016, Navisworks Manage 2016, Microsoft Project,, etc.

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
Quizzes	150
Midterm Exam	200
Semester-long Commercial Building Project (Individual)	200
BIM-based Technology Reflections	100
Navisworks Assignments	50
Final Project (Group)	300
	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 93-100	B+ 87-89.9	C+ 77-79.9	D+ 67-69.9	E less than 60
A- 90-92.9	B 83-86.9	C 73-76.9	D 63-66.9	
	B- 80-82.9	C- 70-72.9	D- 60-62.9	

ASSESSMENT METHODS AND TARGETS

Assessment	CLO 1	CLO 2	CLO 3	CLO 4	Target
Quizzes	X	X		X	At least 80% receive a C- or better
Midterm Exam	X	X			At least 80% receive a C- or better
Semester-long Commercial Building Project			X		At least 80% receive a B- or better
BIM-based Technology Reflections				X	At least 80% receive a B- or better
Navisworks Assignments				X	At least 80% receive a B- or better
Final Project		X	X	X	At least 80% receive a C- or better

CLASS ATTENDANCE

- **Class attendance is required.** In-class assignments/activities/Quizzes might be given each lab-lecture periods. 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.
- Plus/Minus Pointing system for the class attendance

# of Unexcused Absences	Plus/Minus Points to the Final Grade
0	Plus 25
1	0
2	Minus 25
3	Minus 50
4	Minus 75
5 or more	Minus 100

- There are **no make-ups** for missed classes unless you discuss your absence with the instructor **before** the class you miss.
- Instructor may choose the days for taking the rolls.
- If you miss class, please make arrangement to discuss the missed session with a classmate. You should also get notes from other students.
- If you will miss the class, you must complete and **submit your assignment in advance**, i.e. **before** the class you will miss.
- If you **get sick** and cannot attend the class you need to **contact the instructor** on the day you do not feel well.
- Students are required to provide appropriate **documentation within one week** to support their absence.

ASSIGNMENTS/FINAL PROJECT

- **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**.

MIDTERM EXAM

- **Exam(s) are mandatory** and scheduled in advance so plan to attend them at scheduled time.
- There are no make-ups for the missed quizzes and midterm exam.

COMMUNICATION WITH THE INSTRUCTOR AND TEACHING ASSISTANT

- Please try to communicate with the instructor and teaching assistant **during office hours**.
- Use the **Canvas** environment to send an **email** to the instructor and teaching assistant. **Do not e-mail the course instructor and teaching assistant outside of the Canvas system because emails received outside of Canvas will not receive a response.**
- Please allow 24 hours for a response to your email. The instructor and teaching assistant 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

- **The Honor Code will be applied in the class.**
- We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**
- **Duplication of an assignment and quiz/exam/project/activity** either manually or by computer will be consider an act of academic dishonesty and dealt with accordingly.
- Do not allow others to access your files as that will also be considered violation of the Honor Code.
- Visit the website <http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php> for more information about the University of Florida Student Honor Code.
- 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.

DISABLED STUDENTS

- Any student that needs accommodation regarding physical access, class attendance, notes, or lecture please contact instructor.
- Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

