

**Construction Management Department
California State University, Chico**

**CMGT 270 – Construction Graphics
Course Syllabus**

A. Prerequisites

CMGT 110 with some experience in using Autodesk Revit Architecture.
Completion or co-enrollment in CMGT 210
Fundamental knowledge for MS Operating System, Microsoft Office, and Adobe Acrobat software.

B. Meeting Time & Location

CMGT 270-1	Tue	4:00PM – 5:50PM	O’Connell 127
CMGT 270-2	Thu	4:00PM – 6:50PM	O’Connell 127

C. Instructors

Mike Borzage	mycmgt110@gmail.com	Willem Kymmell	wkymmell@csuchico.edu
Office Hours:	Tue 2:00pm – 4:00pm Wed 11:00 am-1:00 pm or by appointment	Office Hours:	Tue 11:00 am – 1:00 pm Wed 2:00pm – 4:00 pm or by appointment
Office Location:	O’Connell 329	Office Location:	O’Connell 325
Office Phone:	530-898-4505	Office Phone:	530-898-6221

D. Catalog Description:

The purpose of this course is to provide an understanding of Virtual Design and Construction (Building Information Modeling), and the ability to plan, represent and analyze construction projects through the creation and use of 3D computer models.

You will become more proficient in the use of SketchUp, Revit, Assemble and Vico Office in order to create a virtual building model from which you will generate a schematic level cost estimate and construction schedule. During this course you will also be reading about and discussing BIM management concepts that will enable you to implement the use of virtual models in a construction management setting. The management and organization of the actual information from the models is an important skill for the construction industry.

E. Course Learning Outcomes (CLO):

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

1. Identify key Building Information Modeling Terminology.
2. Apply the Principles and Concepts of 2D Construction Graphics and 3D Modeling. Analyze construction documents for planning and management of construction processes.
3. Learn to implement Virtual Construction and Modeling software tools in the Design and Construction industry.
4. Demonstrate Skills in Building and Analyzing more complex and detailed 3D Computer Models. Implement electronic-based technology to manage the construction process.

F. Course Resource Materials Requirements:

Textbooks:

REQUIRED TEXT:

1. "Building Information Modeling" by Willem Kymmell, McGraw Hill, 2008

RECOMMENDED REFERENCE TEXTS:

1. The BIM Handbook, by Eastman, Teicholz, Sacks, Liston, Wiley, 2008
2. Autodesk Revit Architecture 2013, by Eric Wing. Sybex publishing.
3. Mastering Autodesk Navisworks 2013, by Jason Dodds, Scott Johnson. Sybex publishing.

Required Tools: Please bring your required course tools to each class for use.

1. Autodesk Revit Architecture and Navisworks software (student versions available free on-line).
2. Trimble SketchUp & Vico Office software (student versions available free on-line).
3. Autodesk Navisworks Manage software (student version available free on-line).
4. A set of plans for the 'West Street Video Store' project. (Provided on Blackboard learn)

Laptop Computer: A personal computer will be required for assigned activity work. The computers in the university lab **DO NOT HAVE THE NECESSARY SOFTWARE INSTALLED.**

Revit, Navisworks and Vico Office do not work on Mac based computer operating systems.

You will be responsible to have a PC based laptop or install a windows operating system on your Mac computer (dual boot environment only!). See the "Use of Laptops" section of Blackboard learn for further information.

G. Course Requirements:

Conduct

All students are adults and will be treated and respected as such. This means that you will be held accountable for your actions, decisions, and their consequences. Each of you has to conduct yourself in a professional and mature manner, showing courtesy and respect for fellow students and the instructor. **During class time NO unprofessional behavior will be tolerated, and if observed, will result in you being asked to leave and forfeit that day's participation points. The classroom needs to reflect the professional environment of the Construction Managers Office.**

Honesty in the Classroom

You are expected to be familiar with the University's policy on academic integrity. As such, there is no tolerance for dishonesty, sharing of work, and especially copied work. Ethical standards as established by the university will be strictly upheld (see THE UNIVERSITY CATALOG).

Tobacco Products

The use of any type of tobacco product including smokeless, chewable or otherwise is not permitted in any building at California State University, Chico.

Electronic Devices

The use of pagers, phones, MP3 players and other electronic devices (excluding laptops) is not permitted in class. If you must take a call (work or emergency), please EXIT the classroom before answering the call.

Withdrawal from Class

Please refer to the Academic Calendar Deadlines as published in the University Catalog.

Professional Work

As a student looking towards gaining an internship within the construction industry, it is expected that your completed work will be professional in presentation. Consider this course as practice in presenting professional quality industry work to your future employer.

H. Instructional Methods:

This course is designed around the following methods of presenting material to the student:

1. Class discussions (and homework assignments) reinforced by in class quizzes and exams.
2. Homework assignments (these may be started in class and finished outside of class time as necessary), which are designed to reinforce the students learning process of reading drawings, visualizing 3D forms and using computer software in a 2D and 3D construction environment.
3. Quizzes to inform the student of strengths and weaknesses in the course material before the exams.

I. Activities, Assignments:

This course has regular activities (homework assignments) that may build on each other. **All assignments are due as shown in the class schedule, late submittals will be marked down 10% per day.** Completed assignments are due at the beginning of class as per Class Schedule posted on Bbl; please bring your work pre-printed to class for submission or post it on Bbl as per instructions.

All assignments are expected to be well organized, legible, and have a professional appearance. Homework assignment requirements will be posted on Blackboard Learn and clearly defined prior to the due date to give each student the time to complete it professionally.

Group Work

You are encouraged to study and work in groups, however all submitted work must be your own original work. **DO NOT SHARE YOUR WORK WHEN YOU WORK TOGETHER, SHARE YOUR UNDERSTANDING OF THE MATERIAL.**

J. Assessments:

Assessments are the basis of determining your ability to create, analyze, apply, and understand the Course Learning Outcomes (CLO) and Student Learning Outcomes (SLO) provided by ACCE. Instructional target goals have been established (as noted above) and the results of the assessment in these areas will be used to determine the success of the student and instructor for this course.

Participation, Attitude, and Attendance:

You must attend all classes and lab periods. There will be a sign-in sheet to track this requirement. If you fail to sign this sheet (for any reason) you are marked as “**missing**”, and no credit can be given to you. EXCEPTION: Since no one is perfect, you will be allowed to miss two classes for any reason, and one class with evidence (doctor note, court notice). However, field trips, interviews, five star vacations will NOT be given any additional consideration. Plan accordingly.

At the discretion of the instructor, your grade may be raised for your enthusiastic participation in the class. This is generally exemplified by such means as voluntarily answering of question, and visits during office hours, as well as not missing any classes and staying the entire scheduled time.

Quizzes:

No makeup. Some Quizzes will be announced, others will not. Come to class prepared.

Exams:

There will be two mid-term exams and one final exam. The final exam will cover the coursework from the whole semester. **If a student is unable to take an exam due to an emergency or illness, or is entitled to special dispensation the instructor should be notified in advance.** Non-excused absences will yield a score of zero. No makeup exams will be given, except for a serious and compelling reason as outlined by the University Catalog.

Class Buddy:

Make friends with a classmate, who will “cover” for you if or when you are unable to attend class. Ask your “class buddy” the stupid questions, such as; “Did I miss anything today?”!

Record of Your Work:

Collect and/or keep printed copied of all of your work. If there is any question relating to any assignment, bring this work **(in your binder) to the instructor for review.**

Return of Work:

Generally, assignments and quizzes will be returned in the next class. It is your responsibility or that of your “class buddy” to collect and retain these. Unclaimed work will be lost. **LATE WORK.** You will be allowed one late submittal of your work! However, this must be turned in within one week of the original due date, and will only be for one half credit. AND, in addition, there will be one throw out for your lowest assignment score.

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K. Grading/Evaluation:

All work submitted for this course will be evaluated for:

1. CONTENT, THOROUGHNESS, and ACCURACY
2. FORMAT, i.e. the way in which the model/drawings are presented, the organization and whether it conforms to format requirements and methods outlined in class.
3. QUALITY, CORRECTNESS, and NEATNESS

The point distribution is as follows:

Homework 1, 4	5% ea.	10%
Homework 2, 3, 5	10% ea.	30%
Homework 6	15%	15%
Class participation	10%	10%
Exams 1, 2	10% ea.	20%
Final Exam	15%	15% +

Total

100%

You should give this course your best energy, be encouraged to increase your understanding and remember this is just the beginning of a large area of learning. Be open to reviews of your ideas by others and ask for comments and help at any time.