CLASS DEMEANOR

- All **cell phones** should be **turned off**.
- **No text messaging** during class.
- All **laptops** should be **turned off** (except for the Revit, Navisworks, Final Project classes and Labs).
- **Arriving late** to the class or **leaving before** the end of the class will **not be accepted**. You need to attend the class from the beginning until the end of the class. You will be considered tardy if arriving after 9:35 a.m. and leaving prior to 11:30 a.m.
- **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	Content/Details	Software Requirements	Quiz/Assignment/Dues
1	Mon	4-Jan	-	-	Revit 2016	
	Wed	6-Jan	Introduction	Syllabus Course Overview. And Software Installation		
2	Mon	11-Jan	What is BIM?	disadvantages of descriptive geometry/2D drawings; concept of Bi; BIM main features; 3D, 4D, 5D, ... , nD BIM; BIM interoperability issue; Revit UI (User Interface)	Revit 2016	
	Wed	13-Jan	Revit 2016 (Part 1): Getting started with Autodesk Revit 2016	Overview of Revit user interface; Open, save, and close existing project; Creating a new project; Using zoom and pan to view your drawings		
3	Mon	18-Jan	No Class	Martin Luther King Jr. Day	Revit 2016	
	Wed	20-Jan	Revit 2016 (Part 2): Small Office Quick Start	Walls, grids and dimensions; Doors; Windows; Roof; Annotation, Room tags & schedule		
4	Mon	20-Jan	Revit 2016 (Part 3-a): Floor Plan (First Floor)	Project overview; Exterior walls; Interior Walls	Revit 2016	
	Wed	27-Jan	Revit 2016 (Part 3-b): Floor Plan (First Floor)	Elevator; Doors & Windows		
5	Mon	1-Feb	BIM-based CommTech in Construction I: BIM & VDC	-	Revit 2016	BIM & VDC Class Reflection
	Wed	3-Feb	Revit 2016 (Part 4): Floor Plans (2nd& 3rd Floors)	Copy common walls from first floor; additional interior walls; Setting the floor-to-floor height; Stairs		Quiz #1 (Parts 1-3)
6	Mon	8-Feb	Revit 2016 (Part 5): Roof	Roofs; Skylights	Revit 2016	
	Wed	10-Feb	Review: (Revit Parts 1-5)			
7	Mon	15-Feb	Revit 2016 (Part 6): Floor systems and Reflected Ceiling Plans	Floor systems; Ceiling systems (Susp. ACT & Gypsum board); Placing fixtures (lights & diffusers); Annotation	Revit 2016	
	Wed	17-Feb	Revit 2016 (Part 7): Interior & Exterior Elevations	Creating & viewing exterior elevations; Modifying the project model (exterior elevations); Creating & viewing interior elevations; Modifying the project model (interior elevations); Adding mullions to a curtainwall		Quiz #2 (Parts 4-6)
8	Mon	22-Feb	Revit 2016 (Part 10): Schedules	Room & door tags; generate a door schedule; generate room finish schedule	Revit 2016	
	Wed	24-Feb	Revit 2016 (Part 12): Construction Document Set	Setting up a sheet; Sheet index; Printing a set of drawings		

9	16	Mon	29-Feb	No Class	Spring Break		-
	17	Wed	2-Mar	No Class	Spring Break		-
10	18	Mon	7-Mar	Review: (Revit Parts 6, 7, 10, & 12)			Revit 2016
	19	Wed	9-Mar	Midterm Exam-Project A Revit-based Project			Revit 2016
11	20	Mon	14-Mar	BIM-based Tech in Construction II: BIM & Mixed/Augmented Reality			Navisworks 2016, MS Project, Revit 2016
	21	Wed	16-Mar	Navisworks 2016 (Part 1): Getting started with Navisworks 2016	Basic features; Benefits of using Navisworks; User interface; Configuring settings in Navisworks; File types in Navisworks; Exploring the Navigation tools in Navisworks		Navisworks 2016, MS Project, Revit 2016
12	22	Mon	21-Mar	Navisworks 2016 (Part 2): Intro to scheduling using MSProject	Project start date; define & insert tasks; task duration and project calendar; sequence of tasks and task relationships; Manual & automatic scheduling		Navisworks 2016, MS Project, Revit 2016
	23	Wed	23-Mar	BIM-based Tech in Construction V: BIM and Photo/Videogrammetry			Navisworks 2016, MS Project, Revit 2016
13	24	Mon	28-Mar	Navisworks 2016 (Part 3-a): 4D Scheduling with Navisworks 2016	Timeliner; Tasks; Data source; Simulate; Exporting animation from Timeliner		Navisworks 2016, MS Project, Revit 2016
	25	Wed	30-Mar	Navisworks 2016 (Part 3-b): 4D Scheduling with Navisworks 2016	No sets/schedule has been defined; Define sets based on your tasks at schedule; Navisworks final review		Navisworks 2016, MS Project, Revit 2016
14	26	Mon	4-Apr	BIM-based Tech in Construction VI: BIM and 3D Printing			Navisworks 2016, MS Project, Revit 2016
	27	Wed	6-Apr	No Class	ASC Conference		Navisworks 2016, MS Project, Revit 2016
15	29	Mon	11-Apr	Final Project: Workday	Introduction to Final Project		Navisworks 2016, MS Project, Revit 2016, Augment
	30	Wed	13-Apr	Final Project: Workday			Navisworks 2016, MS Project, Revit 2016, Augment
16	31	Mon	18-Apr	Final Project: Workday			Navisworks 2016, MS Project, Revit 2016, Augment
	32	Wed	20-Apr	Final Project: Workday	Classes End		Navisworks 2016, MS Project, Revit 2016, Augment
			23-29 Apr	Final Examinations			
			4-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.

BCN3255 Course Roadmap

April

January