L. Topical Outline

See the Course Schedule on Blackboard Learn.

M. University Policies and Campus Resources

Disruptive Behavior

Students are required to adhere to the behavior standards articulated in the Campus Policies and Code of Student Conduct, and to refrain from disrupting classes and other academic settings. "Disruptive behavior" means conduct that materially and substantially interferes with or obstructs the teaching or learning process in the context of a classroom or educational setting. Disruptive behavior includes conduct that distracts or intimidates others in a manner that interferes with instructional activities, fails to adhere to an instructor's appropriate classroom rules or instructions, or interferes with the normal operations of the University. Disruption in the classroom may include:

- Persistent speaking without permission.
- Side conversations.
- Excessive talking.
- Engaging in activities not related to the class, or other overt inattentiveness including but not limited to sleeping, talking to others, doing work for another class, checking e-mail, and exploring the Internet.
- Ringing cell phones or using a cell phone.
- Using mobile devices or laptop computers in the classroom for non-course related purposes.
- Eating/drinking in class without permission.
- Monopolizing class discussion and refusing to defer to instructor, or listen to others; persisting when the instructor has indicated that the student's remarks are off topic and it is time to move on.
- Chronically entering late/leaving early, moving about the classroom when not appropriate for the classroom activity.
- Filming, photographing, or taping the class without the instructor's prior permission.
- Disputing authority or arguing with faculty and other students.
- Yelling, arguing, swearing, bullying, or other harassing or intimidating behavior.
- Inappropriate, disrespectful, or uncivil responses to the comments, opinions, presentations, etc. of others in the classroom.
- Physically or verbally abusive conduct.
- Failure to adhere to the instructor's rules or instructions.
- Vulgar or obscene language, slurs or other forms of intimidation.
- Threats of any kind.

- Improper use of equipment, materials or resources.
- Destruction of property.
- Coming to class under the influence of alcohol or another controlled substance.
- Bringing individuals to class who are not enrolled, including infants/children.
- Any behavior that puts the health or safety of the instructor or other students in the classroom in jeopardy.

Academic integrity

Students are expected to be familiar with the University's Academic Integrity Policy. Be familiar with the University's policy on academic honesty, this is a serious issue, no form of dishonesty such as plagiarism or cheating will be tolerated. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found at:

<http://www.csuchico.edu/sjd/sja.shtml>

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Students with disabilities requesting accommodations must register with the DSS Office (Disability Support Services) to establish a record of their disability.

Special accommodations for exams require ample notice to the testing office and must be submitted to the instructor well in advance of the exam date.

Student Computing

Computer labs for student use are available <http://www.csuchico.edu/stcp> located on the 1st floor of the Merriam Library Rm 116 and 450, Tehama Hall Rm.131 and the BMU Rm 301.

Student Services

Student services are designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. Students can find support for services such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. Student services information can be found at: <http://www.csuchico.edu/5.-studentservices.html>.

Disability Services

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please also contact the Disability Support Services office to coordinate reasonable accommodations for students with documented disabilities. Disabilities Support Services online:

<http://www.csuchico.edu/dss/studentServices/>.

Student Learning Center

The mission of the Student Learning Center (SLC) is to provide services that will assist CSU, Chico students to become independent learners. The SLC prepares and supports students in their college course work by offering a variety of programs and resources to meet student needs. The

SLC facilitates the academic transition and retention of students from high schools and community colleges by providing study strategy information, content subject tutoring, and supplemental instruction. The SLC is online at <http://www.csuchico.edu/slc/>. The University Writing Center has been combined with the Student Learning Center.

N. Other

Title IX: Confidentiality and Mandatory Reporting

As a Chico State instructor, one of my responsibilities is to help create a safe learning environment for Chico State students. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. **However, I am required to share information regarding sexual misconduct with the University.**

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